**Module 5: Control Structures**

* 1. If…Then…Else

Executes a block of code if a condition is true; otherwise executes another block.

Sub CheckMarks()

Dim marks As Integer

marks = Range(“A2”).value

If marks >= 50 Then

MsgBox "Pass"

Else

MsgBox "Fail"

End If

End Sub

👉 If marks is 65 → “Pass”.

* 2. Select Case

Better when multiple conditions exist.

Sub GradeCheck()

Dim grade As String

grade = Range(“A6”).Value

Select Case grade

Case "A"

MsgBox "Excellent"

Case "B"

MsgBox "Good"

Case "C"

MsgBox "Average"

Case Else

MsgBox "Needs Improvement"

End Select

End Sub

* 3. For…Next Loop

Runs a block of code for a fixed number of times.

Sub PrintNumbers()

Dim i As Integer

For i = 1 To 5

Debug.Print "Number: " & i

Next i

End Sub

👉 Prints 1 to 5 in Immediate Window.

Example-2

Sub Button4\_Click()

Dim i As Integer

For i = 1 To 10

Cells(11 + i, 1).Value = "Number: " & i ' Column A

Next i

End Sub

* 4. Do While Loop

Repeats as long as the condition is True.

Sub DoWhileExample()

Dim i As Integer

i = 1

Do While i <= 5

Cells(11 + i, 1).Value ="Count: " & i

i = i + 1

Loop

End Sub

👉 Prints 1 to 5 in Immediate Window.

Example2

Sub Button6\_Click()

Dim i As Integer

Dim rowNum As Integer

i = 1

rowNum = 2 ' Start from row 2 (G2)

Do While i <= 5

Cells(rowNum, 7).Value = "Count: " & i ' Column 7 = G

i = i + 1

rowNum = rowNum + 1

Loop

End Sub

* 5. Do Until Loop

Repeats until the condition becomes True.

Sub Button7\_Click()

Dim i As Integer

i = 1

Do Until i > 5

Debug.Print "Value: " & i

i = i + 1

Loop

End Sub

* 6. Nested Loops (loop inside another loop)

Practical example: Printing a multiplication table.

Sub Button8\_Click()

Dim i As Integer, j As Integer

Dim rowOffset As Integer

rowOffset = 0

For i = 1 To 3

For j = 1 To 3

Range("G13").Offset(rowOffset, 0).Value = i & " x " & j & " = " & (i \* j)

rowOffset = rowOffset + 1

Next j

Next i

End Sub

👉 Prints a 3×3 multiplication table.

Real Life Example: Bank ATM Withdrawal

Sub ATMWithdrawal()

Dim balance As Double

Dim withdraw As Double

balance = Range(“B2”).Value

withdraw = Range(“B3”).Value

If withdraw <= balance Then

MsgBox "Transaction Successful. Remaining Balance: " & (balance - withdraw)

Else

MsgBox "Insufficient Balance!"

End If

End Sub

Real Life Example: Store Discount

Sub StoreDiscount\_Button1\_Click()

Dim amount As Double

amount = Range("G4").Value

If amount >= 1000 Then

MsgBox "You get 10% discount!"

Else

MsgBox "No discount available."

End If

End Sub