FIT 100 Word Association

- Please take 30 seconds to fill out the sheet on Variables.
- Write your section on the top of the paper-but NO NAMES
- Write down any words that come to mind concerning the topic
- Do not worry about looking up answers.

FIT 100 A Little Review: What is the Value of wicked, dude?

- Take out a piece of scratch paper. See if you can answer the questions below.

```
Dim wicked As Integer
Dim dude As Integer
dude = 5
wicked = 2
dude = wicked * 5          [ * means multiply ]
dude = dude + 3
wicked = dude + 1
```

- Questions:

1. What values do *dude* and *wicked* contain at the end of this code?

When A Decision Must Be Made:

Conditionals

FIT 100

Computers can be programmed to make decisions – that is, to choose one path to follow from many alternatives. Conditionals are the programming tool that implements this concept

FIT 100 The Reason to Have Conditionals:

- CONCEPT: computer programs execute all statements in the program in order unless the program is instructed to only execute certain statements under certain conditions
- For example:
  - If (something is true) Then
    [do this part of the program]
    End If

FIT 100 Operators:

- CONCEPT: Operators are used to *combine* expressions (logical operators) or to *compare* expressions (relational operators)
  - They are used in combination with values, or variables that contain values – both called operands when using operators - to complete the expression formulae
- Most programming languages have more logical operators than a pocket calculator
  - Operators like + taking 2 operands are called binary: a + b
  - Operators like – taking 1 operand are called unary: - a
- A very useful logical operator is concatenate, & in VB6, which connects two strings or variables together:
  - plural = "dog" & "s"

FIT 100 Operators

- CONCEPT: Relational operators are often used in conditional statements to create expressions that evaluate to either "true" or "false"
- The relational operators in VB6 are:

a < b	less than	a > b	greater than
a <= b	less than or equal to	a >= b	greater than or equal to
a = b	equal to	a < > b	not equal

FIT 100 Basic Conditional

- Use conditionals to test to see if a condition holds:
  - If temp < 32 Then
    state = "frozen"
    form = "ice"
    End If
- General form of basic conditional:

  If <T / F expression> Then
  <code statements>
  End If
- What this means:
  - First, the <T / F expression> is evaluated
  - If the outcome is true, then the statements that follow Then are performed
  - If the outcome is false, then the statements that follow Then are skipped

FIT 100 General Conditional Statement

- CONCEPT: When one set of statements must be performed for the true conditions and a different set of statements are needed for the false conditions, use the If-Then-Else statement
- General form

  If <T / F expression> Then
  <code statements>
  Else
  <code statements>
  End If

```
If sky = "clear" AND temp >70 Then
    clothing = "tank top"
Else
    clothing = "sweats"
End If
```

FIT 100 "Nested" If-Then-Else

- CONCEPT: An advantage of the general conditional is that it can be imbedded within another conditional

```
If  sky = "clear" AND  temp  > 70  Then
        clothing ="tank top"
                If  laundry ="clean"  Then
                        clothingColor="purple"
                End if
Else
        clothing = "sweats"
                If  ground = "muddy" Then
                        shoes = "boots"
                End if
End If
```

FIT 100 Exercise #1

- What does this print?

```
Dim x As Integer
x=10
  If x=1 Then
        Print "Wassup!"
  ElseIf x = 2 Then
        Print "Dude"
  Else
        Print "Mariners"
End If

Print "The End"
```


FIT 100 But, what if….?

- What does this print?

```
Dim x As Integer
x=10
  If x > 1 Then
        Print "Wassup!"
  ElseIf x > 2 Then
        Print "Dude"
  Else
        Print "Mariners"
End If

Print "The End"
```


FIT 100 Let's Move From Theory to Practice!

- We want to write a program that takes an integer as input and outputs whether or not the integer is a positive number
  - How should we get the user's input?
  - How do we tell if the input is positive or negative?
  - What should we do with an input of zero?
  - How should we output the "positive" or "negative" evaluation to the user?
    - Be Creative!
  - How do we get started?