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.

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

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.

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
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"

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

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>
    - Else
    - <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

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
  - End If
“Nested” If-Then-Else

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

```vbnet
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
```

Exercise #1

What does this print?

```vbnet
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"
```

But, what if….?  

What does this print?

```vbnet
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"
```

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?