

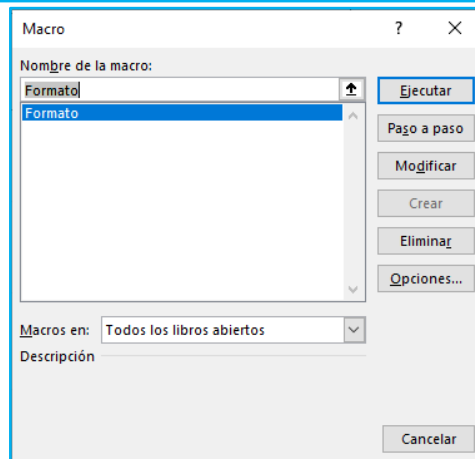
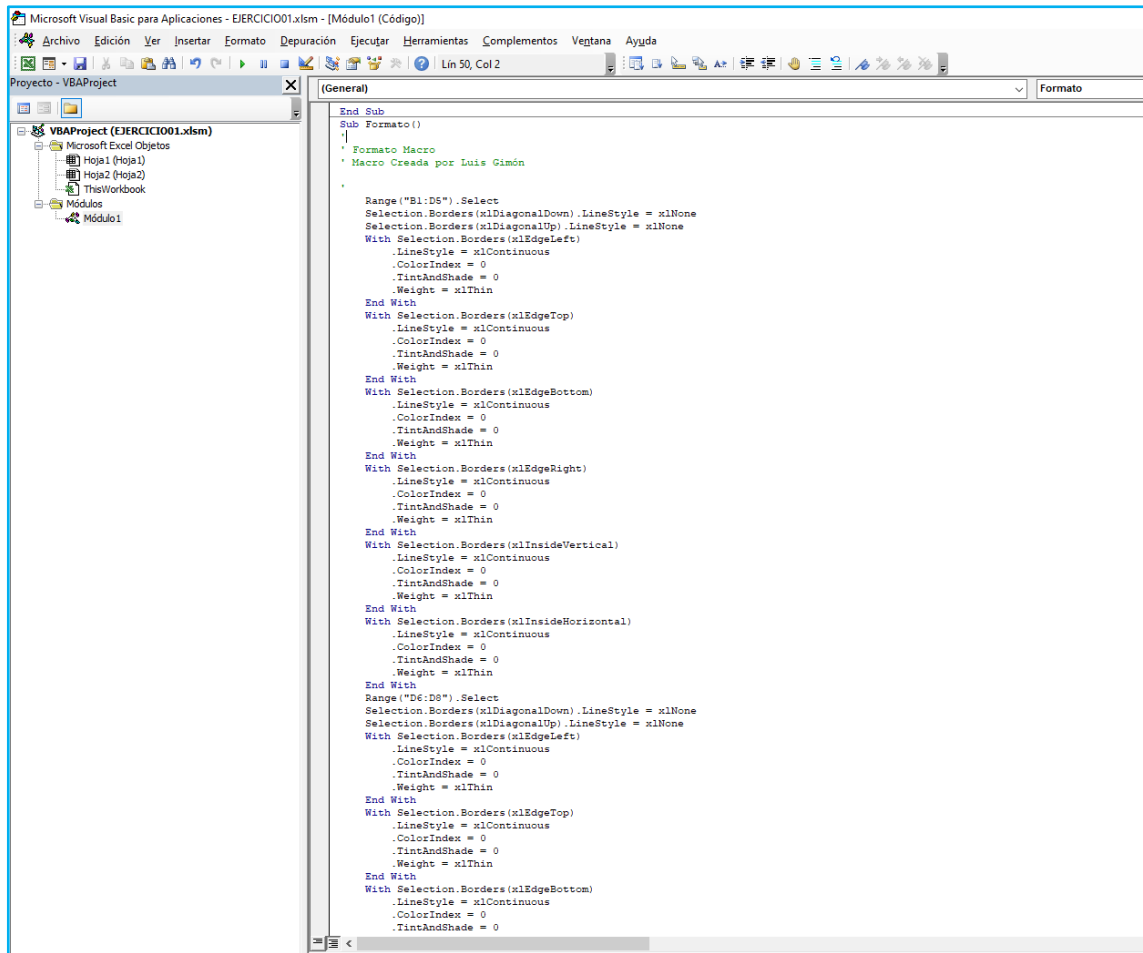
## SOLUCIONES EJERCICIOS CURSO MACROS Y PROGRAMACION VBA EXCEL

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## 01.- GRABADORA DE MACROS

### Solución 01.01



## Solución 01.02

```

Sub SubTotal()
'
' SubTotal Macro
' Macro Creada por Luis Gimón
'
    ActiveCell.Select
    Application.CutCopyMode = False
    ActiveCell.FormulaR1C1 = "=RC[-2]*RC[-1]"
    ActiveCell.Offset(1, 0).Range("A1").Select
End Sub

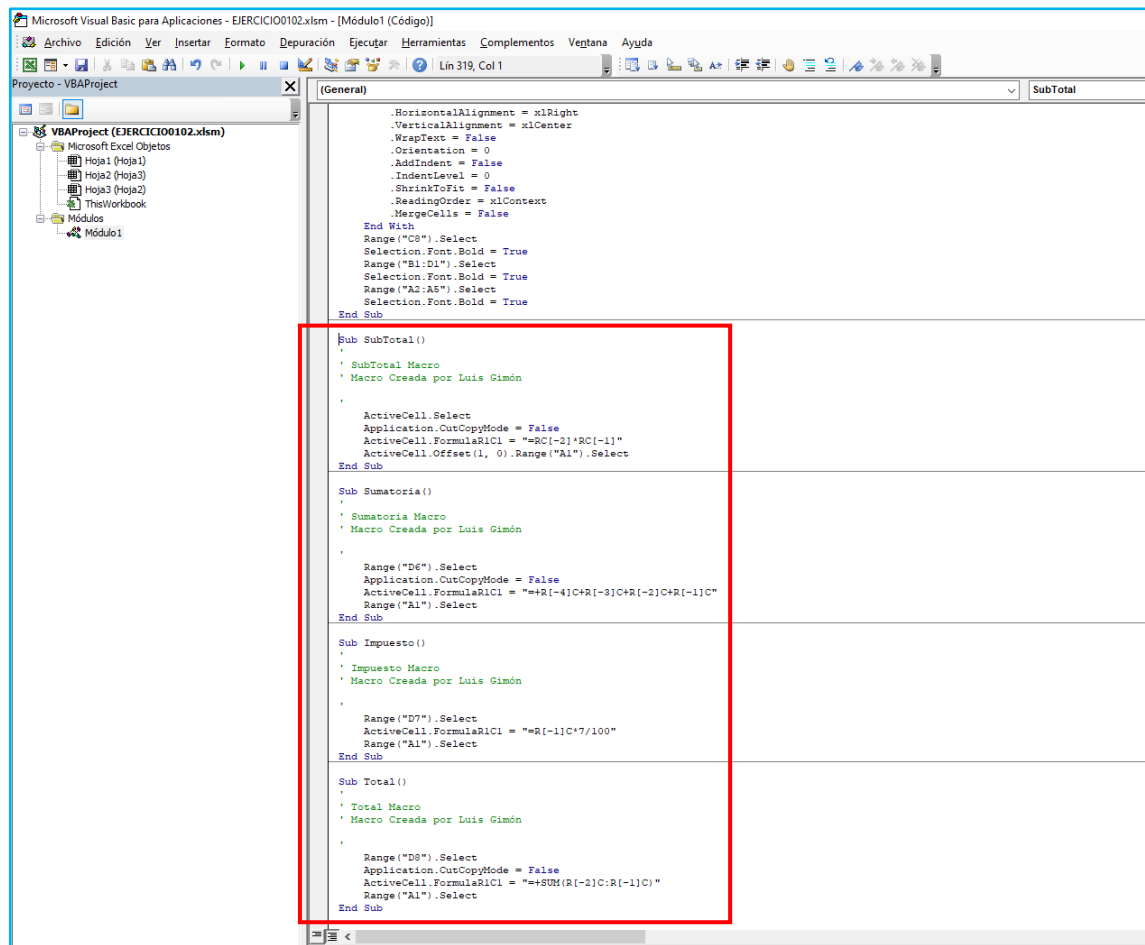
Sub Sumatoria()
'
' Sumatoria Macro
' Macro Creada por Luis Gimón
'
    Range("D6").Select
    Application.CutCopyMode = False
    ActiveCell.FormulaR1C1 = "="+R[-4]C+R[-3]C+R[-2]C+R[-1]C"
    Range("A1").Select
End Sub

Sub Impuesto()
'
' Impuesto Macro
' Macro Creada por Luis Gimón
'
    Range("D7").Select
    ActiveCell.FormulaR1C1 = "=R[-1]C*7/100"
    Range("A1").Select
End Sub

Sub Total()
'
' Total Macro
' Macro Creada por Luis Gimón
'
    Range("D8").Select
    Application.CutCopyMode = False
    ActiveCell.FormulaR1C1 = "="+SUM(R[-2]C:R[-1]C)"
    Range("A1").Select
End Sub

```

## SOLUCIONES EJERCICIOS CURSO MACROS Y PROGRAMACION VBA EXCEL



```
Microsoft Visual Basic para Aplicaciones - EJERCICIO0102.xlsm - [Módulo1 (Código)]
Archivo  Edición  Ver  Insertar  Formato  Depuración  Ejecutar  Herramientas  Complementos  Ventana  Ayuda
Lin 319, Col 1

Proyecto - VBAProject
  VBAProject (EJERCICIO0102.xlsm)
    Microsoft Excel Objetos
      Hoja1 (Hoja1)
      Hoja2 (Hoja2)
      Hoja3 (Hoja3)
      ThisWorkbook
    Módulos
      Módulo1

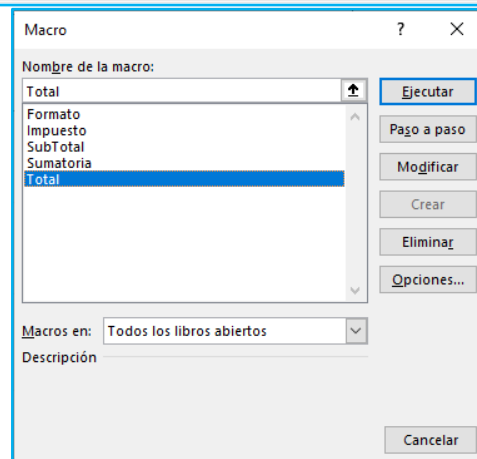
(SubTotal)
    .HorizontalAlignment = xlRight
    .VerticalAlignment = xlCenter
    .WrapText = False
    .Orientation = 0
    .AddIndent = False
    .IndentLevel = 0
    .ShrinkToFit = False
    .ReadingOrder = xlContext
    .MergeCells = False
End With
Range("C8").Select
Selection.Font.Bold = True
Range("D1:D1").Select
Selection.Font.Bold = True
Range("A2:A5").Select
Selection.Font.Bold = True
End Sub

Sub SubTotal()
'
' SubTotal Macro
' Macro Creada por Luis Gimón
'
    ActiveCell.Select
    Application.CutCopyMode = False
    ActiveCell.FormulaR1C1 = "=RC[-2]*RC[-1]"
    ActiveCell.Offset(1, 0).Range("A1").Select
End Sub

Sub Sumatoria()
'
' Sumatoria Macro
' Macro Creada por Luis Gimón
'
    Range("D6").Select
    Application.CutCopyMode = False
    ActiveCell.FormulaR1C1 = "=R[-4]C+R[-3]C+R[-2]C+R[-1]C"
    Range("A1").Select
End Sub

Sub Impuesto()
'
' Impuesto Macro
' Macro Creada por Luis Gimón
'
    Range("D7").Select
    ActiveCell.FormulaR1C1 = "=R[-1]C*7/100"
    Range("A1").Select
End Sub

Sub Total()
'
' Total Macro
' Macro Creada por Luis Gimón
'
    Range("D8").Select
    Application.CutCopyMode = False
    ActiveCell.FormulaR1C1 = "=SUM(R[-2]C:R[-1]C)"
    Range("A1").Select
End Sub
```



Macro

Nombre de la macro:

- Total
- Formato
- Impuesto
- SubTotal
- Sumatoria
- Total

Macros en: Todos los libros abiertos

Descripción

Ejecutar

Pago a paso

Modificar

Crear

Eliminar

Opciones...

Cancelar

### Solución 01.03

Una vez creada la Macro, seleccionamos el **Rango A1:D8** y la probamos.

**Sub AutoAjustarFilaColumna()**

,

*' AutoAjustarFilaColumna Macro*

*' Macro Creada por Luis Gimón*

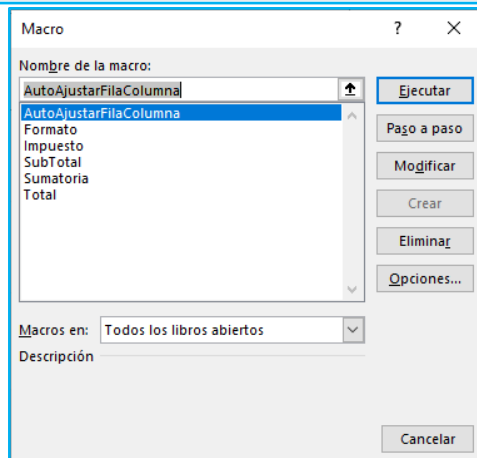
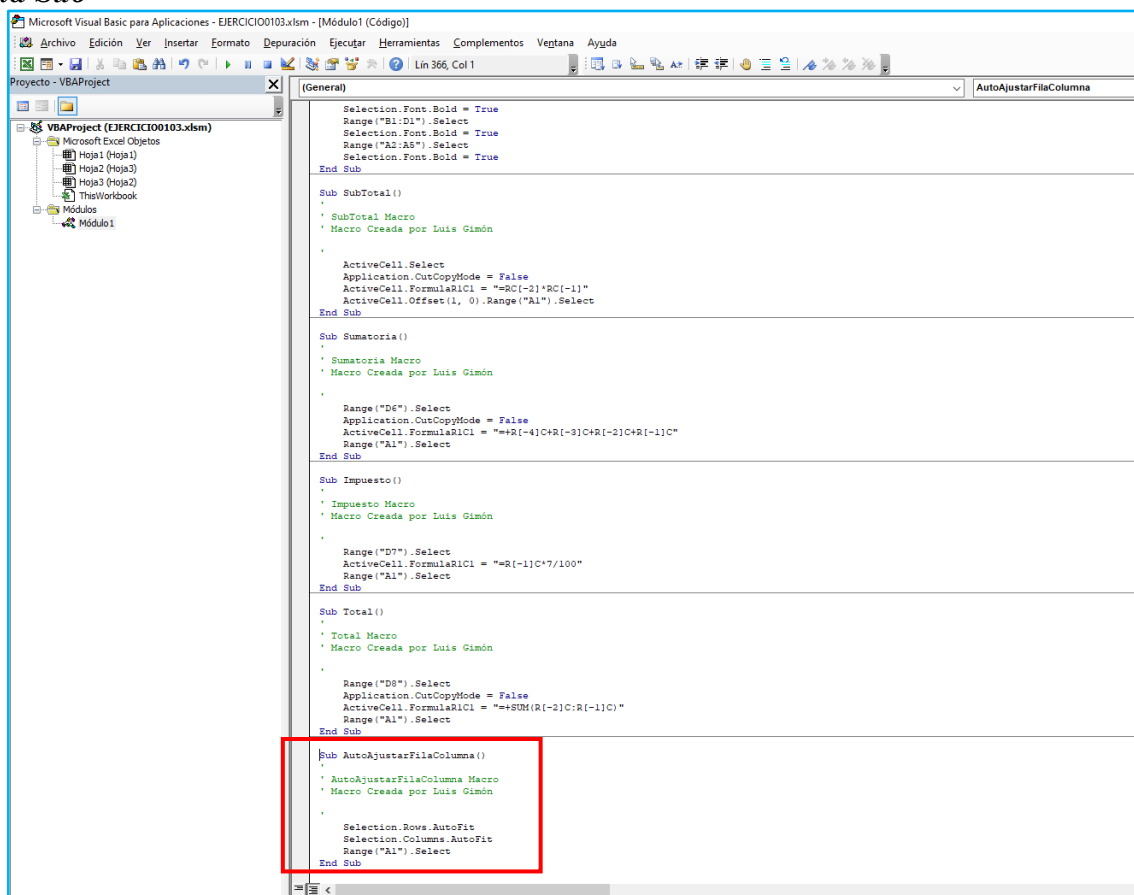
,

**Selection.Rows.AutoFit**

**Selection.Columns.AutoFit**

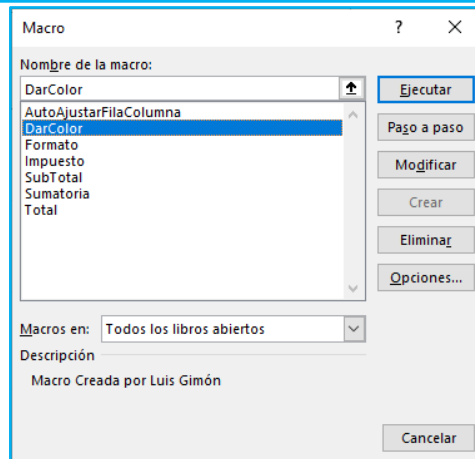
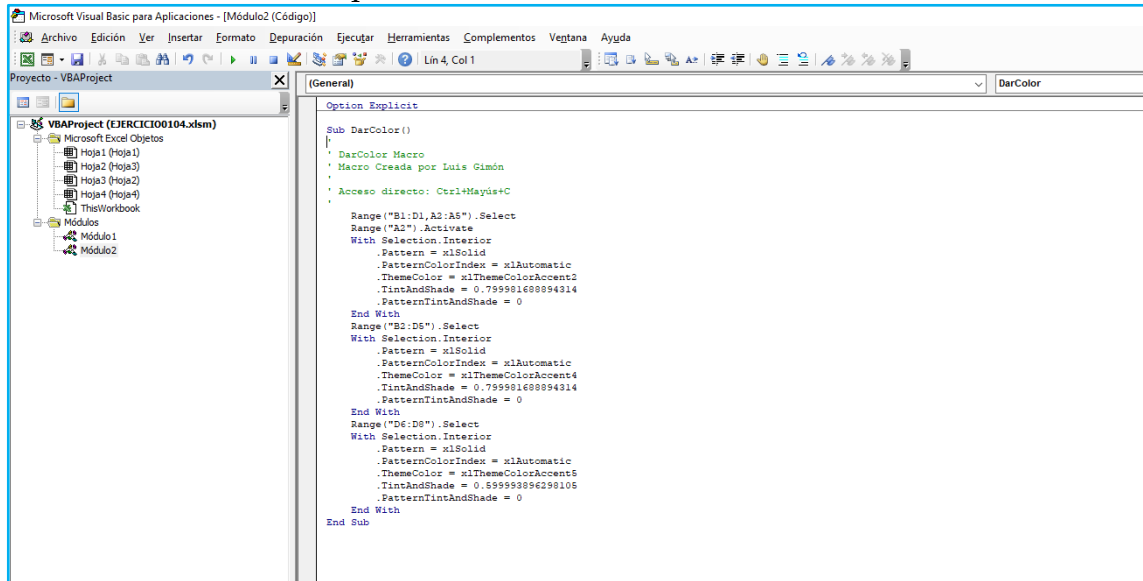
**Range("A1").Select**

**End Sub**



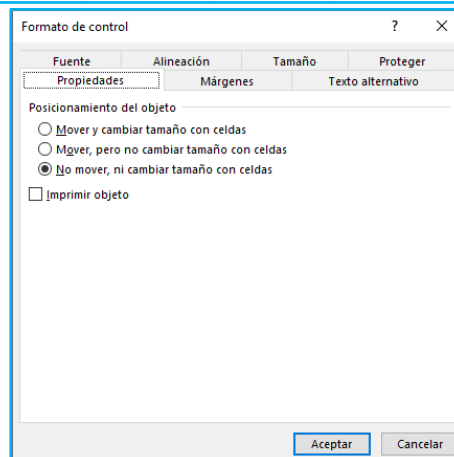
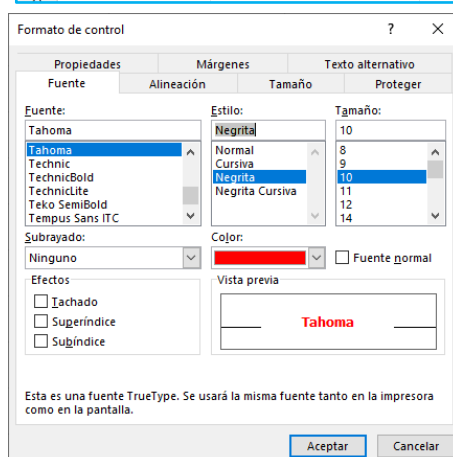
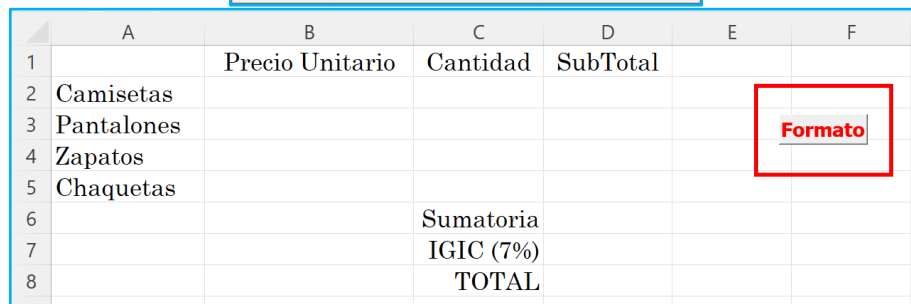
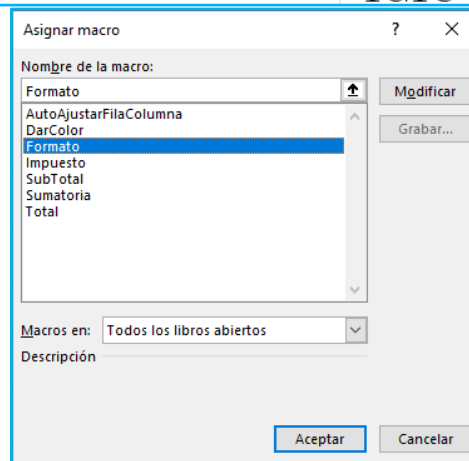
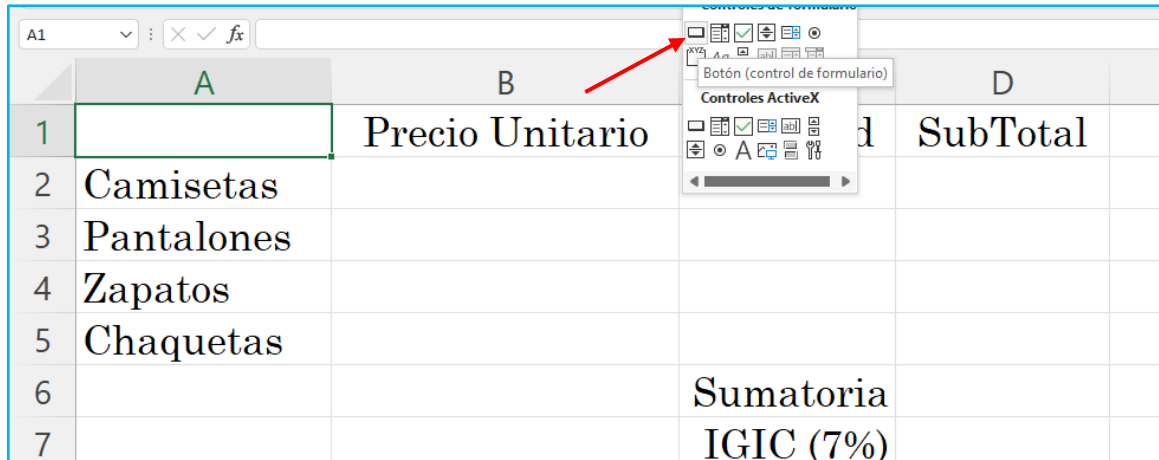
### Solución 01.04

Una vez creada la Macro, pulsamos la Combinación de Teclas **Ctrl+Mayús+C** y obtenemos el resultado esperado.

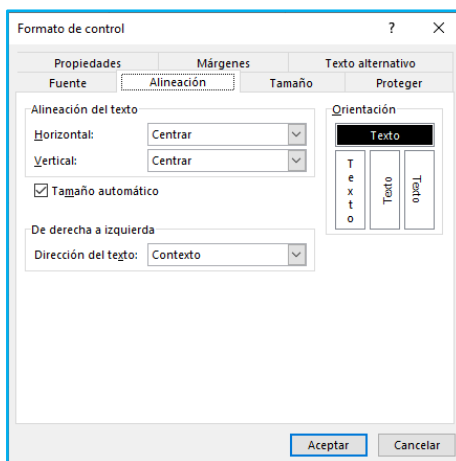


**Solución 01.05**

Desde el **Botón de Insertar Controles**, dentro del **Menú Programador**, insertamos el **Botón de Formulario**, la asignamos la **Macro Formato** y cambiamos el **Formato del Control**.







Al presionar el **Botón de Formulario Formato**, obtendríamos el siguiente resultado.

	A	B	C	D	E	F
1		<b>Precio Unitario</b>	<b>Cantidad</b>	<b>SubTotal</b>		
2	<b>Camisetas</b>					
3	<b>Pantalones</b>					<b>Formato</b>
4	<b>Zapatos</b>					
5	<b>Chaquetas</b>					
6			Sumatoria			
7			IGIC (7%)			
8			<b>TOTAL</b>			
9						

Haremos lo mismo con el resto de los Controles y luego los probamos, sin olvidar meter previamente los **Precios Unitarios** y las **Cantidades** y teniendo presente que **algunas Macros tienen Referencias Relativas o necesitan de una Selección Previa** para que funcione el **Botón de Formulario**.

	A	B	C	D	E	F	G
1		<b>Precio Unitario</b>	<b>Cantidad</b>	<b>SubTotal</b>			
2	<b>Camisetas</b>	15,99 €	4,00	63,96 €		<b>Formato</b>	
3	<b>Pantalones</b>	25,95 €	3,00	77,85 €		<b>SubTotal</b>	
4	<b>Zapatos</b>	85,75 €	2,00	171,50 €		<b>Sumatoria</b>	
5	<b>Chaquetas</b>	178,25 €	1,00	178,25 €		<b>Impuesto</b>	
6			Sumatoria	491,56 €		<b>Total</b>	
7			IGIC (7%)	34,41 €			
8			<b>TOTAL</b>	525,97 €			
9						<b>AutoAjustarFilaColumna</b>	
10							
11						<b>DarColor</b>	
12							

## 02.- EJERCICIOS CON CELDAS\RANGOS

### *Solución 02.01*

Vamos con el Código VBA Excel de Cada Botón. He usado varias formas de hacer referencias a Rangos de Celdas.

*Sub CrearArticulos()*

*'Varias maneras de referirme a una Celda*

```
Application.ThisWorkbook.ActiveSheet.Range("A2").Value = "Camisetas"
Application.Workbooks("EJERCICIO0201.
sm").Worksheets("Hoja1").Range("A3").Value = "Pantalones"
Application.Workbooks("EJERCICIO0201.xlsm").Sheets("Hoja1").Cells(4, "A").Value =
"Zapatos"
Application.Workbooks("EJERCICIO0201.xlsm").Sheets("Hoja1").Cells(5, 1).Value =
"Chaquetas"
```

*'Varias maneras de Seleccionar un Rango y Aplicar Formato*

```
Application.ThisWorkbook.ActiveSheet.Range("A2:A5").Select
Selection.Font.Bold = True 'Aplicar Negrita
Selection.Font.Name = "Tahoma" 'Aplicar Fuente Tahoma
```

```
Selection.HorizontalAlignment = xlHAlignLeft 'Alineación Horizontal a la Izquierda
Selection.HorizontalAlignment = -4131 'Alineación Horizontal a la Izquierda
```

```
Selection.VerticalAlignment = xlVAlignCenter 'Alineación Vertical al Centro
Selection.VerticalAlignment = -4108 'Alineación Vertical al Centro
```

```
Application.Workbooks("EJERCICIO0201.xlsm").Sheets("Hoja1").Range(Cells(2, 1),
Cells(5, "A")).Font.Size = 12 'Aplicar Tamaño de Fuente 12
```

*End Sub*

*Sub CrearEncabezados()*

*'Varias maneras de referirme a una Celda*

```
Application.ThisWorkbook.ActiveSheet.Range("B1").Value = "Precio Unitario"
Application.Workbooks("EJERCICIO0201.xlsm").Worksheets("Hoja1").Range("C1").Value
= "Cantidad"
Application.Workbooks("EJERCICIO0201.xlsm").Sheets("Hoja1").Cells(1, "D").Value =
"SubTotal"
```

*'Varias maneras de Seleccionar un Rango y Aplicar Formato*

```
Application.Workbooks("EJERCICIO0201.xlsm").Sheets("Hoja1").Range("B1:D1").Select
Selection.Font.Bold = True 'Aplicar Negrita
Selection.Font.Name = "Tahoma" 'Aplicar Fuente Tahoma
```

```
Selection.HorizontalAlignment = xlHAlignCenter 'Alineación Horizontal al Centro
Selection.HorizontalAlignment = -4108 'Alineación Horizontal al Centro
```

```
Selection.VerticalAlignment = xlVAlignCenter 'Alineación Vertical al Centro
Selection.VerticalAlignment = -4108 'Alineación Vertical al Centro
```

```
Application.Workbooks("EJERCICIO0201.xlsm").Sheets("Hoja1").Range(Cells(1, 2),  
Cells(1, "D")).Font.Size = 12 'Aplicar Tamaño de Fuente 12
```

```
End Sub
```

```
Sub CrearTotal()
```

```
'Varias maneras de referirme a una Celda
```

```
Application.ThisWorkbook.ActiveSheet.Range("C6").Value = "Sumatoria"
```

```
Application.Workbooks("EJERCICIO0201.xlsm").Worksheets("Hoja1").Range("C7").Value  
= "IGIC (7%)"
```

```
Application.Workbooks("EJERCICIO0201.xlsm").Sheets("Hoja1").Cells(8, "C").Value =  
"TOTAL"
```

```
'Varias maneras de Seleccionar un Rango y Aplicar Formato
```

```
Application.Workbooks("EJERCICIO0201.xlsm").Sheets("Hoja1").Range("C6:D8").Select  
Selection.Font.Size = 12
```

```
Selection.HorizontalAlignment = xlHAlignRight 'Alineación Horizontal a la Derecha
```

```
Selection.HorizontalAlignment = -4152 'Alineación Horizontal a la Derecha
```

```
Application.Workbooks("EJERCICIO0201.xlsm").Sheets("Hoja1").Range("C8:D8").Select  
Selection.Font.Bold = True 'Aplicar Negrita
```

```
End Sub
```

```
Sub CrearFormatoNumerico()
```

```
Application.ThisWorkbook.ActiveSheet.Range("B2:B5").Select
```

```
Selection.NumberFormat = "#,##0.00 €" 'Aplicar Formato Numérico Moneda Euro con  
2 Decimales
```

```
Application.Workbooks("EJERCICIO0201.xlsm").Worksheets("Hoja1").Range("C2:C5").N  
umberFormat = "#,##0.00" 'Aplicar Formato Numérico con 2 Decimales
```

```
Application.Workbooks("EJERCICIO0201.xlsm").Sheets("Hoja1").Range(Cells(2, 4),  
Cells(8, "D")).NumberFormat = "#,##0.00 €" 'Aplicar Formato Numérico Moneda Euro  
con 2 Decimales
```

```
Application.Workbooks("EJERCICIO0201.xlsm").Sheets("Hoja1").Range("B2:D5").Select  
Selection.Font.Name = "Tahoma" 'Aplicar Fuente Tahoma
```

```
Selection.Font.Size = 10
```

```
End Sub
```

```
Sub EjecutarCalculos()
```

```
Application.ThisWorkbook.ActiveSheet.Range("D2").Value = Range("B2").Value *  
Range("C2").Value
```

```
Application.Workbooks("EJERCICIO0201.xlsm").Worksheets("Hoja1").Range("D3").Value
= Range("B3").Value * Range("C3").Value
```

```
Application.Workbooks("EJERCICIO0201.xlsm").Sheets("Hoja1").Cells(4, "D").Value =
Cells(4, "B").Value * Cells(4, "C").Value
```

```
Application.Workbooks("EJERCICIO0201.xlsm").Sheets("Hoja1").Cells(5, 4).Value =
Cells(5, 2).Value * Cells(5, 3).Value
```

```
Application.ThisWorkbook.ActiveSheet.Range("D6").Value = Range("D2").Value +
Range("D3").Value + Range("D4").Value + Range("D5").Value
```

```
Application.Workbooks("EJERCICIO0201.xlsm").Worksheets("Hoja1").Range("D7").Value
= Range("D6").Value * 7 / 100
```

```
Application.Workbooks("EJERCICIO0201.xlsm").Sheets("Hoja1").Cells(8, "D").Value =
Cells(6, "D").Value + Cells(7, "D").Value
```

*End Sub*

Sub **DarColorAjustesFilasColumnas** contiene el Código VBA Excel del **Sub Formato** del **Ejercicio 01.01.**, el de **Sub DarColor** del **Ejercicio 01.04.** y el de **Sub AutoAjustarFilaColumna** del **Ejercicio 01.03.** Te escribo debajo el Código VBA Excel de estos 2 últimos porque el de **Sub Formato** es muy largo.

*Sub Darcolor()*

,

*' DarColor Macro*

*' Macro Creada por Luis Gimón*

,

*' Acceso directo: Ctrl+Mayús+C*

,

```
Range("B1:D1,A2:A5").Select
```

```
Range("A2").Activate
```

```
With Selection.Interior
```

```
.Pattern = xlSolid
```

```
.PatternColorIndex = xlAutomatic
```

```
.ThemeColor = xlThemeColorAccent2
```

```
.TintAndShade = 0.799981688894314
```

```
.PatternTintAndShade = 0
```

```
End With
```

```
Range("B2:D5").Select
```

```
With Selection.Interior
```

```
.Pattern = xlSolid
```

```
.PatternColorIndex = xlAutomatic
```

```
.ThemeColor = xlThemeColorAccent4
```

```
.TintAndShade = 0.799981688894314
```

```
.PatternTintAndShade = 0
```

```
End With
```

```
Range("D6:D8").Select
```

```
With Selection.Interior
```

```
.Pattern = xlSolid
```

```
.PatternColorIndex = xlAutomatic
```

```
.ThemeColor = xlThemeColorAccent5
```

```
.TintAndShade = 0.599993896298105
```

```
.PatternTintAndShade = 0
```

```
End With
```

*End Sub*

*Sub AutoAjustarFilaColumna()*

*'*

*' AutoAjustarFilaColumna Macro*

*' Macro Creada por Luis Gimón*

*'*

*Application.ThisWorkbook.ActiveSheet.Range("A1:D8").Select*

*Selection.Rows.AutoFit*

*Selection.Columns.AutoFit*

*Application.ThisWorkbook.ActiveSheet.Range("A1").Select*

*End Sub*

Finalmente, te adjunto el Código VBA Excel que **Limpia las Cantidades** y los **Resultados**.

*Sub Limpiar()*

*Application.ThisWorkbook.ActiveSheet.Range("C2:C5,D2:D8").Select*

*Selection.ClearContents*

*Application.ThisWorkbook.ActiveSheet.Range("A1").Activate*

*End Sub*

***Solución 02.02***

Debajo te adjunto el Código VBA Excel de Cada **Botón de Formulario**.

***Sub Derecha()***

***Application.ActiveCell.Offset(0, 1).Select***

***End Sub***

***Sub Izquierda()***

***Application.ActiveCell.Offset(0, -1).Select***

***End Sub***

***Sub Subir()***

***Application.ActiveCell.Offset(-1, 0).Select***

***End Sub***

***Sub Bajar()***

***Application.ActiveCell.Offset(1, 0).Select***

***End Sub***

***Sub Origen()***

***Application.ThisWorkbook.ActiveSheet.[A1].Activate***

***End Sub***

***Sub Escribir()***

***Application.ActiveCell.Font.Name = "Tahoma"***

***Application.ActiveCell.Font.Bold = True***

***Application.ActiveCell.Font.Size = 16***

***Application.ActiveCell.Value = ActiveCell.Address***

***End Sub***

***Sub BorrarHoja()***

***Application.Cells.Clear***

***Origen***

***End Sub***

### **Solución 02.03**

Debajo te adjunto el Código VBA Excel de Cada Botón de Formulario.

#### **Sub SumatoriaColumna()**

```
Application.ActiveCell.ClearContents
Application.ActiveCell.Offset(-1, 0).Activate 'Sube una Celda y la Activa.
Application.ThisWorkbook.ActiveSheet.Range(ActiveCell.Address,
ActiveCell.End(xlUp)).Select 'Selecciona, desde la Celda Activa, hasta la Primera que
tenga Datos en la Columna (Hacia Arriba).
Application.ActiveCell.Offset(11, 0).Value = "=+SUM(" & Selection.Address & ")" 'Se
desplaza 11 Filas hacia Abajo y realiza la Suma del Rango Seleccionado.
Application.ActiveCell.Offset(11, 0).Activate 'Activa la Celda donde se realizó la Suma
Application.Selection.Font.Bold = True
```

**End Sub**

#### **Sub PromedioFila()**

```
Application.ActiveCell.ClearContents
Application.ActiveCell.Offset(0, -1).Activate 'Se desplaza una Celda hacia la
Izquierda y la Activa.
Application.ActiveCell.End(xlToLeft).Offset(0, 1).Activate 'Se desplaza hasta la
primera Columna que tenga Datos y avanza una Celda a la Derecha.
Application.ThisWorkbook.ActiveSheet.Range(ActiveCell.Address,
ActiveCell.End(xlToRight)).Select 'Selecciona, desde la Celda Activa, hasta la última
que tenga Datos en la Fila a la Derecha.
Application.ActiveCell.Offset(0, 10).Value = "=+AVERAGE(" & Selection.Address & ")"
'Se desplaza 11 Filas hacia abajo y realiza la Suma con el Rango Seleccionado.
Application.ActiveCell.Offset(0, 10).Activate 'Activa la Celda donde se realizó el
Promedio.
Application.Selection.Font.Bold = True
```

**End Sub**

#### **Sub Limpiar()**

```
Application.ThisWorkbook.ActiveSheet.Range("B12:K12,L2:L11").Select
Selection.ClearContents
Application.ThisWorkbook.ActiveSheet.Range("A1").Activate
```

**End Sub**

***Solución 02.04***

Debajo te adjunto el Código VBA Excel de Cada Botón de Formulario.

***Sub Derecha()***

***Application.ActiveCell.Offset(0, 1).Select***

***End Sub***

***Sub Izquierda()***

***Application.ActiveCell.Offset(0, -1).Select***

***End Sub***

***Sub Subir()***

***Application.ActiveCell.Offset(-1, 0).Select***

***End Sub***

***Sub Bajar()***

***Application.ActiveCell.Offset(1, 0).Select***

***End Sub***

***Sub Origen()***

***Application.ThisWorkbook.ActiveSheet.[A1].Activate***

***End Sub***

***Sub FilaAbajo()***

***Application.ThisWorkbook.Worksheets("Hoja1").Range(ActiveCell, ActiveCell.End(xlDown)).Select***

***End Sub***

***Sub FilaAriiba()***

***Application.ThisWorkbook.Worksheets("Hoja1").Range(ActiveCell, ActiveCell.End(xlUp)).Select***

***End Sub***

***Sub ColumnaDerecha()***

***Application.ThisWorkbook.ActiveSheet.Range(ActiveCell, ActiveCell.End(xlToRight)).Select***

***End Sub***

***Sub ColumnaIzquierda()***



## SOLUCIONES EJERCICIOS CURSO MACROS Y PROGRAMACION VBA EXCEL

```
Application.ThisWorkbook.ActiveSheet.Range(ActiveCell,  
ActiveCell.End(xlToLeft)).Select
```

```
End Sub
```

```
Sub TablaCompleta()
```

```
Application.ThisWorkbook.Sheets("Hoja1").Range(ActiveCell.Address).CurrentRegion.S  
elect
```

```
End Sub
```

### ***Solución 02.05***

Debajo te adjunto el Código VBA Excel de Cada Botón de Formulario.

#### ***Sub Bajar()***

```
Application.ThisWorkbook.ActiveSheet.Cells(Rows.Count,
Selection.Column).End(xlUp).Offset(1, 0).Activate
Selection.Font.Bold = True
Selection.Font.Name = "Tahoma"
Selection.Interior.Color = vbGreen
Selection.Value = "Macros"
Hoja1.Range("A1").Select
```

***End Sub***

#### ***Sub Derecha()***

```
Application.ThisWorkbook.ActiveSheet.Cells(Selection.Row,
Columns.Count).End(xlToLeft).Offset(0, 1).Activate
Selection.Font.Bold = True
Selection.Font.Name = "Tahoma"
Selection.Interior.Color = vbYellow
Selection.Value = "VBA"
Hoja1.Range("A1").Select
```

***End Sub***

#### ***Sub Copiar()***

```
Application.ThisWorkbook.Worksheets("Hoja1").Range("A1").CurrentRegion.Select
Selection.Copy Application.ThisWorkbook.Worksheets("Hoja1").Range("A20")
Hoja1.Range("A1").Select
```

***End Sub***

#### ***Sub CortarPegar()***

```
Application.ThisWorkbook.Worksheets("Hoja1").Range("A20").CurrentRegion.Select
Selection.Cut Application.ThisWorkbook.Worksheets("Hoja1").Range("O1")
Hoja1.Range("A1").Select
```

***End Sub***

#### ***Sub Eliminar()***

```
Application.ThisWorkbook.Worksheets("Hoja1").Range("O1").CurrentRegion.Select
Selection.Delete xlShiftUp
Hoja1.Range("A1").Select
```

***End Sub***

## SOLUCIONES EJERCICIOS CURSO MACROS Y PROGRAMACION VBA EXCEL

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	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
	Columna 01	Columna 02	Columna 03	Columna 04	Columna 05	Columna 06	Columna 07	Columna 08	Columna 09	Columna 10	Promedio					
1	Fila 01	001	002	003	004	005	006	007	008	009	010	5,50				
2	Fila 02	011	012	013	014	015	016	017	018	019	020	15,50	VBA			
3	Fila 03	021	022	023	024	025	026	027	028	029	030	25,50				
4	Fila 04	031	032	033	034	035	036	037	038	039	040	25,50				
5	Fila 05	041	042	043	044	045	046	047	048	049	050	45,50				
6	Fila 06	051	052	053	054	055	056	057	058	059	060	55,50				
7	Fila 07	061	062	063	064	065	066	067	068	069	070	65,50				
8	Fila 08	071	072	073	074	075	076	077	078	079	080	75,50				
9	Fila 09	081	082	083	084	085	086	087	088	089	090	85,50				
10	Fila 10	091	092	093	094	095	096	097	098	099	100	95,50				
11	Sumatoria	460	470	480	490	500	510	520	530	540	550					
12				Hacros												
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16																
17																
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20																
21		Columna 01	Columna 02	Columna 03	Columna 04	Columna 05	Columna 06	Columna 07	Columna 08	Columna 09	Columna 10	Promedio				
22	Fila 01	001	002	003	004	005	006	007	008	009	010	5,50				
23	Fila 02	011	012	013	014	015	016	017	018	019	020	15,50	VBA			
24	Fila 03	021	022	023	024	025	026	027	028	029	030	25,50				
25	Fila 04	031	032	033	034	035	036	037	038	039	040	25,50				
26	Fila 05	041	042	043	044	045	046	047	048	049	050	45,50				
27	Fila 06	051	052	053	054	055	056	057	058	059	060	55,50				
28	Fila 07	061	062	063	064	065	066	067	068	069	070	65,50				
29	Fila 08	071	072	073	074	075	076	077	078	079	080	75,50				
30	Fila 09	081	082	083	084	085	086	087	088	089	090	85,50				
31	Fila 10	091	092	093	094	095	096	097	098	099	100	95,50				
32	Sumatoria	460	470	480	490	500	510	520	530	540	550					
33				Hacros												
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	Columna 01	Columna 02	Columna 03	Columna 04	Columna 05	Columna 06	Columna 07	Columna 08	Columna 09	Columna 10	Columna 11	Columna 12	Columna 13	Columna 14	Columna 15	Columna 16	Columna 17	Columna 18	Columna 19	Columna 20	Columna 21	Columna 22	Columna 23	Columna 24	Columna 25	Columna 26	Columna 27	Columna 28	Columna 29	
1	Fila 01	001	002	003	004	005	006	007	008	009	010	011	012	013	014	015	016	017	018	019	020	021	022	023	024	025	026	027	028	029
2	Fila 02	011	012	013	014	015	016	017	018	019	020	021	022	023	024	025	026	027	028	029	030	031	032	033	034	035	036	037	038	039
3	Fila 03	021	022	023	024	025	026	027	028	029	030	031	032	033	034	035	036	037	038	039	040	041	042	043	044	045	046	047	048	049
4	Fila 04	031	032	033	034	035	036	037	038	039	040	041	042	043	044	045	046	047	048	049	050	051	052	053	054	055	056	057	058	059
5	Fila 05	041	042	043	044	045	046	047	048	049	050	051	052	053	054	055	056	057	058	059	060	061	062	063	064	065	066	067	068	069
6	Fila 06	051	052	053	054	055	056	057	058	059	060	061	062	063	064	065	066	067	068	069	070	071	072	073	074	075	076	077	078	079
7	Fila 07	061	062	063	064	065	066	067	068	069	070	071	072	073	074	075	076	077	078	079	080	081	082	083	084	085	086	087	088	089
8	Fila 08	071	072	073	074	075	076	077	078	079	080	081	082	083	084	085	086	087	088	089	090	091	092	093	094	095	096	097	098	099
9	Fila 09	081	082	083	084	085	086	087	088	089	090	091	092	093	094	095	096	097	098	099	100	101	102	103	104	105	106	107	108	109
10	Fila 10	091	092	093	094	095	096	097	098	099	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119
11	Sumatoria	460	470	480	490	500	510	520	530	540	550																			
12				Hacros																										
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### **03.- HOJAS\LIBROS DE TRABAJO**

#### ***Solución 03.01***

Debajo te adjunto el Código VBA Excel de Cada Botón de Formulario.

*Private Sub Workbook\_Open()*

*Application.ThisWorkbook.Worksheets(Hoja1.Name).Activate*

*Application.ThisWorkbook.ActiveSheet.Range("I2:I6, B7:H7").Value = ""*

*Application.ThisWorkbook.ActiveSheet.Range("A1").Activate*

*End Sub*

*Sub SumarSemanal()*

*Application.ThisWorkbook.Worksheets(Hoja1.Name).Activate*

*Application.ThisWorkbook.ActiveSheet.Range("I2:I6").Value = "" 'Es fundamental esta línea para que salga bien la Sumatoria*

*Application.ThisWorkbook.ActiveSheet.Range("A2").Offset(0, 1).Select*

*Application.ThisWorkbook.ActiveSheet.Range(ActiveCell.Address, ActiveCell.End(xlToRight)).Select*

*Application.ThisWorkbook.ActiveSheet.Range("I2").Value = "=+SUM(" & Selection.Address & ")"*

*Application.ThisWorkbook.ActiveSheet.Range("A3").Offset(0, 1).Select*

*Application.ThisWorkbook.ActiveSheet.Range(ActiveCell.Address, ActiveCell.End(xlToRight)).Select*

*Application.ThisWorkbook.ActiveSheet.Range("I3").Value = "=+SUM(" & Selection.Address & ")"*

*Application.ThisWorkbook.ActiveSheet.Range("A4").Offset(0, 1).Select*

*Application.ThisWorkbook.ActiveSheet.Range(ActiveCell.Address, ActiveCell.End(xlToRight)).Select*

*Application.ThisWorkbook.ActiveSheet.Range("I4").Value = "=+SUM(" & Selection.Address & ")"*

*Application.ThisWorkbook.ActiveSheet.Range("A5").Offset(0, 1).Select*

*Application.ThisWorkbook.ActiveSheet.Range(ActiveCell.Address, ActiveCell.End(xlToRight)).Select*

*Application.ThisWorkbook.ActiveSheet.Range("I5").Value = "=+SUM(" & Selection.Address & ")"*

*Application.ThisWorkbook.ActiveSheet.Range("A6").Offset(0, 1).Select*

*Application.ThisWorkbook.ActiveSheet.Range(ActiveCell.Address, ActiveCell.End(xlToRight)).Select*

*Application.ThisWorkbook.ActiveSheet.Range("I6").Value = "=+SUM(" & Selection.Address & ")"*

*Application.ThisWorkbook.ActiveSheet.Cells(1, 1).Activate*

*End Sub*

*Sub SumarDiario()*

*Application.ThisWorkbook.Worksheets(Hoja1.Name).Activate*

*Application.ThisWorkbook.ActiveSheet.Range("B7:H7").Value = "" 'Es fundamental esta línea para que salga bien la Sumatoria*

*Application.ThisWorkbook.ActiveSheet.Range("B1").Offset(1, 0).Select  
Application.ThisWorkbook.ActiveSheet.Range(ActiveCell.Address,  
ActiveCell.End(xlDown)).Select  
Application.ThisWorkbook.ActiveSheet.Range("B7").Value = "=+SUM(" &  
Selection.Address & ")"*

*Application.ThisWorkbook.ActiveSheet.Range("C1").Offset(1, 0).Select  
Application.ThisWorkbook.ActiveSheet.Range(ActiveCell.Address,  
ActiveCell.End(xlDown)).Select  
Application.ThisWorkbook.ActiveSheet.Range("C7").Value = "=+SUM(" &  
Selection.Address & ")"*

*Application.ThisWorkbook.ActiveSheet.Range("D1").Offset(1, 0).Select  
Application.ThisWorkbook.ActiveSheet.Range(ActiveCell.Address,  
ActiveCell.End(xlDown)).Select  
Application.ThisWorkbook.ActiveSheet.Range("D7").Value = "=+SUM(" &  
Selection.Address & ")"*

*Application.ThisWorkbook.ActiveSheet.Range("E1").Offset(1, 0).Select  
Application.ThisWorkbook.ActiveSheet.Range(ActiveCell.Address,  
ActiveCell.End(xlDown)).Select  
Application.ThisWorkbook.ActiveSheet.Range("E7").Value = "=+SUM(" &  
Selection.Address & ")"*

*Application.ThisWorkbook.ActiveSheet.Range("F1").Offset(1, 0).Select  
Application.ThisWorkbook.ActiveSheet.Range(ActiveCell.Address,  
ActiveCell.End(xlDown)).Select  
Application.ThisWorkbook.ActiveSheet.Range("F7").Value = "=+SUM(" &  
Selection.Address & ")"*

*Application.ThisWorkbook.ActiveSheet.Range("G1").Offset(1, 0).Select  
Application.ThisWorkbook.ActiveSheet.Range(ActiveCell.Address,  
ActiveCell.End(xlDown)).Select  
Application.ThisWorkbook.ActiveSheet.Range("G7").Value = "=+SUM(" &  
Selection.Address & ")"*

*Application.ThisWorkbook.ActiveSheet.Range("H1").Offset(1, 0).Select  
Application.ThisWorkbook.ActiveSheet.Range(ActiveCell.Address,  
ActiveCell.End(xlDown)).Select  
Application.ThisWorkbook.ActiveSheet.Range("H7").Value = "=+SUM(" &  
Selection.Address & ")"*

*Application.ThisWorkbook.ActiveSheet.Cells(1, 1).Activate*

*End Sub*

*Sub CambiarNombreHojas()*

*Application.ThisWorkbook.Worksheets(1).Select  
ActiveSheet.Name = "HojaDatos"*

*Application.ThisWorkbook.Sheets(2).Name = "GráficoDatos"*

*End Sub*

*Sub CrearHojaResultados()*

*Application.ThisWorkbook.Sheets.Add  
after:=Application.ThisWorkbook.Sheets(Sheets.Count)  
MsgBox "Se ha creado la Hoja de Cálculo " &  
Application.ThisWorkbook.Sheets(Sheets.Count).Name*

*Application.ThisWorkbook.Sheets(Sheets.Count).Name = "HojaResultados" &  
Application.ThisWorkbook.Sheets.Count*

*Application.ThisWorkbook.Worksheets(1).Activate*

*End Sub*

***Solución 03.02***

Debajo te adjunto el Código VBA Excel de los nuevos Botones de Formulario.

***Sub MoverAlFinal()***

***Application.ThisWorkbook.ActiveSheet.Move after:=Sheets(Sheets.Count)***

***End Sub***

***Sub MoverAlPrincipio()***

***Application.ThisWorkbook.ActiveSheet.Move before:=Sheets(1)***

***End Sub***

***Sub CopiarAlFinal()***

***Application.ThisWorkbook.ActiveSheet.Copy after:=Sheets(Sheets.Count)***

***Application.ThisWorkbook.Sheets(Sheets.Count).Name = "HojaResultados" &  
Application.ThisWorkbook.Sheets.Count***

***End Sub***

***Sub CopiarAlPrincipio()***

***Application.ThisWorkbook.ActiveSheet.Copy before:=Sheets(1)***

***Application.ThisWorkbook.Sheets(1).Name = "HojaResultados" &  
Application.ThisWorkbook.Sheets.Count***

***End Sub***

***Sub EliminarUltimaHoja()***

***Application.ThisWorkbook.Sheets(Sheets.Count).Delete***

***End Sub***

***Solución 03.03***

Debajo te adjunto el Código VBA Excel según el Objeto al que pertenece.

***ThisWorkbook.***

***Private Sub Workbook\_BeforeSave(ByVal SaveAsUI As Boolean, Cancel As Boolean)***

***MsgBox "Se va a proceder a Proteger el Libro de Trabajo"***

***Application.ThisWorkbook.Protect Password:="LUISGIMON"***

***End Sub***

Dentro del Módulo ***MODULO01.***

***Sub DesProtegerLibro()***

***MsgBox "Se va a proceder a DesProteger el Libro de Trabajo"***

***Application.ThisWorkbook.Unprotect Password:="LUISGIMON"***

***End Sub***



***Solución 03.04***

Debajo te adjunto el Código VBA Excel de los nuevos Botones de Formulario.

***Sub HojaMuyOculto()***

***Application.ThisWorkbook.ActiveSheet.Visible = xlSheetVeryHidden***

***Application.ThisWorkbook.Worksheets(1).Activate***

***End Sub***

***Sub HojaOculto()***

***Application.ThisWorkbook.ActiveSheet.Visible = xlSheetHidden***

***Application.ThisWorkbook.Worksheets(1).Activate***

***End Sub***

***Sub HojasVisibles()***

***Application.ThisWorkbook.Sheets(Sheets.Count).Activate 'Activa la Ultima Hoja***  
***Application.ThisWorkbook.ActiveSheet.Visible = xlSheetVisible***

***Application.ThisWorkbook.Sheets(Sheets.Count - 1).Activate 'Activa la Ultima Hoja***  
***Application.ThisWorkbook.ActiveSheet.Visible = xlSheetVisible***

***Application.ThisWorkbook.Worksheets(1).Activate***

***End Sub***

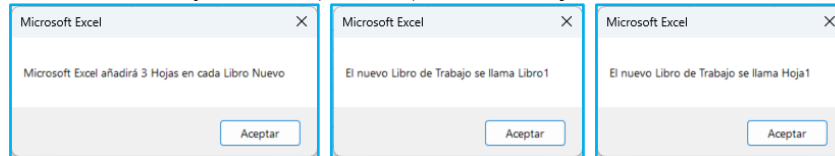
### ***Solución 03.05***

Recuerda que el orden de las acciones es el siguiente.

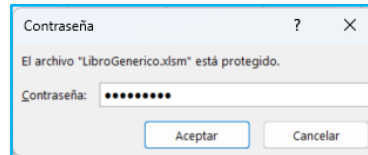
1. **Procedimiento CrearLibro()**
2. **Procedimiento GuardarTipoWorkbook**
3. **Procedimiento GuardarLibroGenerico**
4. **Click Botón de Formulario (Abrir Archivos)**

Tras ejecutar el **Procedimiento CrearLibro**:

- El **Libro Activo** es **Hoja1** (*Application.Workbooks.Add -4167*).
- El Libro Activo sólo tiene **1 Hoja en Blanco** (en este caso es **Tipo Worksheet**).
- El otro Libro de Trabajo creado (**Libro1**) tiene **3 Hojas en Blanco**.



El último paso es introducir la **Contraseña de Apertura de LibroGenerico.xlsm** que se convierte en el **Libro Activo** en ese momento.



#### 04.- TOMANDO DECISIONES

##### *Solución 04.01*

El Código VBA Excel es el siguiente. Se trata de un Código adecuado para programas sencillos y cortos.

**NOTA.** Si hay varias instrucciones tras el *If*, se podrán separar con : (**dos puntos**).

*Sub CalcularMedia()*

*Selection.Value = (Selection.Offset(0, -3).Value + Selection.Offset(0, -2).Value + Selection.Offset(0, -1).Value) / 3*

*If Selection.Value < 5 Then Beep: Selection.Interior.Color = vbRed*

*If Selection.Value = 5 Then Selection.Interior.Color = vbYellow*

*If Selection.Value > 5 Then Selection.Interior.Color = vbGreen*

*End Sub*

***Solución 04.02***

El Código VBA Excel es el siguiente.

***Sub CalcularMedia()***

***Selection.Value = (Selection.Offset(0, -3).Value + Selection.Offset(0, -2).Value + Selection.Offset(0, -1).Value) / 3***

***If Selection.Value < 5 Then Beep: Selection.Interior.Color = vbRed***

***If Selection.Value = 5 Then Selection.Interior.Color = vbYellow***

***If Selection.Value > 5 Then Selection.Interior.Color = vbGreen***

***End Sub***

***Sub ComprobarCeldaSeleccionada()***

***If Selection.Row >= 2 And Selection.Row <= (8 + 1) And Selection.Column = 5 Then***

***Call CalcularMedia***

***Else: MsgBox "Sólo puedes obtener la Media en la Columna Nota Media"***

***End If***

***End Sub***

### ***Solución 04.03***

El Código VBA Excel es el siguiente.

***Sub CalcularMedia()***

***Dim Numero\_Alumnado As Long, Calificacion As String, NotaMedia As String***

***Application.Worksheets(Hoja1.Name).Activate***  
***Numero\_Alumnado = Application.Range(Range("A2"),***  
***Range("A2").End(xlDown)).Count***

***NotaMedia = ""***

***If Selection.Row > 1 And Selection.Column = 5 Then***

***If Selection.Row > (Numero\_Alumnado + 1) Then***

***MsgBox "Sólo hay " & Numero\_Alumnado + 1 & " Alumnos"***

***ElseIf IsEmpty(Selection.Offset(0, -3)) Then***

***MsgBox "No puedes dejar en Blanco la Nota1 de " & Selection.Offset(0, -4).Value***

***ElseIf Not IsNumeric(Selection.Offset(0, -3)) Then***

***MsgBox "La Nota1 de " & Selection.Offset(0, -4).Value & " debe ser un Valor***  
***Númerico"***

***ElseIf Selection.Offset(0, -3) < 0 Or Selection.Offset(0, -3) > 10 Then***

***MsgBox "La Nota1 de " & Selection.Offset(0, -4).Value & " debe estar entre 0 y 10"***

***ElseIf IsEmpty(Selection.Offset(0, -2)) Then***

***MsgBox "No puedes dejar en Blanco la Nota2 de " & Selection.Offset(0, -4).Value***

***ElseIf Not IsNumeric(Selection.Offset(0, -2)) Then***

***MsgBox "La Nota2 de " & Selection.Offset(0, -4).Value & " debe ser un Valor***  
***Númerico"***

***ElseIf Selection.Offset(0, -2) < 0 Or Selection.Offset(0, -2) > 10 Then***

***MsgBox "La Nota2 de " & Selection.Offset(0, -4).Value & " debe estar entre 0 y 10"***

***ElseIf IsEmpty(Selection.Offset(0, -1)) Then***

***MsgBox "No puedes dejar en Blanco la Nota3 de " & Selection.Offset(0, -4).Value***

***ElseIf Not IsNumeric(Selection.Offset(0, -1)) Then***

***MsgBox "La Nota3 de " & Selection.Offset(0, -4).Value & " debe ser un Valor***  
***Númerico"***

***ElseIf Selection.Offset(0, -1) < 0 Or Selection.Offset(0, -1) > 10 Then***

***MsgBox "La Nota3 de " & Selection.Offset(0, -4).Value & " debe estar entre 0 y 10"***

***Else***

***Selection.Value = (Selection.Offset(0, -3).Value + Selection.Offset(0, -2).Value +***  
***Selection.Offset(0, -1).Value) / 3***

***NotaMedia = "OK"***

***End If***

***Else: MsgBox "Sólo puedes obtener la Media en la Columna Nota Media"***

***End If***

***If NotaMedia = "OK" Then***

***If Selection.Value < 5 Then***

***Beep***

***Selection.Interior.Color = vbRed***

***Calificacion = "INSUFICIENTE"***

***Selection.Offset(0, 1).Value = Calificacion***

***Selection.Offset(1, 0).Select***

***ElseIf Selection.Value >= 5 And Selection.Value < 6 Then Selection.Interior.Color =***  
***vbYellow: Calificacion = "SUFICIENTE": Selection.Offset(0, 1).Value = Calificacion:***  
***Selection.Offset(1, 0).Select***

***ElseIf Selection.Value >= 6 And Selection.Value < 7 Then Selection.Interior.Color =***  
***vbGreen: Calificacion = "BIEN": Selection.Offset(0, 1).Value = Calificacion:***  
***Selection.Offset(1, 0).Select***

```
    ElseIf Selection.Value >= 7 And Selection.Value <= 9 Then Selection.Interior.Color =  
vbCyan: Calificacion = "NOTABLE": Selection.Offset(0, 1).Value = Calificacion:  
Selection.Offset(1, 0).Select  
    Else: Selection.Interior.Color = vbMagenta: Calificacion = "SOBRESALIENTE":  
Selection.Offset(0, 1).Value = Calificacion: Selection.Offset(1, 0).Select  
    End If  
End If  
  
End Sub
```

### **Solución 04.04**

El Código VBA Excel es el siguiente. He incluido 2 Procedimientos (uno para cada Código). Para probarlo, hay que **cambiar la asignación de la Macro** sobre el Botón de Formulario (o bien, crear 2 Botones).

*Sub CalcularMedia()*

*Dim Numero\_Alumnado As Long, Calificacion As String, NotaMedia As String*

*Application.Worksheets(Hoja1.Name).Activate*

*Numero\_Alumnado = Application.Range(Range("A2"),  
Range("A2").End(xlDown)).Count*

*NotaMedia = ""*

*If Selection.Row > 1 And Selection.Column = 5 Then*

*If Selection.Row > (Numero\_Alumnado + 1) Then*

*MsgBox "Sólo hay " & Numero\_Alumnado + 1 & " Alumnos"*

*ElseIf IsEmpty(Selection.Offset(0, -3)) Then*

*MsgBox "No puedes dejar en Blanco la Nota1 de " & Selection.Offset(0, -4).Value*

*ElseIf Not IsNumeric(Selection.Offset(0, -3)) Then*

*MsgBox "La Nota1 de " & Selection.Offset(0, -4).Value & " debe ser un Valor  
Numérico"*

*ElseIf Selection.Offset(0, -3) < 0 Or Selection.Offset(0, -3) > 10 Then*

*MsgBox "La Nota1 de " & Selection.Offset(0, -4).Value & " debe estar entre 0 y 10"*

*ElseIf IsEmpty(Selection.Offset(0, -2)) Then*

*MsgBox "No puedes dejar en Blanco la Nota2 de " & Selection.Offset(0, -4).Value*

*ElseIf Not IsNumeric(Selection.Offset(0, -2)) Then*

*MsgBox "La Nota2 de " & Selection.Offset(0, -4).Value & " debe ser un Valor  
Numérico"*

*ElseIf Selection.Offset(0, -2) < 0 Or Selection.Offset(0, -2) > 10 Then*

*MsgBox "La Nota2 de " & Selection.Offset(0, -4).Value & " debe estar entre 0 y 10"*

*ElseIf IsEmpty(Selection.Offset(0, -1)) Then*

*MsgBox "No puedes dejar en Blanco la Nota3 de " & Selection.Offset(0, -4).Value*

*ElseIf Not IsNumeric(Selection.Offset(0, -1)) Then*

*MsgBox "La Nota3 de " & Selection.Offset(0, -4).Value & " debe ser un Valor  
Numérico"*

*ElseIf Selection.Offset(0, -1) < 0 Or Selection.Offset(0, -1) > 10 Then*

*MsgBox "La Nota3 de " & Selection.Offset(0, -4).Value & " debe estar entre 0 y 10"*

*Else*

*Selection.Value = (Selection.Offset(0, -3).Value + Selection.Offset(0, -2).Value +  
Selection.Offset(0, -1).Value) / 3*

*NotaMedia = "OK"*

*Select Case Selection.Value*

*Case 10: Selection.Offset(0, 1).Value = "MATRICULA DE HONOR"*

*Case 9 To 10: Selection.Offset(0, 1).Value = "SOBRESALIENTE"*

*Case Is >= 7: Selection.Offset(0, 1).Value = "NOTABLE"*

*Case Is >= 6: Selection.Offset(0, 1).Value = "BIEN"*

*Case Is >= 5: Selection.Offset(0, 1).Value = "APROBADO"*

*Case Is > 3: Selection.Offset(0, 1).Value = "INSUFICIENTE"*

*Case Else: Selection.Offset(0, 1).Value = "MUY DEFICIENTE"*

*End Select*

*Selection.Offset(1, 0).Select*

*End If*

*Else: MsgBox "Sólo puedes obtener la Media en la Columna Nota Media"*

*End If*

*End Sub*

*Sub CalcularMedia2()*

*Dim Numero\_Alumnado As Long, Calificacion As String, NotaMedia As String*

*Application.Worksheets(Hoja1.Name).Activate*

*Numero\_Alumnado = Application.Range(Range("A2"),  
Range("A2").End(xlDown)).Count*

*NotaMedia = ""*

*If Selection.Row > 1 And Selection.Column = 5 Then*

*If Selection.Row > (Numero\_Alumnado + 1) Then*

*MsgBox "Sólo hay " & Numero\_Alumnado + 1 & " Alumnos"*

*ElseIf IsEmpty(Selection.Offset(0, -3)) Then*

*MsgBox "No puedes dejar en Blanco la Nota1 de " & Selection.Offset(0, -4).Value*

*ElseIf Not IsNumeric(Selection.Offset(0, -3)) Then*

*MsgBox "La Nota1 de " & Selection.Offset(0, -4).Value & " debe ser un Valor  
Numérico"*

*ElseIf Selection.Offset(0, -3) < 0 Or Selection.Offset(0, -3) > 10 Then*

*MsgBox "La Nota1 de " & Selection.Offset(0, -4).Value & " debe estar entre 0 y 10"*

*ElseIf IsEmpty(Selection.Offset(0, -2)) Then*

*MsgBox "No puedes dejar en Blanco la Nota2 de " & Selection.Offset(0, -4).Value*

*ElseIf Not IsNumeric(Selection.Offset(0, -2)) Then*

*MsgBox "La Nota2 de " & Selection.Offset(0, -4).Value & " debe ser un Valor  
Numérico"*

*ElseIf Selection.Offset(0, -2) < 0 Or Selection.Offset(0, -2) > 10 Then*

*MsgBox "La Nota2 de " & Selection.Offset(0, -4).Value & " debe estar entre 0 y 10"*

*ElseIf IsEmpty(Selection.Offset(0, -1)) Then*

*MsgBox "No puedes dejar en Blanco la Nota3 de " & Selection.Offset(0, -4).Value*

*ElseIf Not IsNumeric(Selection.Offset(0, -1)) Then*

*MsgBox "La Nota3 de " & Selection.Offset(0, -4).Value & " debe ser un Valor  
Numérico"*

*ElseIf Selection.Offset(0, -1) < 0 Or Selection.Offset(0, -1) > 10 Then*

*MsgBox "La Nota3 de " & Selection.Offset(0, -4).Value & " debe estar entre 0 y 10"*

*Else*

*Selection.Value = (Selection.Offset(0, -3).Value + Selection.Offset(0, -2).Value +  
Selection.Offset(0, -1).Value) / 3*

*NotaMedia = "OK"*

*Select Case Selection.Value*

*Case 10*

*Selection.Offset(0, 1).Value = "MATRICULA DE HONOR"*

*Selection.Offset(0, 1).Interior.Color = vbMagenta*

*Case 9 To 10*

*Selection.Offset(0, 1).Value = "SOBRESALIENTE"*

*Selection.Offset(0, 1).Interior.Color = vbMagenta*

*Case Is >= 7*

*Selection.Offset(0, 1).Value = "NOTABLE"*

*Selection.Offset(0, 1).Interior.Color = vbCyan*

*Case Is >= 6*

*Selection.Offset(0, 1).Value = "BIEN"*

*Selection.Offset(0, 1).Interior.Color = vbGreen*

*Case Is >= 5*

*Selection.Offset(0, 1).Value = "APROBADO"*

*Selection.Offset(0, 1).Interior.Color = vbYellow*

*Case Is > 3*



```
Selection.Offset(0, 1).Value = "INSUFICIENTE"  
Selection.Offset(0, 1).Interior.Color = vbRed  
Case Else  
Selection.Offset(0, 1).Value = "MUY DEFICIENTE"  
Selection.Offset(0, 1).Interior.Color = vbRed  
End Select  
  
Selection.Offset(1, 0).Select  
End If  
Else: MsgBox "Sólo puedes obtener la Media en la Columna Nota Media"  
End If  
  
End Sub
```

### **Solución 04.05**

He elaborado la siguiente Tabla que recoge diferentes situaciones que se podrían dar, según las condiciones del enunciado.

CANTIDAD	PRECIO UNITARIO	CLIENTE	DTO ARTICULO	VENDER	DTO SUMATORIA
80	4,50 €	00	00	SI	NO
80	20,00 €	01	00	SI	SI
80	4,50 €	01	00	SI	SI
80	20,00 €	00	00	SI	NO
150	4,50 €	00	00	SI	NO
150	20,00 €	01	15	SI	SI
150	4,50 €	01	00	SI	SI
150	20,00 €	00	15	SI	NO
250	4,50 €	00	00	NO	NO
250	20,00 €	01	15	SI	SI
250	20,00 €	01	15	SI	SI
250	4,50 €	00	00	NO	NO

**NOTA.** El Cálculo del **SubTotal** se realiza seleccionando primero la Celda y pulsando el **Botón de Formulario** después, por cada Artículo. En cambio, **Total** se podrá pulsar en cualquier momento, pero siempre detrás del **Cálculo del SubTotal**. Aconsejo introducir el **Tipo de Cliente** antes de comenzar a operar. **AutoAjustar** es la última acción propuesta. Limpiar se emplea para **Borrar los Datos de Cantidad y SubTotal**.

**NOTA.** El programa no tiene **Control de Errores**.

*Sub SubTotal()*

*Dim PrecioUnitario As Double, Cantidad As Long*

*PrecioUnitario = Selection.Offset(0, -2).Value*

*Cantidad = Selection.Offset(0, -1).Value*

*If Cantidad <= 100 Then*

*Selection.Value = PrecioUnitario \* Cantidad*

*ElseIf Cantidad <= 200 And PrecioUnitario <= 5 Then*

*Selection.Value = PrecioUnitario \* Cantidad*

*ElseIf Cantidad <= 200 And Range("B12").Value = 1 Then*

*Selection.Value = PrecioUnitario \* 0.85 \* Cantidad*

*ElseIf Cantidad > 200 And Range("B12").Value = 0 Then*

*MsgBox "No es Cliente Registrado. Límite 199 Artículos"*

*ElseIf Cantidad > 200 And Range("B12").Value = 1 And PrecioUnitario <= 5 Then*

*Selection.Value = PrecioUnitario \* Cantidad*

*Else: Selection.Value = PrecioUnitario \* 0.85 \* Cantidad*

*End If*

*End Sub*

*Sub Total()*

*Range("D7").Value = Range("D2").Value + Range("D3").Value + Range("D4").Value + Range("D5").Value + Range("D6").Value*

*If Range("B12").Value = 1 Then*

```
Range("D8").Value = (Range("D2").Value + Range("D3").Value + Range("D4").Value  
+ Range("D5").Value + Range("D6").Value) * 0.95  
Range("D9").Value = Range("D8") * 7 / 100  
Range("D10").Value = Range("D8").Value + Range("D9").Value  
Else  
Range("D8").Value = Range("D2").Value + Range("D3").Value + Range("D4").Value +  
Range("D5").Value + Range("D6").Value  
Range("D9").Value = Range("D7") * 7 / 100  
Range("D10").Value = Range("D7").Value + Range("D9").Value  
End If
```

**End Sub**

**Sub AutoAjustarFilaColumna()**

```
Range("A1").CurrentRegion.Select  
Selection.Rows.AutoFit  
Selection.Columns.AutoFit
```

**End Sub**

**Sub Limpiar()**

```
Hoja1.Range("C2:C6, D2:D10").ClearContents
```

**End Sub**

## 05.- BUCLES

### *Solución 05.01*

A continuación, incluyo los Códigos de los diferentes Programas de los 3 Ejercicios del Bucle **For ... Next** propuestos, combinados con otras **Instrucciones** como **If ... Then ... ElseIf ... Else** o **Select Case**, además de **declarar Varias Variables**.

```
Sub SumaParesImpares100()
```

```
Dim i As Integer, SumatoriaPar As Integer, SumatoriaImpar As Integer, FilaPar As Integer, FilaImpar As Integer
```

```
Application.ThisWorkbook.Sheets(Hoja2.Name).Activate
```

```
FilaPar = 1
```

```
FilaImpar = 1
```

```
SumatoriaPar = 0
```

```
SumatoriaImpar = 0
```

```
Range("A1").Value = "PARES"
```

```
Range("B1").Value = "IMPARES"
```

```
For i = 1 To 100
```

```
    If i Mod 2 = 0 Then
```

```
        FilaPar = FilaPar + 1
```

```
        Cells(FilaPar, 1).Value = i
```

```
        SumatoriaPar = SumatoriaPar + i
```

```
    Else
```

```
        FilaImpar = FilaImpar + 1
```

```
        Cells(FilaImpar, 2).Value = i
```

```
        SumatoriaImpar = SumatoriaImpar + i
```

```
    End If
```

```
Next i
```

```
Cells(FilaPar + 1, 1).Value = SumatoriaPar
```

```
Cells(FilaImpar + 1, 2).Value = SumatoriaImpar
```

```
MsgBox "La Sumatoria de los Pares en [1, 100] es " & SumatoriaPar
```

```
MsgBox "La Sumatoria de los ImPares en [1, 100] es " & SumatoriaImpar
```

```
End Sub
```

```
Sub IndexColores()
```

```
Dim i As Integer, j As Integer, Indice As Integer
```

```
'Paleta de Colores ColorIndex (de 1 a 56)
```

```
Application.ThisWorkbook.Sheets(Hoja3.Name).Activate
```

```
Indice = 1
```

```
Range("A1").Value = "Muestra Color"
```

```
Range("B1").Value = "Indice Color"
```

```
Range("C1").Value = "Muestra Color"
```

```
Range("D1").Value = "Indice Color"
```

```
For i = 1 To 4 Step 2
```

```
    For j = 1 To 28
```

```

    If Indice = 57 Then
        Exit For
    End If
    Cells(j + 1, i).Interior.ColorIndex = Indice
    Cells(j + 1, i + 1) = Indice
    Indice = Indice + 1
Next j
Next i

End Sub

Sub GenerarNotas()
Dim i As Integer, j As Integer, Numero_Alumnado As Integer

    Numero_Alumnado = Application.Range(Range("A2"),
Range("A2").End(xlDown)).Count

    For i = 1 To Numero_Alumnado
        For j = 1 To 3
            Randomize
            Cells(i + 1, j + 1).Interior.Color = xlNone 'Ningún Color
            Cells(i + 1, j + 1).Value = Rnd * 11
            If Cells(i + 1, j + 1).Value > 10 Then
                Cells(i + 1, j + 1).Value = 10
                Cells(i + 1, j + 1).Interior.ColorIndex = 46
            End If
        Next j
    Next i

    CalcularMedia

End Sub

Sub CalcularMedia()
Dim Numero_Alumnado As Long, i As Long, j As Long, Error As Integer, Suma As Double

    Application.ThisWorkbook.Sheets(Hoja1.Name).Activate

    Numero_Alumnado = Application.Range(Range("A2"),
Range("A2").End(xlDown)).Count

    Error = 0

    For i = 1 To Numero_Alumnado
        For j = 1 To 3
            If IsEmpty(Cells(i + 1, j + 1).Value) Then
                MsgBox "No puedes dejar en Blanco la Nota" & j & " de " & Cells(i + 1, 1).Value
                Error = 1
                Exit For
            ElseIf Not IsNumeric(Cells(i + 1, j + 1).Value) Then
                MsgBox "La Nota" & j & " de " & Cells(i + 1, 1).Value & " debe ser un Valor Numérico"
                Error = 1
                Exit For
            ElseIf Cells(i + 1, j + 1).Value < 0 Or Cells(i + 1, j + 1).Value > 10 Then
                MsgBox "La Nota" & j & " de " & Cells(i + 1, 1).Value & " debe estar entre 0 y 10"
                Error = 1
                Exit For
            End If
        Next j
    Next i

```

```

    End If
Next j
If Error = 0 Then
    Cells(i + 1, 5).Value = 0
    For j = 1 To 3
        Cells(i + 1, 5).Value = Cells(i + 1, 5).Value + Cells(i + 1, j + 1).Value
    Next j
    Cells(i + 1, 5).Value = Cells(i + 1, 5).Value / 3
    Select Case Cells(i + 1, 5).Value
        Case 10
            Cells(i + 1, 6).Value = "MATRICULA DE HONOR"
            Cells(i + 1, 6).Interior.Color = vbMagenta
        Case 9 To 10
            Cells(i + 1, 6).Value = "SOBRESALIENTE"
            Cells(i + 1, 6).Interior.Color = vbMagenta
        Case Is >= 7
            Cells(i + 1, 6).Value = "NOTABLE"
            Cells(i + 1, 6).Interior.Color = vbCyan
        Case Is >= 6
            Cells(i + 1, 6).Value = "BIEN"
            Cells(i + 1, 6).Interior.Color = vbGreen
        Case Is >= 5
            Cells(i + 1, 6).Value = "APROBADO"
            Cells(i + 1, 6).Interior.Color = vbYellow
        Case Is > 3
            Cells(i + 1, 6).Value = "INSUFICIENTE"
            Cells(i + 1, 6).Interior.Color = vbRed
        Case Else
            Cells(i + 1, 6).Value = "MUY DEFICIENTE"
            Cells(i + 1, 6).Interior.Color = vbRed
    End Select
End If
Next i
End Sub

```

### ***Solución 05.02***

A continuación, incluyo los Códigos de los diferentes Programas de los 3 Ejercicios del Bucle ***For Each ... Next*** propuestos, combinados con otras **Instrucciones** como ***For ... Next, If ... Then ... ElseIf ... Else*** o ***Select Case***, además de **declarar Varias Variables**.

***Sub GenerarRango()***

***Dim Celda As Range, Filas As Integer, Columnas As Integer***

***Application.ThisWorkbook.Sheets(Hoja1.Name).Activate***

***Filas = 10***

***Columnas = 10***

***Range(Cells(1, 1), Cells(Filas, Columnas)).Select***

***For Each Celda In Selection***

***'Para generar enteros aleatorios en un intervalo dado, use esta fórmula:***

***'Int((upperbound - lowerbound + 1) \* Rnd + lowerbound)***

***'Aquí, upperbound (límite superior) es el número más alto del intervalo y lowerbound (límite inferior) es el número más bajo del intervalo.***

***Celda.Value = Int((100 - 0 + 1) \* Rnd + 0)***

***If Celda.Value Mod 2 = 0 Then***

***Celda.Interior.ColorIndex = 40***

***Else: Celda.Interior.ColorIndex = 17***

***End If***

***Next***

***Range(Cells(1, 1), Cells(10, 10)).Select***

***Selection.Rows.AutoFit***

***Selection.Columns.AutoFit***

***Range("A1").Select***

***End Sub***

***Sub GenerarRangoSelectCase()***

***Dim Celda As Range, Filas As Integer, Columnas As Integer, R As Long, G As Long, B As Long, i As Integer, Color As Long***

***Application.ThisWorkbook.Sheets(Hoja2.Name).Activate***

***Filas = 10***

***Columnas = 10***

***Range("A1").Value = "<=10"***

***Range("B1").Value = "<=20"***

***Range("C1").Value = "<=30"***

***Range("D1").Value = "<=40"***

***Range("E1").Value = "<=50"***

***Range("F1").Value = "<=60"***

***Range("G1").Value = "<=70"***

***Range("H1").Value = "<=80"***

***Range("I1").Value = "<=90"***

*Range("J1").Value = "<=100"*

*For i = 1 To 10*

*Randomize*

*R = Int((255 - 0 + 1) \* Rnd + 0)*

*G = Int((255 - 0 + 1) \* Rnd + 0)*

*B = Int((255 - 0 + 1) \* Rnd + 0)*

*Cells(2, i).Interior.Color = RGB(R, G, B)*

*Next i*

*Range(Cells(4, 1), Cells(Filas + 4, Columnas)).Select*

*For Each Celda In Selection*

*'Para generar enteros aleatorios en un intervalo dado, use esta fórmula:*

*'Int((upperbound - lowerbound + 1) \* Rnd + lowerbound)*

*'Aquí, upperbound (límite superior) es el número más alto del intervalo y lowerbound (límite inferior) es el número más bajo del intervalo.*

*Randomize*

*Celda.Value = Int((100 - 0 + 1) \* Rnd + 0)*

*Select Case Celda*

*Case Is <= 10*

*Color = Range("A2").Interior.Color*

*R = Color Mod 256*

*G = Color / 256 Mod 256*

*B = Color / 65536 Mod 256*

*Celda.Interior.Color = RGB(R, G, B)*

*Case Is <= 20*

*Color = Range("B2").Interior.Color*

*R = Color Mod 256*

*G = Color / 256 Mod 256*

*B = Color / 65536 Mod 256*

*Celda.Interior.Color = RGB(R, G, B)*

*Case Is <= 30*

*Color = Range("C2").Interior.Color*

*R = Color Mod 256*

*G = Color / 256 Mod 256*

*B = Color / 65536 Mod 256*

*Celda.Interior.Color = RGB(R, G, B)*

*Case Is <= 40*

*Color = Range("D2").Interior.Color*

*R = Color Mod 256*

*G = Color / 256 Mod 256*

*B = Color / 65536 Mod 256*

*Celda.Interior.Color = RGB(R, G, B)*

*Case Is <= 50*

*Color = Range("E2").Interior.Color*

*R = Color Mod 256*

*G = Color / 256 Mod 256*

*B = Color / 65536 Mod 256*

*Celda.Interior.Color = RGB(R, G, B)*

*Case Is <= 60*

*Color = Range("F2").Interior.Color*

*R = Color Mod 256*

*G = Color / 256 Mod 256*

*B = Color / 65536 Mod 256*



```

    Celda.Interior.Color = RGB(R, G, B)
Case Is <= 70
    Color = Range("G2").Interior.Color
    R = Color Mod 256
    G = Color / 256 Mod 256
    B = Color / 65536 Mod 256
    Celda.Interior.Color = RGB(R, G, B)
Case Is <= 80
    Color = Range("H2").Interior.Color
    R = Color Mod 256
    G = Color / 256 Mod 256
    B = Color / 65536 Mod 256
    Celda.Interior.Color = RGB(R, G, B)
Case Is <= 90
    Color = Range("I2").Interior.Color
    R = Color Mod 256
    G = Color / 256 Mod 256
    B = Color / 65536 Mod 256
    Celda.Interior.Color = RGB(R, G, B)
Case Else
    Color = Range("J2").Interior.Color
    R = Color Mod 256
    G = Color / 256 Mod 256
    B = Color / 65536 Mod 256
    Celda.Interior.Color = RGB(R, G, B)
End Select

Next

Range("A1").CurrentRegion.Select
Selection.Rows.AutoFit
Selection.Columns.AutoFit

Range("A1").Select

End Sub

Sub TablaMultiplicar()
Dim i As Integer, Fila As Integer, Columna As Integer, Celda As Range

Application.ThisWorkbook.Sheets(Hoja3.Name).Activate

Range("A2").Interior.Color = vbYellow

Fila = 1
Columna = 5

Range("A1").Value = "Tabla"

For i = 1 To 10
    Cells(i, 3).Value = Range("A2").Value
Next i

Range(Range("C1"), Range("C1").End(xlDown)).Select

For Each Celda In Selection
    Celda.Offset(0, 1).Value = "x"
    Celda.Offset(0, 2).Value = Fila

```

```
Celda.Offset(0, 3).Value = "="  
Celda.Offset(0, 4).Value = Celda.Value * Celda.Offset(0, 2).Value  
Fila = Fila + 1  
Next
```

```
Cells.Select  
Selection.Rows.AutoFit  
Selection.Columns.AutoFit
```

```
Range("A2").Select
```

```
End Sub
```

```
Sub Limpiar()
```

```
Range("C1:C10,E1:E10,G1:G10,A2").Select
```

```
Selection.ClearContents
```

```
Cells.Select  
Selection.Rows.AutoFit  
Selection.Columns.AutoFit
```

```
Range("A2").Select
```

```
End Sub
```

```
Sub Tabla1()
```

```
Range("A2").Value = 1  
TablaMultiplicar
```

```
End Sub
```

```
Sub Tabla2()
```

```
Range("A2").Value = 2  
TablaMultiplicar
```

```
End Sub
```

```
Sub Tabla3()
```

```
Range("A2").Value = 3  
TablaMultiplicar
```

```
End Sub
```

```
Sub Tabla4()
```

```
Range("A2").Value = 4  
TablaMultiplicar
```

```
End Sub
```

```
Sub Tabla5()
```

```
Range("A2").Value = 5  
TablaMultiplicar
```

*End Sub*

*Sub Tabla6()*

*Range("A2").Value = 6*  
*TablaMultiplicar*

*End Sub*

*Sub Tabla7()*

*Range("A2").Value = 7*  
*TablaMultiplicar*

*End Sub*

*Sub Tabla8()*

*Range("A2").Value = 8*  
*TablaMultiplicar*

*End Sub*

*Sub Tabla9()*

*Range("A2").Value = 9*  
*TablaMultiplicar*

*End Sub*

*Sub Tabla10()*

*Range("A2").Value = 10*  
*TablaMultiplicar*

*End Sub*

### ***Solución 05.03***

A continuación, incluyo los Códigos de los 2 Ejercicios de este apartado.

***Sub DoWhileLoop()***

***Dim i As Integer***

***Application.ThisWorkbook.Sheets(Hoja1.Name).Activate***

***i = 1***

***Range("A1").Value = "y = x^2 + 1"***

***Range("B1").Value = "X"***

***Range("C1").Value = "Y"***

***Do While i <= 10***

***Cells(i + 1, "B").Value = i***

***Cells(i + 1, "C").Value = Cells(i + 1, "B") ^ 2 + 1***

***i = i + 1***

***Loop***

***Range("A1").Select***

***End Sub***

***Sub DoUntilLoop()***

***Dim i As Integer***

***Application.ThisWorkbook.Sheets(Hoja1.Name).Activate***

***i = 1***

***Range("A1").Value = "y = x^2 + 1"***

***Range("B1").Value = "X"***

***Range("C1").Value = "Y"***

***Do Until i = 11***

***Cells(i + 1, "B").Value = i***

***Cells(i + 1, "C").Value = Cells(i + 1, "B") ^ 2 + 1***

***i = i + 1***

***Loop***

***Range("A1").Select***

***End Sub***

***Sub DoLoopWhile()***

***Dim i As Integer***

***Application.ThisWorkbook.Sheets(Hoja1.Name).Activate***

***i = 1***

***Range("A1").Value = "y = x^2 + 1"***

***Range("B1").Value = "X"***

***Range("C1").Value = "Y"***

***Do***

***Cells(i + 1, "B").Value = i***

***Cells(i + 1, "C").Value = Cells(i + 1, "B") ^ 2 + 1***

***i = i + 1***

```
Loop While i < 11

Range("A1").Select

End Sub

Sub DoLoopUntil()
Dim i As Integer

Application.ThisWorkbook.Sheets(Hoja1.Name).Activate

i = 1
Range("A1").Value = "y = x^2 + 1"
Range("B1").Value = "X"
Range("C1").Value = "Y"

Do
Cells(i + 1, "B").Value = i
Cells(i + 1, "C").Value = Cells(i + 1, "B") ^ 2 + 1
i = i + 1
Loop Until i = 11

Range("A1").Select

End Sub

Sub LimpiarDo()

Range("B2:C11").Select
Selection.ClearContents

Range("A1").Select

End Sub

Sub ColorParesImpares()
Dim Celda As Range, FilaPar As Integer, FilaImPar As Integer, i As Integer, Contador
As Integer, Valor As Integer

Application.ThisWorkbook.Sheets(Hoja2.Name).Activate

Range("A1").CurrentRegion.Select
Selection.ClearContents
Selection.Interior.Color = xlNone

Contador = 0
FilaPar = 1
FilaImPar = 1

While Contador < 25
Randomize
Valor = Int(Rnd * (100 + 1))
If Valor Mod 2 = 0 Then
Cells(FilaPar + 1, "A").Value = Valor
Cells(FilaPar + 1, "A").Interior.Color = vbGreen
FilaPar = FilaPar + 1
Else:
Cells(FilaImPar + 1, "B").Value = Valor
```

```
Cells(FilaImPar + 1, "B").Interior.Color = vbYellow
FilaImPar = FilaImPar + 1
End If
Contador = Contador + 1
Wend

Range("A1").Value = "Colorear Pares (" & (Range(Range("A2"),
Range("A2").End(xlDown)).Count - 1) & ")"
Range("B1").Value = "Colorear ImPares (" & Range(Range("B2"),
Range("B2").End(xlDown)).Count - 1 & ")"

Columns("A:B").Select
Selection.Columns.AutoFit

Range("A1").Select

End Sub
```

### ***Solución 05.04***

A continuación, incluyo el Código de este Ejercicio. Los **Procedimientos que no varían**, no los incluyo en la solución.

***Sub TablaMultiplicar()***

***Dim i As Integer, Fila As Integer***

***Application.ThisWorkbook.Sheets(Hoja1.Name).Activate***

***Range("A1").Value = "Tabla"***

***Range("A2").Interior.Color = vbYellow***

***Fila = 1***

***i = 1***

***Do While Fila <= 10***

***Cells(Fila, "C").Value = Range("A2").Value***

***Cells(Fila, "D").Value = "x"***

***Cells(Fila, "E").Value = Fila***

***Cells(Fila, "F").Value = "="***

***Cells(Fila, "G").Value = Cells(Fila, "C").Value \* Cells(Fila, "E").Value***

***Fila = Fila + 1***

***Loop***

***Cells.Select***

***Selection.Rows.AutoFit***

***Selection.Columns.AutoFit***

***Range("A2").Select***

***End Sub***

***Solución 05.05***

A continuación, incluyo el Código de este Ejercicio.

***Sub Temp01()***

***Dim Fila As Long, Temperatura As Double***

***Application.ThisWorkbook.Sheets(Hoja1.Name).Activate***

***Range("A1").EntireColumn.Select***

***Selection.ClearContents***

***Selection.Interior.Color = xlNone***

***Range("A1").Value = "Tabla de Temperaturas "***

***Fila = 1***

***Temperatura = 0***

***Cells(Fila + 1, "A").Value = Temperatura***

***Do While Temperatura <= 40***

***Randomize***

***Temperatura = (45 + 1) \* Rnd***

***If Temperatura >= 30 And Temperatura <= 35 Then***

***Cells(Fila + 2, "A").Interior.Color = vbGreen***

***Cells(Fila + 2, "A").Value = Temperatura***

***Exit Do***

***End If***

***If Temperatura > 40 Then***

***Cells(Fila + 2, "A").Interior.Color = vbYellow***

***Cells(Fila + 2, "A").Value = Temperatura***

***Else: Cells(Fila + 2, "A").Value = Temperatura***

***End If***

***Fila = Fila + 1***

***Loop***

***Range("A1").Select***

***End Sub***

***Sub Temp02()***

***Dim Fila As Long, Temperatura As Double***

***Application.ThisWorkbook.Sheets(Hoja1.Name).Activate***

***Range("A1").EntireColumn.Select***

***Selection.ClearContents***

***Selection.Interior.Color = xlNone***

***Range("A1").Value = "Tabla de Temperaturas "***

***Fila = 1***

***Temperatura = 0***

***Cells(Fila + 1, "A").Value = Temperatura***

***Do Until Temperatura > 40***

***Randomize***

***Temperatura = (45 + 1) \* Rnd***

***If Temperatura >= 30 And Temperatura <= 35 Then***



```
Cells(Fila + 2, "A").Interior.Color = vbGreen
Cells(Fila + 2, "A").Value = Temperatura
Exit Do
End If

If Temperatura > 40 Then
    Cells(Fila + 2, "A").Interior.Color = vbYellow
    Cells(Fila + 2, "A").Value = Temperatura
Else: Cells(Fila + 2, "A").Value = Temperatura
End If
Fila = Fila + 1
Loop

Range("A1").Select

End Sub

Sub Temp03()
Dim Fila As Long, Temperatura As Double

Application.ThisWorkbook.Sheets(Hoja1.Name).Activate

Range("A1").EntireColumn.Select
Selection.ClearContents
Selection.Interior.Color = xlNone

Range("A1").Value = "Tabla de Temperaturas " & ""

Fila = 1
Temperatura = 0
Cells(Fila + 1, "A").Value = Temperatura

Do
    Randomize
    Temperatura = (45 + 1) * Rnd
    If Temperatura >= 30 And Temperatura <= 35 Then
        Cells(Fila + 2, "A").Interior.Color = vbGreen
        Cells(Fila + 2, "A").Value = Temperatura
        Exit Do
    End If
    If Temperatura > 40 Then
        Cells(Fila + 2, "A").Interior.Color = vbYellow
        Cells(Fila + 2, "A").Value = Temperatura
    Else: Cells(Fila + 2, "A").Value = Temperatura
    End If
    Fila = Fila + 1
Loop While Temperatura <= 40

Range("A1").Select

End Sub

Sub Temp04()
Dim Fila As Long, Temperatura As Double

Application.ThisWorkbook.Sheets(Hoja1.Name).Activate

Range("A1").EntireColumn.Select
```

*Selection.ClearContents*

*Selection.Interior.Color = xlNone*

*Range("A1").Value = "Tabla de Temperaturas "*

*Fila = 1*

*Temperatura = 0*

*Cells(Fila + 1, "A").Value = Temperatura*

*Do*

*Randomize*

*Temperatura = (45 + 1) \* Rnd*

*If Temperatura >= 30 And Temperatura <= 35 Then*

*Cells(Fila + 2, "A").Interior.Color = vbGreen*

*Cells(Fila + 2, "A").Value = Temperatura*

*Exit Do*

*End If*

*If Temperatura > 40 Then*

*Cells(Fila + 2, "A").Interior.Color = vbYellow*

*Cells(Fila + 2, "A").Value = Temperatura*

*Exit Do*

*Else: Cells(Fila + 2, "A").Value = Temperatura*

*End If*

*Fila = Fila + 1*

*Loop Until Temperatura > 40*

*Range("A1").Select*

*End Sub*

## **06.- VARIABLES Y MATRICES**

### ***Solución 06.01***

A continuación, incluyo el Código asociado a este Ejercicio, dividido según cada Objeto.

#### **Módulo1**

*Public TextoProyecto As String*

*Sub Var01()*

*Dim Num01 As Double, Num02 As Double*

*Num01 = 25*

*Num02 = 32*

*MsgBox "La Suma de Num01 (" & Num01 & ") + Num02 (" & Num02 & ") en " & Application.ThisWorkbook.Name & " es = " & Num01 + Num02*

*End Sub*

*Sub Var02()*

*TextoProyecto = "Soy una Variable a Nivel de Proyecto"*

*MsgBox "Acabo de asignar Valor a la Variable TextoProyecto"*

*End Sub*

*Sub Var03()*

*MsgBox "El Valor de la Variable de Módulo es " & TextoModulo2*

*End Sub*

#### **Módulo2**

*Private TextoModulo2 As String*

*Sub Var01()*

*Static Num01 As Double*

*Num01 = Num01 + 1*

*MsgBox "El valor de Num01 es " & Num01*

*End Sub*

*Sub Var02()*

*TextoModulo2 = "Soy una Variable de Nivel de Módulo"*

*MsgBox "Acabo de asignar Valor a la Variable TextModulo2"*

*End Sub*

*Sub Var03()*

*MsgBox "El Valor de la Variable de Módulo es " & TextoModulo2*

*End Sub*

*Sub Var04()*

*Call Módulo1.Var02*

*MsgBox "El Valor de la Variable de Proyecto es " & TextoProyecto*

*End Sub*

### ***Solución 06.02***

A continuación, incluyo el Código asociado a este Ejercicio, dividido según cada Objeto.

#### **Módulo1**

***Private Const Resultado As String \* 9 = "SUMATORIA"***

***Sub ConstanteIGIC()***

***Dim Cantidad As Integer, Descuento As Integer, i As Integer***

***Application.ThisWorkbook.Sheets(Hoja1.Name).Activate***

***Range("A1").Value = "ARTICULO"***

***Range("B1").Value = "PVP"***

***Range("C1").Value = "CANTIDAD"***

***Range("D1").Value = "SUBTOTAL"***

***Range("E1").Value = "DTO(%)"***

***Range("F1").Value = "DESCUENTO"***

***Range("G1").Value = "NETO"***

***Range("H1").Value = "IGIC(" & IGIC & "%)"***

***Range("I1").Value = "TOTAL"***

***For i = 2 To 11***

***With Cells(i, "A")***

***.Value = "ARTICULO" & Format(i - 1, "00")***

***.Interior.Color = vbYellow***

***End With***

***Randomize***

***Cantidad = Int(Rnd \* (1000) + 1)***

***Descuento = Int(Rnd \* (50 + 1))***

***Cells(i, "B").Value = Rnd \* 10000 + 1***

***Cells(i, "C").Value = Cantidad***

***Cells(i, "D").Value = Cells(i, "B").Value \* Cells(i, "C").Value***

***Cells(i, "E").Value = Descuento***

***Cells(i, "F").Value = Cells(i, "D").Value \* Descuento / 100***

***Cells(i, "G").Value = Cells(i, "D").Value - Cells(i, "F").Value***

***Cells(i, "H").Value = Cells(i, "G").Value \* IGIC / 100***

***Cells(i, "I").Value = Cells(i, "G").Value + Cells(i, "H").Value***

***Next i***

***With Cells(i, "H")***

***.Value = Resultado***

***.Font.Bold = True***

***.Interior.Color = vbYellow***

***End With***

***With Cells(i, "I")***

***.FormulaR1C1 = "=+SUM(R[-10]C:R[-1]C)"***

***.Font.Bold = True***

***End With***

***Cells(i, "I").FormulaR1C1 = "=+SUM(R[-10]C:R[-1]C)"***

***Range("A1").CurrentRegion.Select***

```
Selection.Columns.AutoFit
Selection.Rows.AutoFit
```

```
Range("A1").Select
```

```
End Sub
```

```
Sub ConstanteIGIC2()
```

```
Dim Cantidad As Integer, Descuento As Integer, i As Integer
```

```
Application.ThisWorkbook.Sheets(Hoja1.Name).Activate
```

```
Range("A1").Value = "ARTICULO"
Range("B1").Value = "PVP"
Range("C1").Value = "CANTIDAD"
Range("D1").Value = "SUBTOTAL"
Range("E1").Value = "DTO(%)"
Range("F1").Value = "DESCUENTO"
Range("G1").Value = "NETO"
Range("H1").Value = "IGIC(" & IGIC & "%)"
Range("I1").Value = "TOTAL"
```

```
For i = 2 To 11
```

```
    With Cells(i, "A")
        .Value = "ARTICULO" & Format(i - 1, "00")
        .Interior.Color = vbYellow
    End With
```

```
    Randomize
```

```
    Cantidad = i - 1
```

```
    Descuento = 2 * (i - 1)
```

```
    Cells(i, "B").Value = (i - 1) * 10
    Cells(i, "C").Value = Cantidad
    Cells(i, "D").Value = Cells(i, "B").Value * Cells(i, "C").Value
    Cells(i, "E").Value = Descuento
    Cells(i, "F").Value = Cells(i, "D").Value * Descuento / 100
    Cells(i, "G").Value = Cells(i, "D").Value - Cells(i, "F").Value
    Cells(i, "H").Value = Cells(i, "G").Value * IGIC / 100
    Cells(i, "I").Value = Cells(i, "G").Value + Cells(i, "H").Value
```

```
Next i
```

```
With Cells(i, "H")
```

```
    .Value = Resultado
    .Font.Bold = True
    .Interior.Color = vbYellow
```

```
End With
```

```
With Cells(i, "I")
```

```
    .FormulaR1C1 = "=+SUM(R[-10]C:R[-1]C)"
    .Font.Bold = True
```

```
End With
```

```
Range("A1").CurrentRegion.Select
```

```
Selection.Columns.AutoFit
```

```
Selection.Rows.AutoFit
```

```
Range("A1").Select
```

*End Sub*

## **Módulo2**

*Public Const IGIC As Currency = 7*

***Solución 06.03***

A continuación, incluyo el Código asociado a este Ejercicio, dividido según cada Objeto.

**Módulo1**

*Option Explicit*

*Option Base 1*

*Sub TemasVBAVariables()*

*Dim i As Integer*

*Dim T1 As String, T2 As String, T3 As String, T4 As String, T5 As String*

*Dim T6 As String, T7 As String, T8 As String, T9 As String, T10 As String, T11 As String*

*Application.ThisWorkbook.Sheets(Hoja1.Name).Activate*

*T1 = "Objetos en VBA Excel"*

*T2 = "Eventos en VBA Excel"*

*T3 = "Propiedades Rangos de Celdas en VBA Excel"*

*T4 = "Colecciones WorkSheets en VBA Excel"*

*T5 = "Colecciones Sheets en VBA Excel"*

*T6 = "Colecciones WorkBooks en VBA Excel"*

*T7 = "Bucles en VBA Excel"*

*T8 = "Errores en VBA Excel"*

*T9 = "Variable en VBA Excel"*

*T10 = "Matrices en VBA Excel"*

*T11 = "Formularios en VBA Excel"*

*For i = 1 To 11*

*Cells(i + 1, 1) = i*

*Next i*

*Range("A1").Value = "CAPITULO"*

*Range("B1").Value = "TEMA"*

*Cells(2, 2) = T1*

*Cells(3, 2) = T2*

*Cells(4, 2) = T3*

*Cells(5, 2) = T4*

*Cells(6, 2) = T5*

*Cells(7, 2) = T6*

*Cells(8, 2) = T7*

*Cells(9, 2) = T8*

*Cells(10, 2) = T9*

*Cells(11, 2) = T10*

*Cells(12, 2) = T11*

*End Sub*

*Sub TemasVBAMatrices()*

*Dim i As Integer*

*Dim TemasVBA(1 To 11) As String*

*Application.ThisWorkbook.Sheets(Hoja1.Name).Activate*

*Range("A1").Value = "CAPITULO"*

*Range("B1").Value = "TEMA"*



```
TemasVBA(1) = "Objetos en VBA Excel"  
TemasVBA(2) = "Eventos en VBA Excel"  
TemasVBA(3) = "Propiedades Rangos de Celdas en VBA Excel"  
TemasVBA(4) = "Colecciones WorkSheets en VBA Excel"  
TemasVBA(5) = "Colecciones Sheets en VBA Excel"  
TemasVBA(6) = "Colecciones WorkBooks en VBA Excel"  
TemasVBA(7) = "Bucles en VBA Excel"  
TemasVBA(8) = "Errores en VBA Excel"  
TemasVBA(9) = "Variable en VBA Excel"  
TemasVBA(10) = "Matrices en VBA Excel"  
TemasVBA(11) = "Formularios en VBA Excel"
```

```
For i = 1 To 11  
    Cells(i + 1, 1) = i  
    Cells(i + 1, 2) = TemasVBA(i)  
Next i
```

*End Sub*

```
Sub TemasVBAMatrices2()  
Dim i As Integer  
Dim TemasVBA(11) As String
```

```
Application.ThisWorkbook.Sheets(Hoja1.Name).Activate
```

```
Range("A1").Value = "CAPITULO"  
Range("B1").Value = "TEMA"
```

```
TemasVBA(0) = "Objetos en VBA Excel"  
TemasVBA(1) = "Eventos en VBA Excel"  
TemasVBA(2) = "Propiedades Rangos de Celdas en VBA Excel"  
TemasVBA(3) = "Colecciones WorkSheets en VBA Excel"  
TemasVBA(4) = "Colecciones Sheets en VBA Excel"  
TemasVBA(5) = "Colecciones WorkBooks en VBA Excel"  
TemasVBA(6) = "Bucles en VBA Excel"  
TemasVBA(7) = "Errores en VBA Excel"  
TemasVBA(8) = "Variable en VBA Excel"  
TemasVBA(9) = "Matrices en VBA Excel"  
TemasVBA(10) = "Formularios en VBA Excel"
```

```
For i = 1 To 11  
    Cells(i + 1, 1) = i  
    Cells(i + 1, 2) = TemasVBA(i - 1)  
Next i
```

*End Sub*

## **Módulo2**

### **Option Explicit**

```
Sub Matriz2D3x5()  
Dim i As Integer, j As Integer, Rango As Range  
Dim M2D3x5(1 To 3, 1 To 5) As Double
```

```
Set Rango = Range(Cells(1, 1), Cells(3, 5))

Application.ThisWorkbook.Sheets(Hoja2.Name).Activate

For i = 1 To 3
    For j = 1 To 5
        M2D3x5(i, j) = Rnd * (100 + 1)
    Next j
Next i

Rango.Value = M2D3x5

End Sub

Sub MatrizIncrement10()
Dim i As Integer, j As Integer, Rango As Range
Dim M2D3x5(1 To 3, 1 To 5) As Double
Dim Matriz10(1 To 3, 1 To 5) As Double

Set Rango = Range(Cells(1, 1), Cells(3, 5))

Application.ThisWorkbook.Sheets(Hoja2.Name).Activate

For i = 1 To 3
    For j = 1 To 5
        M2D3x5(i, j) = Rnd * (100 + 1)
    Next j
Next i

Rango.Value = M2D3x5

For i = 1 To 3
    For j = 1 To 5
        Matriz10(i, j) = M2D3x5(i, j)
        Cells(i + 5, j).Value = Round(Matriz10(i, j) * 1.1, 3)
    Next j
Next i

End Sub
```

### **Módulo3**

#### **Option Explicit**

```
Sub LimiteMatrices()
Dim i As Integer, j As Integer
Dim MiMatriz1D(1 To 5) As Double
Dim MiMatriz2D(1 To 3, 1 To 5) As Double

Application.ThisWorkbook.Sheets(Hoja3.Name).Activate

Columns("A:F").Select
Selection.ClearContents

For i = LBound(MiMatriz1D) To UBound(MiMatriz1D)
    Randomize
```

```

    MiMatriz1D(i) = Rnd * (100 + 1)
Next i

Range("A1").Value = "MiMatriz1D"

Range("A3").Value = LBound(MiMatriz1D)
For i = LBound(MiMatriz1D) To UBound(MiMatriz1D)
    Cells(2, i + 1).Value = i
    Cells(3, i + 1).Value = Round(MiMatriz1D(i), 3)
Next i

Range("A3").Select
MsgBox "El Límite Inferior de MiMatriz1D es " & LBound(MiMatriz1D)

Range("B2:F2").Select
MsgBox "El Límite Superior de MiMatriz1D es " & UBound(MiMatriz1D)

For i = LBound(MiMatriz2D, 1) To UBound(MiMatriz2D, 1)
    For j = LBound(MiMatriz2D, 2) To UBound(MiMatriz2D, 2)
        Randomize
        MiMatriz2D(i, j) = Rnd * (100 + 1)
    Next j
Next i

Range("A5").Value = "MiMatriz2D"

For i = LBound(MiMatriz2D, 1) To UBound(MiMatriz2D, 1)
    Cells(i + 6, 1).Value = i
Next i

For j = LBound(MiMatriz2D, 2) To UBound(MiMatriz2D, 2)
    Cells(6, j + 1).Value = j
Next j

For i = LBound(MiMatriz2D, 1) To UBound(MiMatriz2D, 1)
    For j = LBound(MiMatriz2D, 2) To UBound(MiMatriz2D, 2)
        Cells(i + 6, j + 1) = Round(MiMatriz2D(i, j), 3)
    Next j
Next i

Range("A7:A9").Select
MsgBox "El Límite de Filas de MiMatriz2D es " & UBound(MiMatriz2D, 1)

Range("B6:F6").Select
MsgBox "El Límite de Columnas de MiMatriz2D es " & UBound(MiMatriz2D, 2)

Range("A1").Select

End Sub

```

## Módulo4

### Option Explicit

```

Sub MatrizTraspuesta()
Dim i As Integer, j As Integer
Dim MiMatriz2D(1 To 3, 1 To 5) As Double

```

```
Dim MiMatriz2DTraspuesta()  
Dim Rango As Range
```

```
Set Rango = Range("B9:D13")
```

```
Application.ThisWorkbook.Sheets(Hoja4.Name).Activate
```

```
Columns("A:F").Select  
Selection.ClearContents
```

```
Range("A1").Value = "MiMatriz2D"
```

```
For i = LBound(MiMatriz2D, 1) To UBound(MiMatriz2D, 1)  
    For j = LBound(MiMatriz2D, 2) To UBound(MiMatriz2D, 2)  
        Randomize  
        MiMatriz2D(i, j) = Rnd * (100 + 1)  
    Next j  
Next i
```

```
For i = LBound(MiMatriz2D, 1) To UBound(MiMatriz2D, 1)  
    Cells(i + 2, 1).Value = i  
Next i
```

```
For j = LBound(MiMatriz2D, 2) To UBound(MiMatriz2D, 2)  
    Cells(2, j + 1).Value = j  
Next j
```

```
For i = LBound(MiMatriz2D, 1) To UBound(MiMatriz2D, 1)  
    For j = LBound(MiMatriz2D, 2) To UBound(MiMatriz2D, 2)  
        Cells(i + 2, j + 1) = Round(MiMatriz2D(i, j), 3)  
    Next j  
Next i
```

```
Range("A7").Value = "MiMatriz2D Traspuesta"
```

```
For i = LBound(MiMatriz2D, 1) To UBound(MiMatriz2D, 1)  
    Cells(8, i + 1).Value = i  
Next i
```

```
For j = LBound(MiMatriz2D, 2) To UBound(MiMatriz2D, 2)  
    Cells(j + 8, 1).Value = j  
Next j
```

```
For i = LBound(MiMatriz2D, 1) To UBound(MiMatriz2D, 1)  
    For j = LBound(MiMatriz2D, 2) To UBound(MiMatriz2D, 2)  
        Cells(j + 8, i + 1) = Round(MiMatriz2D(i, j), 3)  
    Next j  
Next i
```

```
MiMatriz2DTraspuesta = Rango.Value
```

```
Columns("A:F").Select  
Selection.Columns.AutoFit
```

```
MsgBox "MiMatriz2DTraspuesta tiene un tamaño de " &  
UBound(MiMatriz2DTraspuesta, 1) & " x " & UBound(MiMatriz2DTraspuesta, 2)
```

```
Range("A1").Select
```

*End Sub*

### ***Solución 06.04***

A continuación, incluyo el Código asociado a este Ejercicio, dividido según cada Objeto.

#### **Módulo1**

##### ***Option Explicit***

***Sub MatrizDinamicaNoVariante()***

***Dim MiMatriz() As Integer***

***Dim limite As Integer, i As Integer***

***Application.ThisWorkbook.Sheets(Hoja1.Name).Activate***

***Columns("A:B").Select***

***Selection.ClearContents***

***limite = Int(Rnd \* 10 + 1)***

***ReDim MiMatriz(limite)***

***Range("B1").Value = "Matriz de " & limite & " Elementos"***

***For i = 0 To limite - 1***

***Randomize***

***MiMatriz(i) = Int(Rnd \* 100 + 1)***

***Cells(i + 1, 1).Value = MiMatriz(i)***

***Next i***

***Columns("A:B").Select***

***Selection.Columns.AutoFit***

***Selection.Rows.AutoFit***

***Range("A1").Select***

***End Sub***

***Sub MatrizDinamicaVariante()***

***Dim MiMatriz()***

***Dim i As Integer***

***Application.ThisWorkbook.Sheets(Hoja2.Name).Activate***

***Columns("A:H").Select***

***Selection.ClearContents***

***Range("A1").Value = "Mi nombre es "***

***Range("B1").Value = "Luis Gimón"***

***For i = 1 To 4***

***Randomize***

***Cells(2, i + 3).Value = Int(Rnd \* 100 + 1)***

***Next***

***MiMatriz = Array(Cells(2, "D").Value, Cells(2, "E").Value, Cells(2, "F").Value, Cells(2, "G").Value, Range("B1").Value)***

*Range("D3:H3") = MiMatriz*

*Columns("A:H").Select  
Selection.Columns.AutoFit  
Selection.Rows.AutoFit*

*Range("A1").Select*

*End Sub*

### ***Solución 06.05***

A continuación, incluyo el Código asociado a este Ejercicio, dividido según cada Objeto.

#### **Módulo1**

***Sub VolumenBidon()***

***Dim Pi As Double, Bidon(1 To 5, 1 To 3) As Double, i As Integer, j As Integer, Volumen As Double***

***Application.ThisWorkbook.Sheets(Hoja1.Name).Activate***

***Pi = 3.1416***

***Volumen = 0***

***Range("A1").Value = "Radio Base (cm)"***

***Range("B1").Value = "Altura (cm)"***

***Range("C1").Value = "Volumen (m3)"***

***For i = 2 To 6***

***Cells(i, 1).Value = Round(((2.5 - 0.5 + 1) \* Rnd + 0.5) \* 100, 3) 'Hasta 2,5m de Radio***

***Cells(i, 2).Value = Round(((10 - 0.5 + 1) \* Rnd + 0.5) \* 100, 3) 'Hasta 10m de Altura***

***Cells(i, 3).Value = Round(Pi \* (Cells(i, 1).Value / 100) ^ 2 \* Cells(i, 2).Value / 100, 3)***

***'Volumen en m3***

***Next i***

***Columns("A:C").Select***

***Selection.Rows.AutoFit***

***Selection.Columns.AutoFit***

***Range("A1").Select***

***For i = 1 To 5***

***For j = 1 To 3***

***Bidon(i, j) = Cells(i + 1, j).Value***

***Next j***

***Volumen = Volumen + Bidon(i, 3) 'Suma los Volúmenes de cada Bidón***

***Next i***

***Volumen = Volumen / 5***

***MsgBox "El Volumen Medio es " & Round(Volumen, 3)***

***End Sub***



## **07.- MSGBOX, INPUTBOX Y CONTROL DE ERRORES**

### ***Solución 07.01***

A continuación, incluyo el Código asociado a este Ejercicio, dividido según cada Objeto.

#### **Módulo1**

##### ***Option Explicit***

##### ***Sub SaludoInicial()***

***MsgBox "Un Saludo a los Usuarios de Macros de VBA Excel"***

***End Sub***

##### ***Private Sub SaludoInicialPersonalizado()***

***MsgBox "Un Saludo a los Usuarios de Macros de VBA Excel", , Range("A1").Value & "Manda ..."***

***End Sub***

##### ***Sub Combinacion1()***

***MsgBox "Un Saludo a los Usuarios de Macros de VBA Excel", 4 + 48, Range("A1").Value & "Manda ..."***

***End Sub***

##### ***Sub RellenoCeldaA1()***

***Dim Respuesta As Integer***

***Respuesta = MsgBox("¿Quieres rellenar de Color Amarillo la celda A1?", 4, "Rellenar de Color la Celda A1")***

***MsgBox "Valor de Respuesta = " & Respuesta***

***If Respuesta = 6 Then***

***With Range("A1")***

***.Interior.Color = vbYellow***

***.Value = "Relleno Amarillo"***

***End With***

***Else***

***With Range("A1")***

***.Interior.Color = xlNone***

***.Value = "Sin Color de Relleno"***

***End With***

***End If***

***Range("A1").Select***

***End Sub***

##### ***Sub ElegirBotonPulsado()***

***Dim Respuesta As Integer***

*Application.ThisWorkbook.Sheets(Hoja1.Name).Activate*

*Respuesta = MsgBox("Elige un Botón y verás que lo adivino", 3 + 48, "Gracias por participar")*

*Select Case Respuesta*

*Case 1:*

*MsgBox "Pulsaste el Botón Aceptar"*

*Case 2:*

*MsgBox "Pulsaste el Botón Cancelar"*

*Case 3:*

*MsgBox "Pulsaste el Botón Anular"*

*Case 4:*

*MsgBox "Pulsaste el Botón Reintentar"*

*Case 5:*

*MsgBox "Pulsaste el Botón Omitir"*

*Case 6:*

*MsgBox "Pulsaste el Botón Sí"*

*Case 7:*

*MsgBox "Pulsaste el Botón No"*

*End Select*

*End Sub*

***Solución 07.02***

A continuación, incluyo el Código asociado a este Ejercicio, dividido según cada Objeto.

**Módulo1*****Option Explicit******Sub PrecioArticulo()******Dim IGIC As Double, Cantidad As Double******Application.ThisWorkbook.Sheets(Hoja1.Name).Activate******IGIC = 7******Application.ThisWorkbook.Sheets(Hoja2.Name).Activate******Cantidad = InputBox("Introduzca el Precio", "Calculando Precio Artículos")******MsgBox "El IGIC asciende a " & Cantidad \* IGIC / 100 & " y el Precio Final es " & Cantidad \* 1.07, vbInformation, "Calculando Precio Final"******End Sub******Sub NombresEdad()******Dim i As Integer, Nombre As String, Edad As Integer, Datos(), rango As Range, Filas As Integer******Application.ThisWorkbook.Sheets(Hoja1.Name).Activate******Filas = Int(InputBox("¿Cuántos Registros vas a Introducir?"))******ReDim Datos(1 To Filas, 1 To 2)******Set rango = Range(Cells(5, 2), Cells(5 + Filas - 1, 3))******Range("B4").Value = "NOMBRE"******Range("C4").Value = "EDAD"******For i = 1 To Filas******Nombre = InputBox("Introduce el Nombre", "Nombre")******Edad = InputBox("Introduce la Edad", "Edad")******Datos(i, 1) = Nombre******Datos(i, 2) = Edad******Next i******rango = Datos******Columns("B:C").Select******Selection.Rows.AutoFit******Selection.Columns.AutoFit******Range("B5").Select******End Sub***

```
Sub Calculadora()  
Dim Numero As Double, Operador As String  
  
MsgBox "Recuerda que puedes operar con Números Decimales", vbInformation  
  
Numero = InputBox("Introduce un Número")  
Operador = InputBox("Introduce Operador (+, -, *, /)")  
  
While Operador <> ""  
  
Select Case Operador  
Case "+"  
Numero = Numero + InputBox("Introduce un Número")  
Case "-"  
Numero = Numero - InputBox("Introduce un Número")  
Case "*"  
Numero = Numero * InputBox("Introduce un Número")  
Case "/"  
Numero = Numero / InputBox("Introduce un Número")  
Case Else  
MsgBox ("Operador no Válido. Elige otro o déjalo vacío.")  
End Select  
  
Operador = InputBox("Introduce Operador")  
  
Wend  
  
MsgBox ("Resultado Final de la Expresión = " & Round(Numero, 2))  
  
End Sub
```

### ***Solución 07.03***

A continuación, incluyo el Código asociado a este Ejercicio, dividido según cada Objeto.

#### **Módulo1**

##### ***Option Explicit***

```
Const TypeFormula = 0
Const TypeNumber = 1
Const TypeString = 2
Const TypeBoolean = 4
Const TypeRange = 8
Const TypeError = 16
Const TypeArray = 64
Const Titulo = "Curso Macros VBA Excel por Luis Gimón"
```

```
Sub PulsadoCancelar()
    MsgBox "Has pulsado Cancelar"
End Sub
```

```
Sub Type0_formula()
Dim VarType0 As Variant
```

```
Application.ThisWorkbook.Sheets(Hoja1.Name).Activate
```

```
Cells.Select
Selection.ClearContents
```

```
Range("A1").CurrentRegion.Select
Selection.ClearContents
```

```
Range("A1").Value = 10
Range("A2").Value = 20
Range("B1").Value = 30
Range("B2").Value = 40
Range("C1").Value = "Luis"
Range("C2").Value = "Gimón"
Range("D1").Value = "Resultado"
```

```
VarType0 = Application.InputBox(prompt:="Introduce una Fórmula: ", Title:=Titulo,
Type:=TypeFormula)
```

```
If VarType0 = False Then 'Cuando se pulsa Cancelar
    PulsadoCancelar
Else:
    MsgBox "La Suma " & VarType0 & " la introduzco en D1"
    Range("D2").Value = VarType0
End If
```

```
Range("A1:D2").Select
ActiveWindow.Zoom = True 'Amplía la vista en pantalla
```

```
Range("A1").Select
```

```
End Sub
```

```
Sub Type1_number()
Dim VarType1 As Double
```

```
Application.ThisWorkbook.Sheets(Hoja1.Name).Activate
```

```
Cells.Select
Selection.ClearContents
```

```
Range("A1").Value = 10
Range("A2").Value = 20
Range("B1").Value = 30
Range("B2").Value = 40
Range("C1").Value = "Luis"
Range("C2").Value = "Gimón"
Range("D1").Value = "Resultado"
```

```
VarType1 = Application.InputBox(prompt:="Introduce un Número: ", Title:=Titulo,
Type:=TypeNumber)
```

```
If VarType1 = 0 Then
    PulsadoCancelar
Else:
    MsgBox "El Número introducido es " & VarType1
    Range("D2").Value = VarType1
End If
```

```
Range("A1:D2").Select
ActiveWindow.Zoom = True 'Amplía la vista en pantalla
```

```
Range("A1").Select
```

```
End Sub
```

```
Sub Type2_String()
Dim VarType2 As String
```

```
Application.ThisWorkbook.Sheets(Hoja1.Name).Activate
```

```
Cells.Select
Selection.ClearContents
```

```
Range("A1").Value = 10
Range("A2").Value = 20
Range("B1").Value = 30
Range("B2").Value = 40
Range("C1").Value = "Luis"
Range("C2").Value = "Gimón"
Range("D1").Value = "Resultado"
```

```
Range("A1").CurrentRegion.Select
```

```
VarType2 = Application.InputBox(prompt:="Introduce un Rango (p.e. A1:D2) para
Activarlo: ", Title:=Titulo, Default:=Selection.Address, Type:=TypeString)
```

```
If VarType2 = "Falso" Then
    PulsadoCancelar
ElseIf VarType2 = "" Then
    MsgBox "Has introducido el Valor Vacío"
```

```

Else
    Range("D2").Value = VarType2
    Application.ThisWorkbook.Sheets(Hoja1.Name).Range(VarType2).Select
    ActiveWindow.Zoom = True 'Amplía la vista en pantalla
    MsgBox "Este es el Rango que elegiste", vbInformation
End If

Range("A1").Select

End Sub

Sub Type4_Boolean()
Dim VarType4 As Boolean, Expresion As String

Application.ThisWorkbook.Sheets(Hoja1.Name).Activate

Cells.Select
Selection.ClearContents

Range("A1").Value = 10
Range("A2").Value = 20
Range("B1").Value = 30
Range("B2").Value = 40
Range("C1").Value = "Luis"
Range("C2").Value = "Gimón"
Range("D1").Value = "Expresión"
Range("E1").Value = "Resultado"

Expresion = InputBox("Introduce una Expresión Booleana", "Expresión Tipo Booleana")

Range("D2").Value = Expresion

VarType4 = Application.InputBox(prompt:="Introduce una Expresión Booleana: ",
Title:=Titulo, Default:=Expresion, Type:=TypeBoolean)

Range("E2").Value = VarType4

Application.ThisWorkbook.Sheets(Hoja1.Name).Range("A1").CurrentRegion.Select
Selection.Columns.AutoFit
ActiveWindow.Zoom = True 'Amplía la vista en pantalla

MsgBox "La Expresión " & Expresion & " es " & VarType4

Range("A1").Select

End Sub

Sub Type8_Range()
Dim VarType8 As Range

Application.ThisWorkbook.Sheets(Hoja2.Name).Activate

Cells.Select
Selection.ClearContents

Range("A1").Value = "Primer Valor"
Range("B1").Value = "Segundo Valor"

```

```
Range("C1").Value = "Tercer Valor"
Range("D1").Value = "Sumatoria"
```

*Randomize*

```
Range("A2").Value = Int(Rnd * 100 + 1)
Range("B2").Value = Int(Rnd * 100 + 1)
Range("C2").Value = Int(Rnd * 100 + 1)
```

```
Range("D2").Value = Range("A2").Value + Range("B2").Value + Range("C2").Value
```

```
Range("A3").Value = Int(Rnd * 100 + 1)
Range("B3").Value = Int(Rnd * 100 + 1)
Range("C3").Value = Int(Rnd * 100 + 1)
```

```
Range("D3").Value = Range("A3").Value + Range("B3").Value + Range("C3").Value
```

```
Range("A1").CurrentRegion.Select 'Rango que se usará por Defecto en el InputBox
```

*On Error Resume Next*

```
Set VarType8 = Application.InputBox(prompt:="Selecciona un Rango o Introduce un  
Rango: ", Default:=Selection.Address, Type:=TypeRange)
```

```
VarType8.Select
```

```
If VarType8 Is Nothing Then
    PulsadoCancelar
```

*Else:*

```
    Selection.Columns.AutoFit
    ActiveWindow.Zoom = True 'Amplía la vista en pantalla
    MsgBox "El Rango Seleccionado es " & VarType8.Address
End If
```

*End Sub*

```
Sub Type64_Array()
```

```
Dim VarType64 As Variant, i As Integer, j As Integer
```

```
Application.ThisWorkbook.Sheets(Hoja3.Name).Activate
```

```
Cells.Select
```

```
Selection.ClearContents
```

```
Range("A1").Value = "Primer Valor"
Range("B1").Value = "Segundo Valor"
Range("C1").Value = "Tercer Valor"
Range("D1").Value = "Sumatoria"
```

*Randomize*

```
Range("A2").Value = Int(Rnd * 100 + 1)
Range("B2").Value = Int(Rnd * 100 + 1)
Range("C2").Value = Int(Rnd * 100 + 1)
```

```
Range("D2").Value = Range("A2").Value + Range("B2").Value + Range("C2").Value
```

```
Range("A3").Value = Int(Rnd * 100 + 1)
```



```

Range("B3").Value = Int(Rnd * 100 + 1)
Range("C3").Value = Int(Rnd * 100 + 1)

Range("D3").Value = Range("A3").Value + Range("B3").Value + Range("C3").Value

Range("A1").CurrentRegion.Select 'Rango que se usará por Defecto en el InputBox

VarType64 = Application.InputBox(prompt:="Introduce\Selecciona un Rango: ",
Title:=Titulo, Default:=Selection.Address, Type:=TypeArray)

If VarType(VarType64) = 11 Then 'Indica que la Variable contiene un Valor
Booleano
    PulsadoCancelar
    Exit Sub
End If

'Bucle para trasponer la Matriz
For i = LBound(VarType64, 2) To UBound(VarType64, 2)
    For j = LBound(VarType64, 1) To UBound(VarType64, 1)
        Cells(UBound(VarType64, 1) + 1 + i, j).Value = VarType64(j, i)
    Next j
Next i

i = UBound(VarType64, 1) + UBound(VarType64, 2) + 1 'Filas
j = UBound(VarType64, 2) 'Columnas

Range(("A1"), Cells(i, j)).Select 'Seleccionar ambos rangos

Selection.Columns.AutoFit
ActiveWindow.Zoom = True 'Amplía la vista en pantalla

End Sub

```

### ***Solución 07.04***

A continuación, incluyo el Código asociado a este Ejercicio, dividido según cada Objeto.

#### **Módulo1**

##### ***Option Explicit***

##### ***Sub Dividirx0()***

***Dim Valor1 As Double, Valor2 As Double***

##### ***On Error GoTo ControlErrores***

***Valor1 = InputBox(prompt:="Introduce Numerador", Title:="Numerador")***

***Valor2 = InputBox(prompt:="Introduce Denominador", Title:="Denominador")***

***MsgBox "La División entre " & Valor1 & "/" & Valor2 & " = " & Valor1 / Valor2***

##### ***Exit Sub***

##### ***ControlErrores:***

***MsgBox "El Denominador no puede ser 0"***

##### ***End Sub***

##### ***Sub Dividirx0ResumeNext()***

***Dim Valor1 As Double, Valor2 As Double***

##### ***On Error Resume Next***

***Valor1 = InputBox(prompt:="Introduce Numerador", Title:="Numerador")***

***Valor2 = InputBox(prompt:="Introduce Denominador", Title:="Denominador")***

***MsgBox "La División entre " & Valor1 & "/" & Valor2 & " = " & Valor1 / Valor2***

##### ***End Sub***

##### ***Sub Dividir2Numeros()***

***Dim Valor1 As Double, Valor2 As Double***

##### ***On Error GoTo ControlErrores***

***Valor1 = InputBox(prompt:="Introduce Numerador", Title:="Numerador")***

***1 Valor2 = InputBox(prompt:="Introduce Denominador", Title:="Denominador")***

***Range("A1").Value = Valor1***

***Range("A2").Value = Valor2***

***Range("A3").Value = Valor1 / Valor2***

##### ***Exit Sub***

##### ***ControlErrores:***

***MsgBox "El Denominador no puede ser 0"***

***Resume 1***

*End Sub*

*Sub Dividirx0Err()*

*Dim Valor1 As Double, Valor2 As Double*

*On Error GoTo ControlErrores*

*Valor1 = InputBox(prompt:="Introduce Numerador", Title:="Numerador")*

*Valor2 = InputBox(prompt:="Introduce Denominador", Title:="Denominador")*

*MsgBox "La División entre " & Valor1 & "/" & Valor2 & " = " & Valor1 / Valor2*

*Exit Sub*

*ControlErrores:*

*MsgBox "El Código de Error Capturado es " & Err.Number & " (" & Err.Description & ") dentro de " & Err.Source*

*'Debug.Print "El Código de Error Capturado es " & Err.Number & " (" & Err.Description & ") dentro de " & Err.Source*

*End Sub*

*Sub ListadoErrores()*

*Dim i As Long, j As Long, MatrizError() As Variant*

*On Error Resume Next*

*j = 1*

*For i = 1 To 750*

*Err.Raise (i)*

*If Err.Description <> "Error definido por la aplicación o el objeto" Then*

*Cells(j, 1).Value = Err.Number*

*Cells(j, 2).Value = Err.Description*

*j = j + 1*

*End If*

*On Error GoTo -1*

*Next*

*Range("A1").CurrentRegion.Select*

*MatrizError = Range(Selection.Address)*

*MsgBox "El número de Errores es " & UBound(MatrizError, 1)*

*MsgBox "La posición 57 dentro de la Matriz es " & MatrizError(57, 2) & ""*

*End Sub*

***Solución 07.05***

A continuación, incluyo el Código asociado a este Ejercicio, dividido según cada Objeto..

**Módulo1**

***Option Explicit***

***Sub CeldasRellenar()***

***Dim Rango As Range, ColorInicial As Integer, ColorFinal As Integer***

***On Error GoTo ControlError***

***Application.ThisWorkbook.Sheets(Hoja1.Name).Cells.Interior.Color = xlNone***

***ColorInicial = 0***

***ColorFinal = 0***

***1 Range("A1:E10").Select***

***Randomize***

***Do***

***ColorInicial = Int(Rnd \* 56 + 1)***

***Loop Until ColorInicial <> 2 And ColorInicial <> ColorFinal***

***MsgBox "El Indice de ColorIndex es " & ColorInicial***

***ColorFinal = ColorInicial***

***Set Rango = Application.InputBox(prompt:="Selecciona el Rango de Celdas a rellenar de ColorIndex PseudoAleatorio", Title:="ColorIndex PseudoAleatorio", Default:=Selection.Address, Type:=8)***

***Rango.Interior.ColorIndex = ColorInicial***

***Exit Sub***

***ControlError:***

***MsgBox "El Error es el número " & Err.Number & " (" & Err.Description & ")"***

***Selection.Interior.ColorIndex = ColorInicial***

***Resume 1***

***End Sub***

## **08.- FUNCIONES DE EXCEL, INSERTAR FORMULAS Y UDF**

### ***Solución 08.01***

A continuación, incluyo el Código asociado a este Ejercicio, dividido según cada Objeto.

#### **Módulo1**

##### ***Option Explicit***

##### ***Sub FuncMin()***

***Dim Filas As Integer, Columnas As Integer, Rango As Range, Resultado As Integer, i As Integer, j As Integer***

***Application.ThisWorkbook.Sheets(Hoja1.Name).Activate***

##### ***With Cells***

***.ClearContents***

***.Interior.Color = xlNone***

***.Font.Bold = False***

***.Font.Size = 12***

##### ***End With***

***Filas = Application.InputBox(prompt:="Introduce Número de Filas", Title:="Cantidad de Filas", Type:=1)***

***Columnas = Application.InputBox(prompt:="Introduce Número de Columnas", Title:="Cantidad de Columnas", Type:=1)***

***If Filas = 0 Or Columnas = 0 Then***

***Randomize***

***Filas = Int(Rnd \* 15 + 1)***

***Columnas = Int(Rnd \* 15 + 1)***

***End If***

***For i = 1 To Filas***

***For j = 1 To Columnas***

***Randomize***

***Cells(i + 1, j + 1).Value = Int(Rnd \* 1000 + 1)***

***Next j***

***Next i***

***Range(Cells(2, 2), Cells(Filas + 1, Columnas + 1)).Select***

***ActiveWindow.Zoom = True***

***Set Rango = Selection***

***Resultado = Application.WorksheetFunction.Min(Rango)***

***For i = 1 To Filas***

***For j = 1 To Columnas***

***If Cells(i + 1, j + 1).Value = Resultado Then***

***With Cells(i + 1, j + 1)***

***.Interior.ColorIndex = 6***

***.Font.Bold = True***

***.Font.Size = 14***

***.Select***

***End With***

```
        Else: Cells(i + 1, j + 1).Interior.ColorIndex = 34
    End If
Next j
Next i

Range(Cells(1, 1), Cells(Filas + 1, Columnas + 1)).Select

With Selection
    .Columns.AutoFit
    .Rows.AutoFit
End With

ActiveWindow.Zoom = True

Cells(1, 1).Select

End Sub

Sub FuncMinMax()
    Dim Filas As Integer, Columnas As Integer, Rango As Range
    Dim ResultadoMax As Integer, ResultadoMin As Integer
    Dim i As Integer, j As Integer

    Application.ThisWorkbook.Sheets(Hoja2.Name).Activate

    With Cells
        .ClearContents
        .Interior.Color = xlNone
        .Font.Bold = False
        .Font.Size = 12
    End With

    Filas = Application.InputBox(prompt:="Introduce Número de Filas", Title:="Cantidad de Filas", Type:=1)
    Columnas = Application.InputBox(prompt:="Introduce Número de Columnas", Title:="Cantidad de Columnas", Type:=1)

    If Filas = 0 Or Columnas = 0 Then
        Randomize
        Filas = Int(Rnd * 15 + 1)
        Columnas = Int(Rnd * 15 + 1)
    End If

    For i = 1 To Filas
        For j = 1 To Columnas
            Randomize
            Cells(i + 1, j + 1).Value = Int(Rnd * 500 + 1)
        Next j
    Next i

    Range(Cells(2, 2), Cells(Filas + 1, Columnas + 1)).Select
    ActiveWindow.Zoom = True

    Set Rango = Selection

    ResultadoMin = Application.WorksheetFunction.Min(Rango)
    ResultadoMax = Application.WorksheetFunction.Max(Rango)
```

```
For i = 1 To Filas
  For j = 1 To Columnas
    If Cells(i + 1, j + 1).Value = ResultadoMin Then
      With Cells(i + 1, j + 1)
        .Interior.ColorIndex = 6
        .Font.Bold = True
        .Font.Size = 14
        .Select
      End With
    ElseIf Cells(i + 1, j + 1).Value = ResultadoMax Then
      With Cells(i + 1, j + 1)
        .Interior.ColorIndex = 43
        .Font.Bold = True
        .Font.Size = 14
        .Select
      End With
    Else: Cells(i + 1, j + 1).Interior.ColorIndex = 34
  End If
Next j
Next i

Range(Cells(1, 1), Cells(Filas + 1, Columnas + 1)).Select

With Selection
  .Columns.AutoFit
  .Rows.AutoFit
End With

ActiveWindow.Zoom = True

Cells(1, 1).Select

End Sub

Sub SumaRango()
  Dim Rango As Range, MiSuma As Double

  Application.ThisWorkbook.Sheets(Hoja3.Name).Activate

  Set Rango = Range("D2:D5")

  MiSuma = Application.WorksheetFunction.Sum(Rango)

  MsgBox "La Suma del Rango Seleccionado es " & MiSuma

End Sub
```

***Solución 08.02***

A continuación, incluyo el Código asociado a este Ejercicio, dividido según cada Objeto.

**Módulo1*****Option Explicit******Sub SumarColumnas()******Dim Filas As Integer, Columnas As Integer, Rango As Range, RangoSuma As Range******Dim ResultadoMax As Integer, ResultadoMin As Integer, ResultadoSuma As Integer******Dim i As Integer, j As Integer******Application.ThisWorkbook.Sheets(Hoja1.Name).Activate******With Cells******.ClearContents******.Interior.Color = xlNone******.Font.Bold = False******.Font.Size = 10******.NumberFormat = "#,##0"******End With******Filas = Application.InputBox(prompt:="Introduce Número de Filas", Title:="Cantidad de Filas", Type:=1)******Columnas = Application.InputBox(prompt:="Introduce Número de Columnas", Title:="Cantidad de Columnas", Type:=1)******If Filas = 0 Or Columnas = 0 Then******Randomize******Filas = Int(Rnd \* 15 + 1)******Columnas = Int(Rnd \* 15 + 1)******End If******For i = 1 To Filas******For j = 1 To Columnas******Randomize******Cells(i + 1, j + 1).Value = Int(Rnd \* 500 + 1)******Next j******Next i******Range(Cells(2, 2), Cells(Filas + 1, Columnas + 1)).Select******ActiveWindow.Zoom = True******Set Rango = Selection******ResultadoMin = Application.WorksheetFunction.Min(Rango)******ResultadoMax = Application.WorksheetFunction.Max(Rango)******For i = 1 To Filas******For j = 1 To Columnas******If Cells(i + 1, j + 1).Value = ResultadoMin Then******With Cells(i + 1, j + 1)******.Interior.ColorIndex = 6******.Font.Bold = True******.Font.Size = 12******.Select***



```
End With
ElseIf Cells(i + 1, j + 1).Value = ResultadoMax Then
    With Cells(i + 1, j + 1)
        .Interior.ColorIndex = 43
        .Font.Bold = True
        .Font.Size = 12
        .Select
    End With
Else: Cells(i + 1, j + 1).Interior.ColorIndex = 34
End If
Next j
Next i

For i = 2 To Columnas + 1
    With Cells(Filas + 2, i)
        .Font.Italic = True
        .Font.Bold = True
        .Font.Size = 12
        .Interior.Color = vbGreen
        .NumberFormat = "#,##0"
    End With
    Range(Cells(2, i), Cells(Filas + 1, i)).Select
    Set RangoSuma = Selection
    ResultadoSuma = Application.WorksheetFunction.Sum(RangoSuma)
    Cells(Filas + 2, i).Value = ResultadoSuma
Next i

Cells(Filas + 2, 1).Value = "Sumatoria"
Cells(Filas + 2, 1).Font.Bold = True

Range(Cells(1, 1), Cells(Filas + 2, Columnas + 1)).Select

With Selection
    .Columns.AutoFit
    .Rows.AutoFit
End With

ActiveWindow.Zoom = True

Cells(1, 1).Select

End Sub

Sub FuncVarias()
    Dim Filas As Integer, Columnas As Integer, Rango As Range, RangoSuma As Range
    Dim ResultadoMax As Integer, ResultadoMin As Integer, ResultadoSuma As Integer,
    ResultadoPromedio As Double
    Dim i As Integer, j As Integer

    Application.ThisWorkbook.Sheets(Hoja2.Name).Activate

    With Cells
        .ClearContents
        .Interior.Color = xlNone
        .Font.Bold = False
        .Font.Italic = False
        .Font.Size = 10
        .NumberFormat = "#,##0"
```

*End With*

*Filas = Application.InputBox(prompt:="Introduce Número de Filas", Title:="Cantidad de Filas", Type:=1)*

*Columnas = Application.InputBox(prompt:="Introduce Número de Columnas", Title:="Cantidad de Columnas", Type:=1)*

*If Filas = 0 Or Columnas = 0 Then*

*Randomize*

*Filas = Int(Rnd \* 15 + 1)*

*Columnas = Int(Rnd \* 15 + 1)*

*End If*

*For i = 1 To Filas*

*For j = 1 To Columnas*

*Randomize*

*Cells(i + 1, j + 1).Value = Int(Rnd \* 500 + 1)*

*Next j*

*Next i*

*Range(Cells(2, 2), Cells(Filas + 1, Columnas + 1)).Select*

*ActiveWindow.Zoom = True*

*Set Rango = Selection*

*ResultadoMin = Application.WorksheetFunction.Min(Rango)*

*ResultadoMax = Application.WorksheetFunction.Max(Rango)*

*For i = 1 To Filas*

*For j = 1 To Columnas*

*If Cells(i + 1, j + 1).Value = ResultadoMin Then*

*With Cells(i + 1, j + 1)*

*.Interior.ColorIndex = 6*

*.Font.Bold = True*

*.Font.Size = 14*

*.Select*

*End With*

*ElseIf Cells(i + 1, j + 1).Value = ResultadoMax Then*

*With Cells(i + 1, j + 1)*

*.Interior.ColorIndex = 43*

*.Font.Bold = True*

*.Font.Size = 14*

*.Select*

*End With*

*Else: Cells(i + 1, j + 1).Interior.ColorIndex = 34*

*End If*

*Next j*

*Next i*

*For i = 2 To Columnas + 1*

*With Range(Cells(Filas + 2, i), Cells(Filas + 4, i))*

*.Font.Italic = True*

*.Font.Bold = True*

*.Font.Size = 12*

*.Interior.Color = vbGreen*

*.NumberFormat = "#,##0"*

*End With*

*With Cells(Filas + 5, i)*

```

        .Font.Italic = True
        .Font.Bold = True
        .Font.Size = 12
        .Interior.Color = vbCyan
        .NumberFormat = "#,##0.000"
    End With
    Range(Cells(2, i), Cells(Filas + 1, i)).Select
    Set RangoSuma = Selection
    ResultadoSuma = Application.WorksheetFunction.Sum(RangoSuma)
    Cells(Filas + 2, i).Value = ResultadoSuma
    ResultadoMin = Application.WorksheetFunction.Min(RangoSuma)
    Cells(Filas + 3, i).Value = ResultadoMin
    ResultadoMax = Application.WorksheetFunction.Max(RangoSuma)
    Cells(Filas + 4, i).Value = ResultadoMax
    ResultadoPromedio = Application.WorksheetFunction.Average(RangoSuma)
    Cells(Filas + 5, i).Value = ResultadoPromedio

Next i

Cells(Filas + 2, 1).Value = "Sumatoria"
Cells(Filas + 3, 1).Value = "Mínimo"
Cells(Filas + 4, 1).Value = "Máximo"
Cells(Filas + 5, 1).Value = "Promedio"

Range(Cells(Filas + 2, 1), Cells(Filas + 5, 1)).Select

With Selection
    .HorizontalAlignment = xlRight
    .VerticalAlignment = xlCenter
    .Font.Bold = True
    .Font.Italic = True
End With

Range(Cells(1, 1), Cells(Filas + 5, Columnas + 1)).Select

With Selection
    .Columns.AutoFit
    .Rows.AutoFit
End With

ActiveWindow.Zoom = True

Cells(1, 1).Select

End Sub

```

***Solución 08.03***

A continuación, incluyo el Código asociado a este Ejercicio, dividido según cada Objeto..

***Módulo1******Option Explicit******Sub SumarCeldas()******Application.ThisWorkbook.Sheets(Hoja1.Name).Activate******Cells(1, 1).Value = "N1"******Cells(1, 2).Value = "N2"******Cells(1, 3).Value = "Suma"******Randomize******Cells(2, 1).Value = Application.Round((Rnd \* 10 + 1), 4)******Cells(2, 2).Value = Application.Round((Rnd \* 10 + 1), 4)******Cells(2, 3).Formula = "=A2+B2"******End Sub******Sub TruncarCeldas()******Application.ThisWorkbook.Sheets(Hoja2.Name).Activate******Cells(1, 1).Value = "N1"******Cells(1, 2).Value = "N2"******Cells(2, 4).Value = "Suma"******Cells(3, 4).Value = "Redondear"******Cells(4, 4).Value = "Truncar"******Range(Cells(2, 1), Cells(2, 3)).Select******With Selection******.NumberFormat = "#,##0.0000"******End With******Range(Cells(3, 3), Cells(4, 3)).Select******With Selection******.NumberFormat = "#,##0.00"******End With******Randomize******Cells(2, 1).Value = Application.Round((Rnd \* 10 + 1), 4)******Cells(2, 2).Value = Application.Round((Rnd \* 10 + 1), 4)******Cells(2, 3).FormulaLocal = "=redondear((A2+B2);4)"******Cells(3, 3).FormulaLocal = "=redondear((A2+B2);2)"******Cells(4, 3).FormulaLocal = "=Truncar((A2+B2);2)"******Range("A:D").Select******Selection.Columns.AutoFit******Selection.Rows.AutoFit***

*Range("A1").Select*

*End Sub*

## **Módulo2**

*Option Explicit*

*Sub TruncarCeldasR1C1Relativa()*

*Application.ThisWorkbook.Sheets(Hoja3.Name).Activate*

*Cells(1, 1).Value = "N1"*

*Cells(1, 2).Value = "N2"*

*Cells(2, 4).Value = "Suma"*

*Cells(3, 4).Value = "Redondear"*

*Cells(4, 4).Value = "Truncar"*

*Range(Cells(2, 1), Cells(2, 3)).Select*

*With Selection*

*.NumberFormat = "#,##0.0000"*

*End With*

*Range(Cells(3, 3), Cells(4, 3)).Select*

*With Selection*

*.NumberFormat = "#,##0.00"*

*End With*

*Randomize*

*Cells(2, 1).Value = Application.Round((Rnd \* 10 + 1), 4)*

*Cells(2, 2).Value = Application.Round((Rnd \* 10 + 1), 4)*

### **'Notación R1C1 Relativa**

*Cells(2, 3).Formula = "=Round((RC[-2]+RC[-1]),4)"*

*Cells(3, 3).Formula = "=Round((R[-1]C[-2]+R[-1]C[-1]),2)"*

*Cells(4, 3).Formula = "=Trunc((R[-2]C[-2]+R[-2]C[-1]),2)"*

*Range("A:D").Select*

*Selection.Columns.AutoFit*

*Selection.Rows.AutoFit*

*Range("A1").Select*

*End Sub*

*Sub TruncarCeldasF1C1Relativa()*

*Application.ThisWorkbook.Sheets(Hoja3.Name).Activate*

*Cells(1, 1).Value = "N1"*

*Cells(1, 2).Value = "N2"*

*Cells(2, 4).Value = "Suma"*

*Cells(3, 4).Value = "Redondear"*

*Cells(4, 4).Value = "Truncar"*

*Range(Cells(2, 1), Cells(2, 3)).Select*

*With Selection*

*.NumberFormat = "#,##0.0000"*

*End With*

*Range(Cells(3, 3), Cells(4, 3)).Select*

*With Selection*

*.NumberFormat = "#,##0.00"*

*End With*

*Randomize*

*Cells(2, 1).Value = Application.Round((Rnd \* 10 + 1), 4)*

*Cells(2, 2).Value = Application.Round((Rnd \* 10 + 1), 4)*

### *'Notación F1C1 Relativa*

*Cells(2, 3).FormulaLocal = "=redondear((FC[-2]+FC[-1]);4)"*

*Cells(3, 3).FormulaLocal = "=redondear((F[-1]C[-2]+F[-1]C[-1]);2)"*

*Cells(4, 3).FormulaLocal = "=Truncar((F[-2]C[-2]+F[-2]C[-1]);2)"*

*Range("A:D").Select*

*Selection.Columns.AutoFit*

*Selection.Rows.AutoFit*

*Range("A1").Select*

*End Sub*

*Sub TruncarCeldasR1C1Absoluta()*

*Application.ThisWorkbook.Sheets(Hoja3.Name).Activate*

*Cells(1, 1).Value = "N1"*

*Cells(1, 2).Value = "N2"*

*Cells(2, 4).Value = "Suma"*

*Cells(3, 4).Value = "Redondear"*

*Cells(4, 4).Value = "Truncar"*

*Range(Cells(2, 1), Cells(2, 3)).Select*

*With Selection*

*.NumberFormat = "#,##0.0000"*

*End With*

*Range(Cells(3, 3), Cells(4, 3)).Select*

*With Selection*

*.NumberFormat = "#,##0.00"*

*End With*

*Randomize*

*Cells(2, 1).Value = Application.Round((Rnd \* 10 + 1), 4)*

*Cells(2, 2).Value = Application.Round((Rnd \* 10 + 1), 4)*

### *'Notación R1C1 Absoluta*

```
Cells(2, 3).Formula = "=Round((R2C1+R2C2),4)"
Cells(3, 3).Formula = "=Round((R2C1+R2C2),2)"
Cells(4, 3).Formula = "=Trunc((R2C1+R2C2),2)"
```

```
Range("A:D").Select
Selection.Columns.AutoFit
Selection.Rows.AutoFit
```

```
Range("A1").Select
```

*End Sub*

*Sub TruncarCeldasF1C1Absoluta()*

*Application.ThisWorkbook.Sheets(Hoja3.Name).Activate*

```
Cells(1, 1).Value = "N1"
Cells(1, 2).Value = "N2"
Cells(2, 4).Value = "Suma"
Cells(3, 4).Value = "Redondear"
Cells(4, 4).Value = "Truncar"
```

```
Range(Cells(2, 1), Cells(2, 3)).Select
```

```
With Selection
.NumberFormat = "#,##0.0000"
End With
```

```
Range(Cells(3, 3), Cells(4, 3)).Select
```

```
With Selection
.NumberFormat = "#,##0.00"
End With
```

```
Randomize
Cells(2, 1).Value = Application.Round((Rnd * 10 + 1), 4)
Cells(2, 2).Value = Application.Round((Rnd * 10 + 1), 4)
```

### **'Notación F1C1 Absoluta**

```
Cells(2, 3).FormulaLocal = "=redondear((F2C1+F2C2);4)"
Cells(3, 3).FormulaLocal = "=redondear((F2C1+F2C2);2)"
Cells(4, 3).FormulaLocal = "=Truncar((F2C1+F2C2);2)"
```

```
Range("A:D").Select
Selection.Columns.AutoFit
Selection.Rows.AutoFit
```

```
Range("A1").Select
```

*End Sub*

## **Módulo2**

*Option Explicit*

*Sub TruncarCeldasR1C1Relativa(N1 As Double, N2 As Double)*

*Application.ThisWorkbook.Sheets(Hoja1.Name).Activate*

*Cells(1, 1).Value = "N1"*  
*Cells(1, 2).Value = "N2"*  
*Cells(2, 4).Value = "Suma"*  
*Cells(3, 4).Value = "Redondear"*  
*Cells(4, 4).Value = "Truncar"*

*Range(Cells(2, 1), Cells(2, 3)).Select*

*With Selection*  
*.NumberFormat = "#,##0.0000"*  
*End With*

*Range(Cells(3, 3), Cells(4, 3)).Select*

*With Selection*  
*.NumberFormat = "#,##0.00"*  
*End With*

*Randomize*  
*Cells(2, 1).Value = N1*  
*Cells(2, 2).Value = N2*

***'Notación R1C1 Relativa***

*Cells(2, 3).Formula = "=Round((RC[-2]+RC[-1]),4)"*  
*Cells(3, 3).Formula = "=Round((R[-1]C[-2]+R[-1]C[-1]),2)"*  
*Cells(4, 3).Formula = "=Trunc((R[-2]C[-2]+R[-2]C[-1]),2)"*

*Range("A:D").Select*  
*Selection.Columns.AutoFit*  
*Selection.Rows.AutoFit*

*Range("A1").Select*

*End Sub*

*Sub TruncarCeldasR1C1Absoluta(N1 As Double, N2 As Double)*

*Application.ThisWorkbook.Sheets(Hoja1.Name).Activate*

*Cells(1, 1).Value = "N1"*  
*Cells(1, 2).Value = "N2"*  
*Cells(2, 4).Value = "Suma"*  
*Cells(3, 4).Value = "Redondear"*  
*Cells(4, 4).Value = "Truncar"*

*Range(Cells(2, 1), Cells(2, 3)).Select*

*With Selection*  
*.NumberFormat = "#,##0.0000"*  
*End With*

*Range(Cells(3, 3), Cells(4, 3)).Select*



```
With Selection
    .NumberFormat = "#,##0.00"
End With
```

```
Randomize
Cells(2, 1).Value = N1
Cells(2, 2).Value = N2
```

### **'Notación R1C1 Absoluta**

```
Cells(2, 3).Formula = "=Round((R2C1+R2C2),4)"
Cells(3, 3).Formula = "=Round((R2C1+R2C2),2)"
Cells(4, 3).Formula = "=Trunc((R2C1+R2C2),2)"
```

```
Range("A:D").Select
Selection.Columns.AutoFit
Selection.Rows.AutoFit
```

```
Range("A1").Select
```

```
End Sub
```

```
Sub TruncarCeldasF1C1Relativa(N1 As Double, N2 As Double)
```

```
Application.ThisWorkbook.Sheets(Hoja1.Name).Activate
```

```
Cells(1, 1).Value = "N1"
Cells(1, 2).Value = "N2"
Cells(2, 4).Value = "Suma"
Cells(3, 4).Value = "Redondear"
Cells(4, 4).Value = "Truncar"
```

```
Range(Cells(2, 1), Cells(2, 3)).Select
```

```
With Selection
    .NumberFormat = "#,##0.0000"
End With
```

```
Range(Cells(3, 3), Cells(4, 3)).Select
```

```
With Selection
    .NumberFormat = "#,##0.00"
End With
```

```
Randomize
Cells(2, 1).Value = N1
Cells(2, 2).Value = N2
```

### **'Notación F1C1 Relativa**

```
Cells(2, 3).FormulaLocal = "=redondear((FC[-2]+FC[-1]);4)"
Cells(3, 3).FormulaLocal = "=redondear((F[-1]C[-2]+F[-1]C[-1]);2)"
Cells(4, 3).FormulaLocal = "=Truncar((F[-2]C[-2]+F[-2]C[-1]);2)"
```

```
Range("A:D").Select
Selection.Columns.AutoFit
Selection.Rows.AutoFit
```

```

Range("A1").Select

End Sub

Sub TruncarCeldasF1C1Absoluta(N1 As Double, N2 As Double)

Application.ThisWorkbook.Sheets(Hoja1.Name).Activate

Cells(1, 1).Value = "N1"
Cells(1, 2).Value = "N2"
Cells(2, 4).Value = "Suma"
Cells(3, 4).Value = "Redondear"
Cells(4, 4).Value = "Truncar"

Range(Cells(2, 1), Cells(2, 3)).Select

    With Selection
        .NumberFormat = "#,##0.0000"
    End With

Range(Cells(3, 3), Cells(4, 3)).Select

    With Selection
        .NumberFormat = "#,##0.00"
    End With

    Randomize
    Cells(2, 1).Value = N1
    Cells(2, 2).Value = N2

'Notación F1C1 Absoluta

Cells(2, 3).FormulaLocal = "=redondear((F2C1+F2C2);4)"
Cells(3, 3).FormulaLocal = "=redondear((F2C1+F2C2);2)"
Cells(4, 3).FormulaLocal = "=Truncar((F2C1+F2C2);2)"

Range("A:D").Select
Selection.Columns.AutoFit
Selection.Rows.AutoFit

Range("A1").Select

End Sub

```

### ***Solución 08.04***

A continuación, incluyo el Código asociado a este Ejercicio, dividido según cada Objeto.

#### ***Módulo1***

##### ***Option Explicit***

##### ***Sub RCRelativa()***

***Dim N1 As Double, N2 As Double***

##### ***Randomize***

***N1 = Application.Round((Rnd \* 10 + 1), 4)***

***N2 = Application.Round((Rnd \* 10 + 1), 4)***

***Call Módulo2.TruncarCeldasR1C1Relativa(N1, N2)***

***End Sub***

##### ***Sub RCAbsoluta()***

***Dim N1 As Double, N2 As Double***

##### ***Randomize***

***N1 = Application.Round((Rnd \* 10 + 1), 4)***

***N2 = Application.Round((Rnd \* 10 + 1), 4)***

***Call Módulo2.TruncarCeldasR1C1Absoluta(N1, N2)***

***End Sub***

##### ***Sub FCRelativa()***

***Dim N1 As Double, N2 As Double***

##### ***Randomize***

***N1 = Application.Round((Rnd \* 10 + 1), 4)***

***N2 = Application.Round((Rnd \* 10 + 1), 4)***

***Call Módulo2.TruncarCeldasF1C1Relativa(N1, N2)***

***End Sub***

##### ***Sub FCAbsoluta()***

***Dim N1 As Double, N2 As Double***

##### ***Randomize***

***N1 = Application.Round((Rnd \* 10 + 1), 4)***

***N2 = Application.Round((Rnd \* 10 + 1), 4)***

***Call Módulo2.TruncarCeldasF1C1Absoluta(N1, N2)***

***End Sub***

#### ***Módulo2***

##### ***Option Explicit***

*Sub TruncarCeldasR1C1Relativa(N1 As Double, N2 As Double)*

*Application.ThisWorkbook.Sheets(Hoja1.Name).Activate*

*Cells(1, 1).Value = "N1"*  
*Cells(1, 2).Value = "N2"*  
*Cells(2, 4).Value = "Suma"*  
*Cells(3, 4).Value = "Redondear"*  
*Cells(4, 4).Value = "Truncar"*

*Range(Cells(2, 1), Cells(2, 3)).Select*

*With Selection*  
*.NumberFormat = "#,##0.0000"*  
*End With*

*Range(Cells(3, 3), Cells(4, 3)).Select*

*With Selection*  
*.NumberFormat = "#,##0.00"*  
*End With*

*Randomize*  
*Cells(2, 1).Value = N1*  
*Cells(2, 2).Value = N2*

***'Notación R1C1 Relativa***

*Cells(2, 3).Formula = "=Round((RC[-2]+RC[-1]),4)"*  
*Cells(3, 3).Formula = "=Round((R[-1]C[-2]+R[-1]C[-1]),2)"*  
*Cells(4, 3).Formula = "=Trunc((R[-2]C[-2]+R[-2]C[-1]),2)"*

*Range("A:D").Select*  
*Selection.Columns.AutoFit*  
*Selection.Rows.AutoFit*

*Range("A1").Select*

*End Sub*

*Sub TruncarCeldasR1C1Absoluta(N1 As Double, N2 As Double)*

*Application.ThisWorkbook.Sheets(Hoja1.Name).Activate*

*Cells(1, 1).Value = "N1"*  
*Cells(1, 2).Value = "N2"*  
*Cells(2, 4).Value = "Suma"*  
*Cells(3, 4).Value = "Redondear"*  
*Cells(4, 4).Value = "Truncar"*

*Range(Cells(2, 1), Cells(2, 3)).Select*

*With Selection*  
*.NumberFormat = "#,##0.0000"*  
*End With*

*Range(Cells(3, 3), Cells(4, 3)).Select*

```
With Selection
    .NumberFormat = "#,##0.00"
End With
```

```
Randomize
Cells(2, 1).Value = N1
Cells(2, 2).Value = N2
```

### **'Notación R1C1 Absoluta**

```
Cells(2, 3).Formula = "=Round((R2C1+R2C2),4)"
Cells(3, 3).Formula = "=Round((R2C1+R2C2),2)"
Cells(4, 3).Formula = "=Trunc((R2C1+R2C2),2)"
```

```
Range("A:D").Select
Selection.Columns.AutoFit
Selection.Rows.AutoFit
```

```
Range("A1").Select
```

```
End Sub
```

```
Sub TruncarCeldasF1C1Relativa(N1 As Double, N2 As Double)
```

```
Application.ThisWorkbook.Sheets(Hoja1.Name).Activate
```

```
Cells(1, 1).Value = "N1"
Cells(1, 2).Value = "N2"
Cells(2, 4).Value = "Suma"
Cells(3, 4).Value = "Redondear"
Cells(4, 4).Value = "Truncar"
```

```
Range(Cells(2, 1), Cells(2, 3)).Select
```

```
With Selection
    .NumberFormat = "#,##0.0000"
End With
```

```
Range(Cells(3, 3), Cells(4, 3)).Select
```

```
With Selection
    .NumberFormat = "#,##0.00"
End With
```

```
Randomize
Cells(2, 1).Value = N1
Cells(2, 2).Value = N2
```

### **'Notación F1C1 Relativa**

```
Cells(2, 3).FormulaLocal = "=redondear((FC[-2]+FC[-1]);4)"
Cells(3, 3).FormulaLocal = "=redondear((F[-1]C[-2]+F[-1]C[-1]);2)"
Cells(4, 3).FormulaLocal = "=Truncar((F[-2]C[-2]+F[-2]C[-1]);2)"
```

```
Range("A:D").Select
Selection.Columns.AutoFit
Selection.Rows.AutoFit
```

```

Range("A1").Select

End Sub

Sub TruncarCeldasF1C1Absoluta(N1 As Double, N2 As Double)

Application.ThisWorkbook.Sheets(Hoja1.Name).Activate

Cells(1, 1).Value = "N1"
Cells(1, 2).Value = "N2"
Cells(2, 4).Value = "Suma"
Cells(3, 4).Value = "Redondear"
Cells(4, 4).Value = "Truncar"

Range(Cells(2, 1), Cells(2, 3)).Select

With Selection
.NumberFormat = "#,##0.0000"
End With

Range(Cells(3, 3), Cells(4, 3)).Select

With Selection
.NumberFormat = "#,##0.00"
End With

Randomize
Cells(2, 1).Value = N1
Cells(2, 2).Value = N2

'Notación F1C1 Absoluta

Cells(2, 3).FormulaLocal = "=redondear((F2C1+F2C2);4)"
Cells(3, 3).FormulaLocal = "=redondear((F2C1+F2C2);2)"
Cells(4, 3).FormulaLocal = "=Truncar((F2C1+F2C2);2)"

Range("A:D").Select
Selection.Columns.AutoFit
Selection.Rows.AutoFit

Range("A1").Select

End Sub

```

### ***Solución 08.05***

A continuación, incluyo el Código asociado a este Ejercicio, dividido según cada Objeto.

#### ***Módulo1***

##### ***Option Explicit***

##### ***Sub Impuesto()***

***Dim Valor As Double, Impuesto As Double, i As Integer***

***Application.ThisWorkbook.Sheets(Hoja1.Name).Activate***

***Cells.ClearContents***

***For i = 1 To 3***

***Cells(2, i).NumberFormat = "#,##0.000"***

***Next i***

***Valor = Application.InputBox(prompt:="Introduce el Precio", Title:="Calcular Impuesto", Default:=0, Type:=1)***

***Impuesto = Application.InputBox(prompt:="Introduce el Impuesto", Title:="Impuesto", Default:=7, Type:=1)***

***Cells(1, 1).Value = "Valor"***

***Cells(1, 2).Value = "Impuesto"***

***Cells(2, 1).Value = Valor***

***Cells(2, 2).Value = Impuesto***

***Cells(2, 3).Value = CalcularImpuesto(Valor, Impuesto)***

***Range("A:D").Select***

***Selection.Rows.AutoFit***

***Selection.Columns.AutoFit***

***Range("A1").Select***

***End Sub***

#### ***Módulo2***

##### ***Option Explicit***

##### ***Sub FuncionCuadratica()***

***Dim Var\_a As Double, Var\_b As Double, Var\_c As Double***

***Dim Discriminante As Double***

***Application.ThisWorkbook.Sheets(Hoja2.Name).Activate***

***Cells.ClearContents***

***Cells(1, 1).Value = "a"***

***Cells(1, 2).Value = "b"***

***Cells(1, 3).Value = "c"***

***Cells(1, 4).Value = "Solución x"***

*Var\_a = 0*

*Do While Var\_a = 0*

*Var\_a = Application.InputBox(prompt:="Introduce el Valor Numérico de a", Title:="ax^2 + bx + c = 0", Type:=1)*

*Cells(2, 1).Value = Var\_a*

*Var\_b = Application.InputBox(prompt:="Introduce el Valor Numérico de b", Title:="ax^2 + bx + c = 0", Type:=1)*

*Cells(2, 2).Value = Var\_b*

*Var\_c = Application.InputBox(prompt:="Introduce el Valor Numérico de c", Title:="ax^2 + bx + c = 0", Type:=1)*

*Cells(2, 3).Value = Var\_c*

*If Var\_a = 0 Then*

*MsgBox "a no puede ser = 0"*

*End If*

*Loop*

*Discriminante = (Var\_b ^ 2 - 4 \* Var\_a \* Var\_c)*

*If Discriminante > 0 Then*

*MsgBox "Hay 2 Soluciones Reales para esta Ecuación"*

*Cells(2, 4).Value = EcuacionCuadratica(Var\_a, Var\_b, Var\_c, Discriminante, True)*

*Cells(3, 4).Value = EcuacionCuadratica(Var\_a, Var\_b, Var\_c, Discriminante, False)*

*ElseIf Discriminante = 0 Then*

*MsgBox "Hay 2 Soluciones Reales, aunque en realidad son la misma"*

*MsgBox "x = " & EcuacionCuadratica(Var\_a, Var\_b, Var\_c)*

*Else:*

*Cells(2, 4).Value = "Número Complejo"*

*MsgBox "Solución = Número Complejo"*

*End If*

*Range("A:D").Select*

*Selection.Rows.AutoFit*

*Selection.Columns.AutoFit*

*Range("A1").Select*

*End Sub*

## ***Funciones***

### ***Option Explicit***

***Function CalcularImpuesto(Valor As Double, Impuesto As Double) As Double***

***Dim Eleccion As String***

***Eleccion = Application.InputBox(prompt:="Elige 1(Impuesto Sin Reducción) o 2(Impuesto Reducido)", Title:="Elegir Tipo Impositivo", Default:="1", Type:=2)***

***Do While Eleccion <> "1" And Eleccion <> "2"***

***Eleccion = Application.InputBox(prompt:="Elige 1(Impuesto Sin Reducción) o 2(Impuesto Reducido)", Title:="Elegir Tipo Impositivo", Default:="1", Type:=2)***

***Loop***

***Cells(1, 3).Value = "Valor con Impuesto" & "(" & Eleccion & ")"***



*If Eleccion = 1 Then*

*CalcularImpuesto = (Valor \* Impuesto / 100) + Valor*

*Else: CalcularImpuesto = (Valor \* Impuesto \* 0.8 / 100) + Valor*

*End If*

*End Function*

*Function EcuacionCuadratica(Var\_a As Double, Var\_b As Double, Var\_c As Double,  
Optional Discriminante As Double, Optional Solucion As Boolean) As Double*

*Dim Var\_x As Double*

*If Discriminante > 0 Then*

*Select Case Solucion*

*Case True*

*Var\_x = ((-Var\_b + (Var\_b ^ 2 - 4 \* Var\_a \* Var\_c) ^ (1 / 2)) / (2 \* Var\_a))*

*EcuacionCuadratica = Application.Round(Var\_x, 3)*

*Case Else:*

*Var\_x = ((-Var\_b - (Var\_b ^ 2 - 4 \* Var\_a \* Var\_c) ^ (1 / 2)) / (2 \* Var\_a))*

*EcuacionCuadratica = Application.Round(Var\_x, 3)*

*End Select*

*Else*

*Var\_x = ((-Var\_b) / (2 \* Var\_a))*

*EcuacionCuadratica = Var\_x*

*End If*

*End Function*

## **09.- FILTRAR, ORDENAR, IMPRIMIR, PDF RANGOS**

### ***Solución 09.01***

A continuación, incluyo el Código asociado a este Ejercicio, dividido según cada Objeto.

#### ***Módulo1***

##### ***Option Explicit***

##### ***Sub OrdenarTabla()***

```
Application.Sheets(Hoja1.Name).Range("E1").Sort  
key1:=Application.Worksheets("Hoja1").Range("H1"), order1:=xlDescending, _  
key2:=Application.Worksheets("Hoja1").Range("G1"), order1:=xlAscending,  
Header:=xlYes
```

***End Sub***

##### ***Sub Orden3Campos()***

```
Application.Sheets(Hoja1.Name).Range("E1").Sort  
key1:=Application.Worksheets("Hoja1").Range("H1"), order1:=xlDescending, _  
key2:=Application.Worksheets("Hoja1").Range("E1"), order2:=xlDescending, _  
key3:=Application.Worksheets("Hoja1").Range("F1"), order3:=xlAscending,  
Header:=xlYes
```

***End Sub***

### ***Solución 09.02***

A continuación, incluyo el Código asociado a este Ejercicio, dividido según cada Objeto.

#### ***Hoja4(ResultadosFiltrados)***

##### ***Option Explicit***

***Private Sub cboFiltrar\_Change()***

***FiltrarEnDestino (cboFiltrar.Value)***

***End Sub***

##### ***ThisWorkbook***

##### ***Option Explicit***

***Private Sub Workbook\_Open()***

***Hoja4.cboFiltrar.Value = ""***

***Hoja3.Activate***

***Hoja3.Range(Range("D1"), Range("D1").End(xlDown)).Select***

***Selection.AdvancedFilter Action:=xlFilterCopy, copytorange:=Hoja3.Range("F1"), Unique:=True***

***Hoja3.Range(Range("F2"), Range("F2").End(xlDown)).Select***

***Hoja4.cboFiltrar.ListFillRange = "=" & Hoja3.Name & "!" & Selection.Address***

***Hoja4.Activate***

***End Sub***

#### ***Módulo1***

##### ***Option Explicit***

***Sub OrdenarTabla()***

***Application.Sheets(Hoja1.Name).Range("E1").Sort  
key1:=Application.Worksheets("Hoja1").Range("H1"), order1:=xlDescending, \_  
key2:=Application.Worksheets("Hoja1").Range("G1"), order1:=xlAscending,  
Header:=xlYes***

***End Sub***

***Sub Orden3Campos()***

***Application.Sheets(Hoja1.Name).Range("E1").Sort  
key1:=Application.Worksheets("Hoja1").Range("H1"), order1:=xlDescending, \_  
key2:=Application.Worksheets("Hoja1").Range("E1"), order2:=xlDescending, \_***

```
key3:=Application.Worksheets("Hoja1").Range("F1"), order3:=xlAscending,  
Header:=xlYes
```

```
End Sub
```

```
Sub FiltrarEnOrigen() 'Filtrar en la misma Hoja dónde están los Datos
```

```
Application.ThisWorkbook.Sheets(Hoja2.Name).Activate
```

```
Range("A1").CurrentRegion.Select
```

```
Selection.AdvancedFilter Action:=xlFilterInPlace,  
CriteriaRange:=Sheets(Hoja2.Name).Range("D12:D13"), Unique:=False
```

```
Application.Sheets(Hoja2.Name).Range("A1").Sort  
key1:=Application.Worksheets("Hoja2").Range("A1"), order1:=xlAscending,  
Header:=xlYes
```

```
Range("A1").Select
```

```
End Sub
```

## Módulo2

```
Option Explicit
```

```
Sub FiltrarEnDestino(cboFiltrar As String) 'Filtrar en otra Hoja distinta de dónde están los Datos
```

```
Dim Rango As Range
```

```
Hoja3.Range("H2").Value = cboFiltrar
```

```
Set Rango = Hoja3.Range("A1").CurrentRegion
```

```
Rango.AdvancedFilter Action:=xlFilterCopy, CriteriaRange:=Hoja3.Range("H1:H2"),  
copytorange:=Hoja4.Range("A1:D1")
```

```
Hoja4.Range("A1").Sort key1:=Hoja4.Range("A1"), order1:=xlAscending, Header:=xlYes
```

```
Hoja4.Range("A1").Select
```

```
End Sub
```

### ***Solución 09.03***

A continuación, incluyo el Código asociado a este Ejercicio, dividido según cada Objeto.

#### ***Hoja2(ResultadosFiltrados)***

##### ***Option Explicit***

***Private Sub cboFiltrar\_Change()***

***FiltrarEnDestino (cboFiltrar.Value)***

***End Sub***

***Private Sub opbNombre\_Click()***

***Application.ThisWorkbook.Sheets(Hoja2.Name).Activate***

***Application.Sheets(Hoja2.Name).Range("A1").Sort  
key1:=Application.Sheets(Hoja2.Name).Range("A1"), order1:=xlAscending,  
Header:=xlYes***

***Range("A1").Select***

***End Sub***

***Private Sub opbFechaNacimiento\_Click()***

***Application.ThisWorkbook.Sheets(Hoja2.Name).Activate***

***Application.Sheets(Hoja2.Name).Range("A1").Sort  
key1:=Application.Sheets(Hoja2.Name).Range("B1"), order1:=xlAscending,  
Header:=xlYes***

***Range("A1").Select***

***End Sub***

***Private Sub opbEdad\_Click()***

***Application.ThisWorkbook.Sheets(Hoja2.Name).Activate***

***Application.Sheets(Hoja2.Name).Range("A1").Sort  
key1:=Application.Sheets(Hoja2.Name).Range("C1"), order1:=xlAscending,  
Header:=xlYes***

***Range("A1").Select***

***End Sub***

***Private Sub opbProfesion\_Click()***

***Application.ThisWorkbook.Sheets(Hoja2.Name).Activate***

***Application.Sheets(Hoja2.Name).Range("A1").Sort  
key1:=Application.Sheets(Hoja2.Name).Range("D1"), order1:=xlAscending,  
Header:=xlYes***

```

Range("A1").Select

End Sub

ThisWorkbook

Option Explicit

Private Sub Workbook_Open()

    Application.ThisWorkbook.Sheets(Hoja1.Name).Activate

    Hoja1.Range("H2").Value = ""

    Hoja1.Range(Range("D1"), Range("D1").End(xlDown)).Select

    Selection.AdvancedFilter Action:=xlFilterCopy, copytorange:=Range("F1"),
Unique:=True

    Application.Sheets(Hoja1.Name).Range("F1").Sort
key1:=Application.Worksheets("DatosOriginales").Range("F1"), order1:=xlAscending,
Header:=xlYes

    Sheets(Hoja1.Name).Range(Range("F2"), Range("F2").End(xlDown)).Select
    Sheets(Hoja2.Name).cboFiltrar.ListFillRange = "=" & Hoja1.Name & "!" &
Selection.Address

    Application.ThisWorkbook.Sheets(Hoja2.Name).Activate
    Sheets(Hoja2.Name).cboFiltrar.Value = ""

    FiltrarEnDestino (Sheets(Hoja2.Name).cboFiltrar.Value)

    Hoja2.opbNombre.Value = True

End Sub

```

## Módulo1

Option Explicit

Sub FiltrarEnDestino(cboFiltrar As String) *'Filtra en otra Hoja distinta de dónde están los Datos*

```

    Application.ThisWorkbook.Sheets(Hoja1.Name).Activate

    Sheets(Hoja1.Name).Range("H2").Value = cboFiltrar

    Sheets(Hoja1.Name).Range("A1").CurrentRegion.Select

    Selection.AdvancedFilter Action:=xlFilterCopy,
CriteriaRange:=Sheets(Hoja1.Name).Range("H1:H2"),
copytorange:=Sheets(Hoja2.Name).Range("A1:D1")

    Sheets(Hoja2.Name).Activate

```

```
Application.Sheets(Hoja2.Name).Range("A1").Sort  
key1:=Application.Sheets(Hoja2.Name).Range("A1"), order1:=xlAscending,  
Header:=xlYes
```

```
Sheets(Hoja2.Name).Range("A1").Select
```

```
End Sub
```

***Solución 09.04***

A continuación, incluyo el Código asociado a este Ejercicio, dividido según cada Objeto.

***Hoja1(Datos)***

*Option Explicit*

```
Private Sub cmbGenerarTabla_Click()
    GenerarDatos
End Sub
```

***Hoja2(Filtrado)***

*Option Explicit*

```
Private Sub cmbFiltrarFechas_Click()
    FiltrarFechas
End Sub
```

***Funciones***

*Option Explicit*

```
Function GenerarDatosAleatorios(Recuento As Integer) As Variant
    Dim ValorInferior As Date, ValorSuperior As Date, i As Integer
    Dim MatrizEdad As Variant
```

```
    ReDim MatrizEdad(1 To Recuento, 1 To 4)
```

```
    ValorInferior = "01/01/1950"
    ValorSuperior = "01/01/1980"
```

```
    For i = 1 To Recuento
        MatrizEdad(i, 1) = Application.WorksheetFunction.RandBetween(ValorInferior,
ValorSuperior)
        MatrizEdad(i, 2) = Int((Date - MatrizEdad(i, 1)) / 365)
        If Int(Rnd * 100 + 1) Mod 2 = 0 Then
            MatrizEdad(i, 3) = "SI"
        Else: MatrizEdad(i, 3) = "NO"
        End If
    Next
```

```
    GenerarDatosAleatorios = MatrizEdad
```

```
End Function
```

***Módulo1***

*Option Explicit*

```
Sub GenerarDatos()
    Dim Recuento As Integer, i As Integer
    Dim MiMatriz As Variant
```



*Application.ThisWorkbook.Sheets(Hoja1.Name).Activate*

*Cells(1, 1).Value = "NOMBRE"*  
*Cells(1, 2).Value = "FECHA\_NACIMIENTO"*  
*Cells(1, 3).Value = "EDAD"*

*Cells(2, 1).Value = "PAKI"*  
*Cells(3, 1).Value = "LUIS"*  
*Cells(4, 1).Value = "MANUEL"*  
*Cells(5, 1).Value = "MONICA"*  
*Cells(6, 1).Value = "CLAUDIA"*  
*Cells(7, 1).Value = "ALVARO"*  
*Cells(8, 1).Value = "ANA"*  
*Cells(9, 1).Value = "JOSE"*  
*Cells(10, 1).Value = "ALBERTO"*  
*Cells(11, 1).Value = "MARIA"*  
*Cells(12, 1).Value = "FERNANDO"*  
*Cells(13, 1).Value = "BEGOÑA"*  
*Cells(14, 1).Value = "PINO"*  
*Cells(15, 1).Value = "NOELIA"*  
*Cells(16, 1).Value = "FRANCISCO"*  
*Cells(17, 1).Value = "RICARDO"*  
*Cells(18, 1).Value = "ANDREA"*  
*Cells(19, 1).Value = "JAVIER"*  
*Cells(20, 1).Value = "JESUS"*

*Recuento = Range(Cells(2, 1), Cells(2, 1).End(xlDown)).Count*  
*MiMatriz = GenerarDatosAleatorios(Recuento)*

*For i = 1 To Recuento*  
     *Cells(i + 1, 2).NumberFormat = "dd/mm/yyyy"*  
     *Cells(i + 1, 2).Value = MiMatriz(i, 1)*  
     *Cells(i + 1, 3).Value = MiMatriz(i, 2)*  
     *Cells(i + 1, 4).Value = MiMatriz(i, 3)*  
*Next i*

*Range("A:D").Select*  
*Selection.Columns.AutoFit*  
*Selection.Rows.AutoFit*  
*Range("A1").Select*

*End Sub*

*Sub FiltrarFechas()*  
*Dim FechaInicial As Date, FechaFinal As Date, i As Integer, Flag As Boolean*

*Application.ThisWorkbook.Sheets(Hoja2.Name).Activate*

*Hoja2.Cells.ClearContents*

*For i = 1 To 4*  
     *Hoja2.Cells(1, i).Value = Hoja1.Cells(1, i).Value*  
*Next i*

*Hoja1.Range("G2:H2").Value = ""*  
*Hoja1.Range("I2").Value = ""*  
*Flag = True 'Mientras valga True, la Fecha es incorrecta*

```

Do While Flag = True
    FechaInicial = Format(Application.InputBox(Prompt:="Introduce la Fecha Inicial
del Intervalo", Title:="Fecha Inicial", Default:="01/01/1950", Type:=2), "DD/MM/YYYY")
    FechaFinal = Application.InputBox(Prompt:="Introduce la Fecha Final del
Intervalo", Title:="Fecha Final", Default:="01/01/1980", Type:=2)
    If FechaInicial < "01/01/1950" Or FechaInicial > "01/01/1980" Then
        Flag = True
    ElseIf FechaFinal < "01/01/1950" Or FechaFinal > "01/01/1980" Then
        Flag = True
    Else: Flag = False
    End If
Loop

Hoja1.Range("G2").Value = ">=" & FechaInicial
Hoja1.Range("H2").Value = "<=" & FechaFinal

If Hoja2.chkCliente.Value = True Then
    Hoja1.Range("I2").Value = "SI"
Else: Hoja1.Range("I2").Value = "NO"
End If

Hoja1.Activate
Hoja1.Range("A1").CurrentRegion.Select

Selection.AdvancedFilter Action:=xlFilterCopy,
CriteriaRange:=Sheets(Hoja1.Name).Range("G1:I2"),
CopyToRange:=Sheets(Hoja2.Name).Range("A1:D1")

If Hoja2.opbOrdenNombre.Value = True Then
    Application.Sheets(Hoja2.Name).Range("A1").Sort
key1:=Application.Sheets(Hoja2.Name).Range("A1"), order1:=xlAscending,
Header:=xlYes
    Else: Application.Sheets(Hoja2.Name).Range("A1").Sort
key1:=Application.Sheets(Hoja2.Name).Range("B1"), order1:=xlAscending,
Header:=xlYes
    End If

Hoja2.Activate
Hoja2.Cells(1, 1).Select

End Sub

```

### ***Solución 09.05***

A continuación, incluyo el Código asociado a este Ejercicio, dividido según cada Objeto.

#### ***Hoja1(Datos)***

*Option Explicit*

```
Private Sub cmbGenerarTabla_Click()  
    GenerarDatos  
End Sub
```

#### ***Hoja2(Filtrado)***

*Option Explicit*

```
Private Sub cmbFiltrarFechas_Click()  
    FiltrarFechas  
End Sub
```

#### ***ThisWorkbook***

*Option Explicit*

```
Private Sub Workbook_Open()  
    Hoja2.chkPDF.Value = False  
End Sub
```

#### ***Funciones***

*Option Explicit*

```
Function GenerarDatosAleatorios(Recuento As Integer) As Variant  
Dim ValorInferior As Date, ValorSuperior As Date, i As Integer  
Dim MatrizEdad As Variant
```

```
    ReDim MatrizEdad(1 To Recuento, 1 To 4)
```

```
    ValorInferior = "01/01/1950"  
    ValorSuperior = "01/01/1980"
```

```
    For i = 1 To Recuento  
        MatrizEdad(i, 1) = Application.WorksheetFunction.RandBetween(ValorInferior,  
ValorSuperior)  
        MatrizEdad(i, 2) = Int((Date - MatrizEdad(i, 1)) / 365)  
        If Int(Rnd * 100 + 1) Mod 2 = 0 Then  
            MatrizEdad(i, 3) = "SI"  
        Else: MatrizEdad(i, 3) = "NO"  
        End If  
    Next
```

```
    GenerarDatosAleatorios = MatrizEdad
```

```
End Function
```

## ***Módulo1***

### ***Option Explicit***

***Sub GenerarDatos()***

***Dim Recuento As Integer, i As Integer***

***Dim MiMatriz As Variant***

***Application.ThisWorkbook.Sheets(Hoja1.Name).Activate***

***Cells(1, 1).Value = "NOMBRE"***

***Cells(1, 2).Value = "FECHA\_NACIMIENTO"***

***Cells(1, 3).Value = "EDAD"***

***Cells(2, 1).Value = "PAKI"***

***Cells(3, 1).Value = "LUIS"***

***Cells(4, 1).Value = "MANUEL"***

***Cells(5, 1).Value = "MONICA"***

***Cells(6, 1).Value = "CLAUDIA"***

***Cells(7, 1).Value = "ALVARO"***

***Cells(8, 1).Value = "ANA"***

***Cells(9, 1).Value = "JOSE"***

***Cells(10, 1).Value = "ALBERTO"***

***Cells(11, 1).Value = "MARIA"***

***Cells(12, 1).Value = "FERNANDO"***

***Cells(13, 1).Value = "BEGOÑA"***

***Cells(14, 1).Value = "PINO"***

***Cells(15, 1).Value = "NOELIA"***

***Cells(16, 1).Value = "FRANCISCO"***

***Cells(17, 1).Value = "RICARDO"***

***Cells(18, 1).Value = "ANDREA"***

***Cells(19, 1).Value = "JAVIER"***

***Cells(20, 1).Value = "JESUS"***

***Recuento = Range(Cells(2, 1), Cells(2, 1).End(xlDown)).Count***

***MiMatriz = GenerarDatosAleatorios(Recuento)***

***For i = 1 To Recuento***

***Cells(i + 1, 2).NumberFormat = "dd/mm/yyyy"***

***Cells(i + 1, 2).Value = MiMatriz(i, 1)***

***Cells(i + 1, 3).Value = MiMatriz(i, 2)***

***Cells(i + 1, 4).Value = MiMatriz(i, 3)***

***Next i***

***Range("A:D").Select***

***Selection.Columns.AutoFit***

***Selection.Rows.AutoFit***

***Range("A1").Select***

***End Sub***

***Sub FiltrarFechas()***

***Dim FechaInicial As Date, FechaFinal As Date, i As Integer, Flag As Boolean***

***On Error GoTo CerrarDocumento***

***Application.ThisWorkbook.Sheets(Hoja2.Name).Activate***

*Hoja2.Cells.ClearContents*

*For i = 1 To 4*

*Hoja2.Cells(1, i).Value = Hoja1.Cells(1, i).Value*

*Next i*

*Hoja1.Range("G2:H2").Value = ""*

*Hoja1.Range("I2").Value = ""*

*Flag = True 'Mientras valga True, la Fecha es incorrecta*

*Do While Flag = True*

*FechaInicial = Format(Application.InputBox(Prompt:="Introduce la Fecha Inicial del Intervalo", Title:="Fecha Inicial", Default:="01/01/1950", Type:=2), "DD/MM/YYYY")*

*FechaFinal = Application.InputBox(Prompt:="Introduce la Fecha Final del Intervalo", Title:="Fecha Final", Default:="01/01/1980", Type:=2)*

*If FechaInicial < "01/01/1950" Or FechaInicial > "01/01/1980" Then*

*Flag = True*

*ElseIf FechaFinal < "01/01/1950" Or FechaFinal > "01/01/1980" Then*

*Flag = True*

*Else: Flag = False*

*End If*

*Loop*

*Hoja1.Range("G2").Value = ">=" & FechaInicial*

*Hoja1.Range("H2").Value = "<=" & FechaFinal*

*If Hoja2.chkCliente.Value = True Then*

*Hoja1.Range("I2").Value = "SI"*

*Else: Hoja1.Range("I2").Value = "NO"*

*End If*

*Hoja1.Activate*

*Hoja1.Range("A1").CurrentRegion.Select*

*Selection.AdvancedFilter Action:=xlFilterCopy,  
CriteriaRange:=Sheets(Hoja1.Name).Range("G1:I2"),  
CopyToRange:=Sheets(Hoja2.Name).Range("A1:D1")*

*If Hoja2.opbOrdenNombre.Value = True Then*

*Application.Sheets(Hoja2.Name).Range("A1").Sort*

*key1:=Application.Sheets(Hoja2.Name).Range("A1"), order1:=xlAscending,  
Header:=xlYes*

*Else: Application.Sheets(Hoja2.Name).Range("A1").Sort*

*key1:=Application.Sheets(Hoja2.Name).Range("B1"), order1:=xlAscending,  
Header:=xlYes*

*End If*

*Hoja2.Activate*

*Hoja2.Range("A:D").Select*

*With Selection*

*.Rows.AutoFit*

*.Columns.AutoFit*

*End With*

*If Hoja2.chkPDF = True Then*

```
With Hoja2.PageSetup
    .PrintQuality = 600
    .CenterHorizontally = True
    .CenterVertically = False
    .Orientation = xlPortrait
    .PaperSize = xlPaperA4
    .CenterHeader = "&""Tahoma,Negrita Cursiva""&16Ejercicio Curso de Macros
VBA Excel"
    .RightFooter = "&P"
    .FirstPageNumber = xlAutomatic
    .Zoom = 100
End With

Hoja2.Range("A1").CurrentRegion.Select

Selection.ExportAsFixedFormat Type:=xlTypePDF,
Filename:="C:\Users\Luis\Documents\VBA\Listado_Informe",
Quality:=xlQualityStandard, IgnorePrintAreas:=False, openafterpublish:=True

Hoja2.chkPDF = False
End If

Hoja2.Cells(1, 1).Select

Exit Sub

CerrarDocumento:
MsgBox "Error Número = " & Err.Number
MsgBox "Error de Tipo = " & Err.Description
MsgBox "Cierra el Documento PDF y vuelve a generarlo"

End Sub
```

## **10.- FORMULARIOS DE USUARIOS (USERFORMS)**

### ***Solución 10.01***

A continuación, incluyo el Código asociado a este Ejercicio, dividido según cada Objeto.

#### ***Hoja1(Hoja1)***

##### ***Option Explicit***

```
Private Sub cmdCerrar_Click()
    frmFormulario.Hide
End Sub
```

```
Private Sub cmdColorAleatorio_Click()
    Dim Red As Integer, Green As Integer, Blue As Integer
```

```
    Red = Int(Rnd * 255 + 1)
    Green = Int(Rnd * 255 + 1)
    Blue = Int(Rnd * 255 + 1)
```

```
    frmFormulario.BackColor = RGB(Red, Green, Blue)
```

```
    frmFormulario.txtColor.Value = Red & ", " & Green & ", " & Blue
```

```
End Sub
```

```
Private Sub cmdMostrar_Click()
    frmFormulario.Show 0
End Sub
```

#### ***ThisWorkbook***

##### ***Option Explicit***

```
Private Sub Workbook_Open()
    frmFormulario.Show 0
End Sub
```

#### ***frmFormulario***

##### ***Option Explicit***

```
Private Sub UserForm_Initialize()
```

```
    With frmFormulario
        .Height = 175
        .Width = 175
        .txtAncho.Value = frmFormulario.Height
        .txtAlto.Value = frmFormulario.Width
    End With
```

```
End Sub
```

```
Private Sub UserForm_Resize()
    Dim Ancho As Integer, Alto As Integer
```

```
Ancho = frmFormulario.Width  
Alto = frmFormulario.Height
```

```
frmFormulario.Caption = "Medidas Formulario = " & Ancho & "x" & Alto
```

```
End Sub
```

```
Private Sub spbHorizontal_Change()
```

```
    frmFormulario.Width = spbHorizontal.Value  
    frmFormulario.txtAncho.Value = spbHorizontal.Value
```

```
End Sub
```

```
Private Sub spbVertical_Change()
```

```
    frmFormulario.Height = spbVertical.Value  
    frmFormulario.txtAlto.Value = spbVertical.Value
```

```
End Sub
```



### ***Solución 10.02***

A continuación, incluyo el Código asociado a este Ejercicio, dividido según cada Objeto.

#### ***frmColoresRGB***

##### ***Option Explicit***

##### ***Private Sub UserForm\_Initialize()***

***Me.Caption = "Deslizando Colores"***

***Me.Height = 270***

***Me.Width = 900***

***frmColoresRGB.scbRojo.Value = 0***

***frmColoresRGB.scbVerde.Value = 0***

***frmColoresRGB.scbAzul.Value = 255***

***Me.txtRojo.Value = 0***

***Me.txtVerde.Value = 0***

***Me.txtAzul.Value = 255***

***Me.txtColor.BackColor = RGB(Me.scbRojo.Value, Me.scbVerde.Value, Me.scbAzul)***

***Me.scb3Colores.BackColor = RGB(255, 255, 255)***

##### ***End Sub***

##### ***Private Sub scb3Colores\_Change()***

***frmColoresRGB.scbRojo.Value = 0 + scb3Colores.Value***

***frmColoresRGB.scbVerde.Value = 0***

***frmColoresRGB.scbAzul.Value = 255 - scb3Colores.Value***

***Me.txtColor.BackColor = RGB(Me.scbRojo.Value, Me.scbVerde.Value, Me.scbAzul)***

***Me.scb3Colores.BackColor = RGB(Me.scbRojo.Value, Me.scbVerde.Value, Me.scbAzul)***

##### ***End Sub***

##### ***Private Sub scbRojo\_Change()***

***frmColoresRGB.txtColor.BackColor = RGB(Me.scbRojo.Value, Me.scbVerde.Value, Me.scbAzul)***

***Me.txtRojo.Value = Me.scbRojo.Value***

***Me.scb3Colores.BackColor = RGB(Me.scbRojo.Value, Me.scbVerde.Value, Me.scbAzul)***

##### ***End Sub***

##### ***Private Sub scbVerde\_Change()***

***frmColoresRGB.txtColor.BackColor = RGB(Me.scbRojo.Value, Me.scbVerde.Value, Me.scbAzul)***

***Me.txtVerde.Value = Me.scbVerde.Value***

***Me.scb3Colores.BackColor = RGB(Me.scbRojo.Value, Me.scbVerde.Value, Me.scbAzul)***

##### ***End Sub***

##### ***Private Sub scbAzul\_Change()***

***frmColoresRGB.txtColor.BackColor = RGB(Me.scbRojo.Value, Me.scbVerde.Value, Me.scbAzul)***

***Me.txtAzul.Value = Me.scbAzul.Value***

```
Me.scb3Colores.BackColor = RGB(Me.scbRojo.Value, Me.scbVerde.Value, Me.scbAzul)
End Sub
```

### ***frmTemperatura***

***Option Explicit***

```
Private Sub UserForm_Initialize()
Dim i As Integer
```

```
Application.ThisWorkbook.Sheets(Hoja1.Name).Activate
```

```
Cells(1, 1).Value = "CELSIUS"
Cells(1, 2).Value = "FARENHEIT"
Cells(1, 3).Value = "KELVIN"
```

```
For i = 1 To 100
Cells(i + 1, 1).Value = i - 21
Cells(i + 1, 2).NumberFormat = "#,##0.00"
Cells(i + 1, 2).Value = (9 / 5) * (Cells(i + 1, 1).Value) + 32
Cells(i + 1, 3).NumberFormat = "#,##0.00"
Cells(i + 1, 3).Value = Cells(i + 1, 1).Value + 273.15
Next i
```

```
Range("A:C").Select
Selection.Rows.AutoFit
Selection.Columns.AutoFit
```

```
Range("A1").Select
```

```
Me.Height = 280
Me.Width = 520
```

```
Me.txtEntero.Text = Me.scbTemperatura.Value
Me.txtEntero.Text = Format(CDec(Me.txtEntero.Text), "#,##0.00")
```

```
Me.txtDecimal.Text = Me.scbDecimales.Value / 100
Me.txtDecimal.Text = Format(CDec(Me.txtDecimal.Text), "#,##0.00")
```

```
Me.txtCelsius.Value = (CDec(Me.txtEntero.Value) + CDec(Me.txtDecimal.Value))
Me.txtCelsius.Text = Format(Me.txtCelsius.Text, "#,##0.00")
```

```
Me.txtFahrenheit.Value = (CDec((9 / 5) * Me.txtCelsius.Value + 32))
Me.txtFahrenheit.Text = Format(Me.txtFahrenheit.Text, "#,##0.00")
```

```
Me.txtKelvin.Value = (CDec(Me.txtCelsius.Value + 273.15))
Me.txtKelvin.Text = Format(Me.txtKelvin.Text, "#,##0.00")
```

```
Me.txtEntero.Visible = False
Me.txtDecimal.Visible = False
```

```
Me.txtEbullicion.Visible = False
Me.txtCongelacion.Visible = True
Me.txtCongelacion.Value = "CONGELACION"
```

```
Me.BackColor = RGB(0, 0, 255)
```

*End Sub*

*Private Sub scbTemperatura\_Change()*

*Me.txtEbullicion.Visible = False*

*Me.txtCongelacion.Visible = False*

*Me.txtEntero.Value = Me.scbTemperatura.Value*

*Me.txtEntero.Text = Format(CDec(Me.txtEntero.Text), "#,##0.00")*

*Me.txtCelsius.Value = (CDec(Me.txtEntero.Value) + CDec(Me.txtDecimal.Value))*

*Me.txtCelsius.Text = Format(Me.txtCelsius, "#,##0.00")*

*Me.txtFahrenheit.Value = (CDec((9 / 5) \* Me.txtCelsius.Value + 32))*

*Me.txtFahrenheit.Text = Format(Me.txtFahrenheit.Text, "#,##0.00")*

*Me.txtKelvin.Value = (CDec(Me.txtCelsius.Value + 273.15))*

*Me.txtKelvin.Text = Format(Me.txtKelvin.Text, "#,##0.00")*

*Select Case Me.txtCelsius.Value*

*Case Is < 15*

*Me.BackColor = RGB(0, 0, 255)*

*Case Is < 30*

*Me.BackColor = RGB(65, 0, 190)*

*Case Is < 60*

*Me.BackColor = RGB(130, 0, 125)*

*Case Is < 80*

*Me.BackColor = RGB(195, 0, 60)*

*Case Else*

*Me.BackColor = RGB(255, 0, 0)*

*End Select*

*If Me.txtCelsius.Value = 100 Then*

*Me.txtEbullicion.Visible = True*

*Me.txtEbullicion.Value = "EBULLICION"*

*ElseIf Me.txtCelsius.Value = 0 Then*

*Me.txtCongelacion.Visible = True*

*Me.txtCongelacion.Value = "CONGELACION"*

*End If*

*End Sub*

*Private Sub scbDecimales\_Change()*

*Me.txtEbullicion.Visible = False*

*Me.txtCongelacion.Visible = False*

*Me.txtDecimal.Text = Me.scbDecimales.Value / 100*

*Me.txtDecimal.Text = Format(CDec(Me.txtDecimal.Text), "#,##0.00")*

*Me.txtCelsius.Value = (CDec(Me.txtEntero.Value) + CDec(Me.txtDecimal.Value))*

*Me.txtCelsius.Text = Format(Me.txtCelsius, "#,##0.00")*

*Me.txtFahrenheit.Value = (CDec((9 / 5) \* Me.txtCelsius.Value + 32))*

*Me.txtFahrenheit.Text = Format(Me.txtFahrenheit.Text, "#,##0.00")*

*Me.txtKelvin.Value = (CDec(Me.txtCelsius.Value + 273.15))*

*Me.txtKelvin.Text = Format(Me.txtKelvin.Text, "#,##0.00")*

*Select Case Me.txtCelsius.Value*

*Case Is < 15*

*Me.BackColor = RGB(0, 0, 255)*

*Case Is < 30*

*Me.BackColor = RGB(65, 0, 190)*

*Case Is < 60*

*Me.BackColor = RGB(130, 0, 125)*

*Case Is < 80*

*Me.BackColor = RGB(195, 0, 60)*

*Case Else*

*Me.BackColor = RGB(255, 0, 0)*

*End Select*

*If Me.txtCelsius.Value = 100 Then*

*Me.txtEbullicion.Visible = True*

*Me.txtEbullicion.Value = "EBULLICION"*

*ElseIf Me.txtCelsius.Value = 0 Then*

*Me.txtCongelacion.Visible = True*

*Me.txtCongelacion.Value = "CONGELACION"*

*End If*

*End Sub*

*Private Sub txtEntero\_Change()*

*txtCelsius.Value = (CDec(scBDecimales.Value) / 100 + CDec(scBTemperatura.Value))*

*txtEntero.Text = Format(CDec(txtEntero.Text), "#,##0.00")*

*End Sub*

*Private Sub txtDecimal\_Change()*

*txtCelsius.Value = (CDec(scBDecimales.Value) / 100 + CDec(scBTemperatura.Value))*

*txtDecimal.Text = Format(CDec(txtDecimal.Text), "#,##0.00")*

*End Sub*

*Private Sub lblTituloTemperatura\_DblClick(ByVal Cancel As MSForms.ReturnBoolean)*

*frmTemperatura.Hide*

*End Sub*

### ***Solución 10.03***

A continuación, incluyo el Código asociado a este Ejercicio, dividido según cada Objeto.

#### ***frmCalcularCuantoFalta***

##### ***Option Explicit***

```
Private Sub UserForm_Initialize()  
Dim FechaFinal As Date
```

```
FechaFinal = Application.InputBox(Prompt:="Introduce la Fecha Final", Title:="Hoy es "  
& VBA.Date, Type:=1)
```

```
Me.Width = 370
```

```
Me.Height = 245
```

```
Me.lblEdad.Caption = "¿Cuánto falta para el " & FechaFinal & "?"
```

```
Me.txtFechaActual.Value = VBA.Date
```

```
End Sub
```

#### ***frmCalcularEdad***

##### ***Option Explicit***

```
Private Sub UserForm_Initialize()
```

```
Me.Width = 370
```

```
Me.Height = 245
```

```
Me.lblEdad.Caption = "¿Cuánto has vivido hasta el " & Date & "?"
```

```
End Sub
```

```
Private Sub cmdCalcularEdad_Click()  
Dim Hoja As Worksheet
```

```
Set Hoja = Worksheets("CalcularEdad")
```

```
Hoja.Activate
```

```
Me.txtFechaNacimiento.Value = Format(Me.txtFechaNacimiento.Value,  
"dd/mmmm/yyyy")
```

```
Me.txtAños.Value = VBA.DateDiff("yyyy", Me.txtFechaNacimiento.Value, Date)
```

```
Me.txtMeses.Value = VBA.DateDiff("m", Me.txtFechaNacimiento.Value, Date)
```

```
Me.txtDias.Value = Format(VBA.DateDiff("d", Me.txtFechaNacimiento.Value, Date),  
"#,##0")
```

```
Me.txtFechaNacimiento.Value = Format(Me.txtFechaNacimiento.Value, "dddd, dd  
mmmm, yyyy")
```

```
End Sub
```

#### ***Módulo1***

*Option Explicit*

*Sub Entre2Fechas()*

*Dim Variable As Variant, FechaInicial As Date*

*FechaInicial = InputBox("Introduce una Fecha Inicial")*

*Variable = DateDiff("d", FechaInicial, Now)*

*Variable = Format(Variable, "#,##0")*

*MsgBox "Entre el " & FechaInicial & " y el " & Date & " han transcurrido " & Variable  
& " días"*

*End Sub*

### ***Solución 10.04***

A continuación, incluyo el Código asociado a este Ejercicio, dividido según cada Objeto.

#### ***ThisWorkbook***

##### ***Option Explicit***

```
Private Sub Workbook_Open()
    frmBingo90.Show vbModeless 'Es lo mismo que abrir con 0
End Sub
```

#### ***frmBingo90***

##### ***Option Explicit***

```
Private Sub UserForm_Initialize()
    Dim Hoja As Worksheet
    Dim i As Integer, j As Integer
```

```
Set Hoja = Application.ThisWorkbook.Worksheets("Bingo90")
```

```
Hoja.Activate
```

```
Me.cmdNuevoCarton.SetFocus
```

```
Me.Height = 400
```

```
Me.Width = 800
```

```
End Sub
```

```
Private Sub cmdNuevoCarton_Click()
```

```
Dim Hoja As Worksheet
```

```
Dim i As Integer, j As Integer
```

```
Set Hoja = Application.ThisWorkbook.Worksheets("Bingo90")
```

```
Hoja.Activate
```

```
Módulo1.CrearCarton
```

```
For i = 1 To 3
```

```
For j = 1 To 9
```

```
Controls("txtCelda" & Format(i, "#,##00") & Format(j, "#,##00")).Value =  
Hoja.Cells(i, j).Value
```

```
If Hoja.Cells(i, j).Value = "" Then
```

```
Controls("txtCelda" & Format(i, "#,##00") & Format(j, "#,##00")).BackColor =  
&HC0C0C0
```

```
Controls("txtCelda" & Format(i, "#,##00") & Format(j, "#,##00")).SpecialEffect =  
2
```

```
Else:
```

```
Controls("txtCelda" & Format(i, "#,##00") & Format(j, "#,##00")).BackColor =  
&HFFFFFFF
```

```
Controls("txtCelda" & Format(i, "#,##00") & Format(j, "#,##00")).SpecialEffect =  
1
```

```
End If
```

```
Next j
```

*Next i*

*End Sub*

*Private Sub cmdSalir\_Click()*

*Unload Me*

*End Sub*

## **Funciones**

*Option Explicit*

*Function MatrizColumna(Columna As Integer, NumeroInicial As Integer, NumeroFinal As Integer) As Variant*

*Dim Hoja As Worksheet*

*Dim Recuento As Boolean*

*Dim i As Integer, j As Integer, Auxiliar As Integer*

*Dim MatrizAuxiliar(1 To 3) As Integer*

*Set Hoja = Application.ThisWorkbook.Worksheets("Bingo90")*

*Cells.Select*

*Selection.Interior.Color = xlNone*

*Do*

*Recuento = False*

*'Genera los números aleatorios que corresponden a la Columna en cuestión*

*For i = 1 To 3*

*MatrizAuxiliar(i) =*

*Application.WorksheetFunction.RandBetween(NumeroInicial, NumeroFinal)*

*Next*

*'Comprueba si hay algún dato repetido en la Matriz*

*For i = 1 To UBound(MatrizAuxiliar) - 1*

*For j = i + 1 To UBound(MatrizAuxiliar)*

*If MatrizAuxiliar(i) = MatrizAuxiliar(j) Then*

*Recuento = True*

*End If*

*Next j*

*Next i*

*Loop Until Recuento = False*

*'Ordena la Matriz de Menor a Mayor Valor por Método Burbuja*

*For i = 1 To UBound(MatrizAuxiliar) - 1*

*For j = i + 1 To UBound(MatrizAuxiliar)*

*If MatrizAuxiliar(i) > MatrizAuxiliar(j) Then*

*Auxiliar = MatrizAuxiliar(i)*

*MatrizAuxiliar(i) = MatrizAuxiliar(j)*

*MatrizAuxiliar(j) = Auxiliar*

*End If*

*Next j*

*Next i*

*For i = 1 To UBound(MatrizAuxiliar)*

*Cells(i, Columna).Value = MatrizAuxiliar(i)*



*Next i*

*End Function*

## **Módulo1**

*Option Explicit*

*Sub OrdenBurbuja()*

*Dim i As Integer, j As Integer, Auxiliar As Integer, MiMatriz As Variant, Recuento As Boolean, Iteraciones As Long, Limite As Integer*

*Hoja2.Activate*

*Iteraciones = 1*

*Limite = 10*

*ReDim MiMatriz(1 To Limite)*

*Do*

*Recuento = False*

*For i = 1 To UBound(MiMatriz)*

*MiMatriz(i) = Application.WorksheetFunction.RandBetween(1, 20)*

*Next i*

*Hoja2.Range(Cells(1, 1), Cells(1, UBound(MiMatriz))).Value = MiMatriz*

*'Localiza si hay números duplicados en la Matriz*

*For i = 1 To UBound(MiMatriz) - 1*

*For j = i + 1 To UBound(MiMatriz)*

*If MiMatriz(i) = MiMatriz(j) Then*

*Recuento = True*

*Iteraciones = Iteraciones + 1*

*End If*

*Next*

*Next*

*Loop Until Recuento = False*

*MsgBox "Sin Duplicados después de " & Iteraciones & " Iteraciones"*

*'Ordena los números de la Matriz por el Método de la burbuja*

*For i = 1 To UBound(MiMatriz) - 1*

*For j = i + 1 To UBound(MiMatriz)*

*If MiMatriz(i) > MiMatriz(j) Then*

*Auxiliar = MiMatriz(i)*

*MiMatriz(i) = MiMatriz(j)*

*MiMatriz(j) = Auxiliar*

*End If*

*Next*

*Next*

*Hoja2.Range(Cells(1, 1), Cells(1, UBound(MiMatriz))).Value = MiMatriz*

*Hoja2.Range("A1").Select*

```

End Sub
Sub CrearCarton()
Dim Columna As Integer, i As Integer, j As Integer, CeldaVacía As Integer, Contador As Integer
Dim MatrizAuxiliar, MatrizBingo
Dim ColumnaVacía As Boolean
Dim Hoja As Worksheet

Set Hoja = Application.ThisWorkbook.Worksheets("Bingo90")

Do

    'Creamos cada una de las Columnas del Cartón
    Call MatrizColumna(1, 1, 9)
    Call MatrizColumna(2, 10, 19)
    Call MatrizColumna(3, 20, 29)
    Call MatrizColumna(4, 30, 39)
    Call MatrizColumna(5, 40, 49)
    Call MatrizColumna(6, 50, 59)
    Call MatrizColumna(7, 60, 69)
    Call MatrizColumna(8, 70, 79)
    Call MatrizColumna(9, 80, 90)

    'Creamos la Matriz Inicial con los datos del Rango seleccionado
    Hoja.Range("A1").CurrentRegion.Select
    MatrizBingo = Selection

    'Eliminaremos 4 números al azar de cada fila
    CeldaVacía = 0
    For i = 1 To 3
        Contador = 1
        Do While Contador <= 4

            Columna = Application.RandBetween(1, 9)

            If MatrizBingo(i, Columna) <> 0 Then
                MatrizBingo(i, Columna) = 0
                Contador = Contador + 1
                CeldaVacía = CeldaVacía + 1
            End If
        Loop
    Next

    'Generamos el Cartón
    For i = 1 To 3
        For j = 1 To 9

            Cells(i, j).Value = MatrizBingo(i, j)

            If Cells(i, j).Value = 0 Then
                Cells(i, j).Interior.ColorIndex = 15
                Cells(i, j).Value = ""
            End If

        Next
    Next
Next

```

```
'Comprobamos si el Cartón es Válido (no podemos dejar una Columna Vacía)  
ColumnaVacía = False  
For j = 1 To 9  
    If Cells(1, j).Value = 0 And Cells(2, j).Value = 0 And Cells(3, j).Value = 0 Then  
        Hoja.Range(Cells(1, j), Cells(3, j)).Interior.ColorIndex = 36  
        ColumnaVacía = True  
    End If  
Next  
  
Loop While ColumnaVacía = True 'Se repite hasta que no haya ninguna Columna vacía  
  
'Creamos la Matriz Final con los datos del Rango seleccionado  
Hoja.Range("A1").CurrentRegion.Select  
MatrizBingo = Selection  
  
Range("A1").Select  
  
End Sub
```

### ***Solución 10.05***

A continuación, incluyo el Código asociado a este Ejercicio, dividido según cada Objeto.

#### ***UserForm1***

##### ***Option Explicit***

```
Private Sub UserForm_Initialize()
```

```
    Me.Height = 140
```

```
    Me.Width = 280
```

```
End Sub
```

```
Private Sub TextBox1_KeyPress(ByVal KeyAscii As MSForms.ReturnInteger)
```

```
    Select Case KeyAscii
```

```
        Case Is < vbKey0, Is > vbKey9
```

```
            Me.lblAdvertencia.Caption = "¡¡Sólo Números!!"
```

```
            KeyAscii = 0
```

```
            Beep
```

```
        Case Else
```

```
            Me.lblAdvertencia.Caption = ""
```

```
    End Select
```

```
End Sub
```

#### ***UserForm2***

##### ***Option Explicit***

```
Private Sub UserForm_Initialize()
```

```
    Me.Height = 160
```

```
    Me.Width = 290
```

```
End Sub
```

```
Private Sub cmdAleatorios_Click()
```

```
    Dim i, j As Integer, Duplicado As Boolean
```

```
    Hoja1.Activate
```

```
    For i = 1 To 15
```

```
        Cells(i, 1).Value = Application.WorksheetFunction.RandBetween(1, 50)
```

```
    Next i
```

```
    Do
```

```
        Duplicado = False
```

```
    'Localiza si hay números duplicados en la Matriz
```

```
    For i = 1 To 15 - 1
```

```
        For j = i + 1 To 15
```

```
            If Cells(i, 1).Value = Cells(j, 1).Value Then
```

```
                Cells(j, 1).Value = Application.WorksheetFunction.RandBetween(1, 50)
```

```
                Duplicado = True
```

```
            End If
```

```
        Next
```

```
    Next
```

*Loop Until Duplicado = False*

*Application.Range("A1").Sort key1:=Range("A1"), order1:=xlAscending, Header:=xlNo*

*Me.cmbAleatorio.Clear*

*For i = 1 To 15*

*If Left(Cells(i, 1).Value, 1) = 1 And Cells(i, 1).Value <> 1 Then*

*Me.cmbAleatorio.AddItem Cells(i, 1).Value*

*End If*

*Next*

*End Sub*

### ***UserForm3***

*Option Explicit*

*Private Sub UserForm\_Initialize()*

*Me.Height = 160*

*Me.Width = 360*

*End Sub*

*Private Sub cmdRellenarComboBox\_Click()*

*Dim i As Integer*

*Hoja2.Activate*

*Application.Range("A1").Sort key1:=Range("A1"), order1:=xlAscending, Header:=xlYes*

*Me.cmbListado.Clear*

*Range(Cells(2, 1), Cells(2, 1).End(xlDown)).Select*

*For i = 2 To Selection.Count + 1*

*Me.cmbListado.AddItem Cells(i, 1).Value*

*Next*

*End Sub*

*Private Sub cmbListado\_Change()*

*Me.lblProfesion.Caption = Cells(Me.cmbListado.ListIndex + 1, 4)*

*End Sub*

### ***UserForm4***

*Option Explicit*

*Private Sub UserForm\_Initialize()*

*Me.Height = 170*

*Me.Width = 345*

*End Sub*

*Private Sub cmdRellenarListBox\_Click()*

*Dim i As Integer*

*Hoja2.Activate*

*Application.Range("A1").Sort key1:=Range("A1"), order1:=xlAscending, Header:=xlYes*

*Me.lstListado.Clear*

*Range(Cells(2, 1), Cells(2, 1).End(xlDown)).Select*

*For i = 2 To Selection.Count + 1*

*Me.lstListado.AddItem Cells(i, 1).Value*

*Next*

*End Sub*

*Private Sub lstListado\_Change()*

*Me.lblProfesion.Caption = Cells(Me.lstListado.ListIndex + 1, 4)*

*End Sub*

***UserForm5***

*Option Explicit*

*Public MiMatriz*

*Private Sub UserForm\_Initialize()*

*Dim i As Integer*

*With Hoja3*

*.Activate*

*.Cells.Clear*

*End With*

*With Me*

*.Height = 380*

*.Width = 515*

*.txtFilas.Value = 2*

*.txtColumnas.Value = 2*

*.spbFila.Min = 2*

*.spbFila.Max = 30*

*.spbColumna.Min = 2*

*.spbColumna.Max = 30*

*.opbEntero.Value = True*

*End With*

*For i = 1 To 9*

*Controls("opt" & i).Enabled = False*

*Controls("opt" & i).Value = False*

*Next i*

*End Sub*

*Private Sub cmdAleatorio\_Click()*

*Dim i, j As Integer*

*With Me*

*.lblTitulo.Caption = ""*

*.lblResultado.Caption = ""*

*End With*

```

For i = 1 To 9
    Controls("opt" & i).Enabled = False
    Controls("opt" & i).Value = False
Next i

If Me.opbEntero.Value = True Then
    MiMatriz = Application.WorksheetFunction.RandArray(Me.txtFilas.Value,
Me.txtColumnas.Value, -500, 500, True)
Else:
    MiMatriz = Application.WorksheetFunction.RandArray(Me.txtFilas.Value,
Me.txtColumnas.Value, -500, 500, False)
End If

QuitarColor

For i = 1 To UBound(MiMatriz, 1)
    For j = 1 To UBound(MiMatriz, 2)
        Cells(i, j).Value = MiMatriz(i, j)
    Next j
Next i

If Me.opbEntero.Value = True Then
    Me.lblTitulo.Caption = "Matriz de " & UBound(MiMatriz, 1) & " x " &
UBound(MiMatriz, 2) & " Números Enteros"
    For i = 1 To UBound(MiMatriz, 1)
        For j = 1 To UBound(MiMatriz, 2)
            Cells(i, j).NumberFormat = "#,##0"
        Next j
    Next i
    For i = 1 To 9
        Controls("opt" & i).Enabled = True
    Next i
Else:
    Me.lblTitulo.Caption = "Matriz de " & UBound(MiMatriz, 1) & " x " &
UBound(MiMatriz, 2) & " Números Decimales"
    For i = 1 To UBound(MiMatriz, 1)
        For j = 1 To UBound(MiMatriz, 2)
            Cells(i, j).NumberFormat = "#,##0.000"
        Next j
    Next i
    For i = 3 To 9
        Controls("opt" & i).Enabled = True
    Next i
End If

Range("A1").CurrentRegion.Select

Selection.Columns.AutoFit
Selection.Rows.AutoFit
ActiveWindow.Zoom = True

Range("A1").Select

End Sub

Private Sub spbFila_Change()
    Me.txtFilas.Value = Me.spbFila.Value

```

*End Sub*

```
Private Sub spbColumna_Change()
    Me.txtColumnas.Value = Me.spbColumna.Value
End Sub
```

```
Private Sub opt1_Click() 'Pares
    Dim i, j, CuentaPar As Integer
```

```
    CuentaPar = 0
    QuitarColor
```

```
    For i = 1 To UBound(MiMatriz, 1)
        For j = 1 To UBound(MiMatriz, 2)
            If MiMatriz(i, j) Mod 2 = 0 Then
                Cells(i, j).Interior.Color = vbYellow
                CuentaPar = CuentaPar + 1
            End If
        Next j
    Next i
```

```
    Me.lblResultado.Caption = "La Matriz contiene " & CuentaPar & " Números Pares"
```

*End Sub*

```
Private Sub opt2_Click() 'ImPares
    Dim i, j, CuentaImPar As Integer
```

```
    CuentaImPar = 0
    QuitarColor
```

```
    For i = 1 To UBound(MiMatriz, 1)
        For j = 1 To UBound(MiMatriz, 2)
            If Not (MiMatriz(i, j) Mod 2 = 0) Then
                Cells(i, j).Interior.Color = vbGreen
                CuentaImPar = CuentaImPar + 1
            End If
        Next j
    Next i
```

```
    Me.lblResultado.Caption = "La Matriz contiene " & CuentaImPar & " Números ImPares"
```

*End Sub*

```
Private Sub opt3_Click() 'Positivos
    Dim i, j, Positivos As Integer
```

```
    Positivos = 0
    QuitarColor
```

```
    For i = 1 To UBound(MiMatriz, 1)
        For j = 1 To UBound(MiMatriz, 2)
            If MiMatriz(i, j) > 0 Then
                Cells(i, j).Interior.Color = vbCyan
                Positivos = Positivos + 1
            End If
        Next j
    Next i
```



*Next i*

*Me.lblResultado.Caption = "La Matriz contiene " & Positivos & " Números Positivos"*

*End Sub*

*Private Sub opt4\_Click() 'Negativos*

*Dim i, j, Negativos As Integer*

*Negativos = 0*

*QuitarColor*

*For i = 1 To UBound(MiMatriz, 1)*

*For j = 1 To UBound(MiMatriz, 2)*

*If MiMatriz(i, j) < 0 Then*

*Cells(i, j).Interior.Color = vbMagenta*

*Negativos = Negativos + 1*

*End If*

*Next j*

*Next i*

*Me.lblResultado.Caption = "La Matriz contiene " & Negativos & " Números Negativos"*

*End Sub*

*Private Sub opt5\_Click() 'Mínimo*

*Dim i, j As Integer*

*QuitarColor*

*For i = 1 To UBound(MiMatriz, 1)*

*For j = 1 To UBound(MiMatriz, 2)*

*If Cells(i, j).Value = Application.WorksheetFunction.Min(MiMatriz) Then*

*Cells(i, j).Interior.Color = vbMagenta*

*End If*

*Next j*

*Next i*

*Me.lblResultado.Caption = "El Valor Mínimo de la Matriz es " &*

*Format(Application.WorksheetFunction.Min(MiMatriz), "#,##0.000")*

*End Sub*

*Private Sub opt6\_Click() 'Máximo*

*Dim i, j As Integer*

*QuitarColor*

*For i = 1 To UBound(MiMatriz, 1)*

*For j = 1 To UBound(MiMatriz, 2)*

*If Cells(i, j).Value = Application.WorksheetFunction.Max(MiMatriz) Then*

*Cells(i, j).Interior.Color = vbRed*

*End If*

*Next j*

*Next i*

*Me.lblResultado.Caption = "El Valor Máximo de la Matriz es " &*

*Format(Application.WorksheetFunction.Max(MiMatriz), "#,##0.000")*

*End Sub*

*Private Sub opt7\_Click() 'Sumatoria*

*Dim i, j As Integer*

*Dim Suma As Double*

*Suma = 0*

*QuitarColor*

*For i = 1 To UBound(MiMatriz, 1)*

*For j = 1 To UBound(MiMatriz, 2)*

*Suma = Suma + Cells(i, j).Value*

*Next j*

*Next i*

*Me.lblResultado.Caption = "La Sumatoria de todos los Valores de la Matriz es " &  
Format(Suma, "#,##0.000")*

*End Sub*

*Private Sub opt8\_Click() 'Promedio*

*QuitarColor*

*Me.lblResultado.Caption = "El Valor Medio de la Matriz es " &  
Format(Application.WorksheetFunction.Average(MiMatriz), "#,##0.000")*

*End Sub*

*Private Sub opt9\_Click() 'Ceros*

*Dim i, j, Cero As Integer*

*Cero = 0*

*QuitarColor*

*For i = 1 To UBound(MiMatriz, 1)*

*For j = 1 To UBound(MiMatriz, 2)*

*If MiMatriz(i, j) = 0 Then*

*Cells(i, j).Interior.Color = vbCyan*

*Cero = Cero + 1*

*End If*

*Next j*

*Next i*

*If Cero > 0 Then*

*Me.lblResultado.Caption = "La Matriz contiene el Cero " & Cero & " Veces"*

*Else: Me.lblResultado.Caption = "La Matriz No contiene el Cero"*

*End If*

*End Sub*

*Private Sub cmbSalir\_Click()*

*Dim i, j As Integer*

*With Hoja3*

*.Activate*

*.Cells.Clear*

*End With*

*Unload Me*

*End Sub*

*Sub QuitarColor()*

*Dim i, j As Integer*

*For i = 1 To UBound(MiMatriz, 1)*

*For j = 1 To UBound(MiMatriz, 2)*

*Cells(i, j).Interior.Color = xlNone*

*Next j*

*Next i*

*End Sub*