Learning Objectives:
1. Be able to use logic operators in If-blocks to make programming decisions.

1 - For...Next Loops
- **IF-Block:** A decision structure used in VBA function and sub procedures. This structure compares two pieces of information and performs one of two possible sets of instructions based on the result of the comparison. The syntax for the if-block is:

```
IF condition Then
    Statements if the condition is true
Else
    Statements if the condition is false
End If
```

The *condition* is a comparison between two things. The comparison operators are the same as in Excel: =, >, >=, <, <, <=, <>. The Else portion of the if-block is optional such that the structure can execute a series of commands only if a condition is true. The if-block must finish with End If otherwise an error will occur. If an if-block will only have one command to execute only if the condition is true, then the statement can be written in one line as follows:

```
If condition Then one_statement
```

**Give it a try:**
Write a sub procedure to get values from D1:D3 and multiply the first two together and compare that product to the third. If the product of the first two is less than the third number, set the second number to 6 otherwise, set the second number to the product of the first and last numbers.

```
Sub CompareIt1()
    a = [D1].Value
    b = [D2].Value
    c = [D3].Value
    If a * b < c Then
        b = 6
    Else
        b = c * a
    End If
    [A1].Value = b
End Sub
```

Exit the VBE and place values in D1:D3. Run the program and verify that it is working properly.
Give it a try:
Write a sub procedure to determine if the value is cell F10 is greater than or equal to 3 and less than or equal to 22. In cell F11, indicate “In Range [3, 22]” or “Out of Range [3, 22].”

Sub CompareIt2()
N = [F10].Value
If N >= 3 And N <= 22 Then
  [F11].Value = "In Range [3, 22]"
Else
  [F11].Value = "Out of Range [3, 22]"
End If
End Sub

Notice that this IF statement uses the And keyword. The statement will be True if both comparisons result in True. If one condition is False, the whole statement evaluates to False. The keyword Or is also available. If either choice it true, the statement evaluates to True. If none are true, the statement evaluates to False.

Exit the VBE and place a value in F10. Run the program and verify that it works. Try it for a bunch of different values in F10.

The following example is used to compute the gross pay for an employee of a company.

Homework:
Federal law requires hourly employees to be paid at a rate of 1.5 times their regular rate for all hours worked over 40 hours in a given week. Write a program that requests a person’s hourly rate and the number of hours worked in a week, then prints the gross pay for the person.

Flowchart:

Start
  Get Hours and Rate
  Are Hours>40?
    Yes
      Gross = 40 * Rate + 1.5 * Rate*(Hours-40)
    No
      Gross = Rate * Hours
  Print Gross Pay
  End

You should get in the habit of sketching out a flowchart before beginning to make your code.

Write a program called Payroll. The program will ask the user to input the rate and the number of hours. It will then compute the gross pay and display the value in a message box. If the user picks yes, the value of Hours, Rate, and Gross Pay will be placed in a worksheet with labels. Add your name, METBD 050, and the date as comments at the top of your procedure. Run the procedure and verify that it works properly. Print your procedure for submittal.