Iteration: Infinite Loops

- CONCEPT: If you don’t properly change your iteration variable – so that the conditional eventually evaluates to false – then you will never exit the loop
- We call that situation an infinite loop
- The only of breaking out of an infinite loop is by “stopping” the program from outside of the program itself
- In VB6, press the CTRL + BREAK keys to end an infinite loop

Summary Of Iteration

- Iteration is useful when you want the program to repeat a sequence of steps
- Iteration requires:
  - Loop Body – the steps to be repeated
  - Stop Condition – a way to exit the loop
- When the loop ends, execution continues with the regular sequence of program statements
- VB6, like most languages, has several iteration statements – we have introduced you to one, the Do-While
- CONCEPT: Although other control structures exist, with conditionals (If-Then-Else) and iteration (Do-While) you can do any programming!!
Yes, But Is it Art?

Computers can be programmed to produce graphics, but are these graphics art? Can computers be creative?

Discussion Questions

Given what you now know about how computers work:

❖ Can a computer be creative? Why?
❖ Can a computer create art? Why?

❖ Take out a piece of paper. Write your name(s) on it.
❖ Discuss these two questions with the person to your right or left. Write down two or three ideas that arise in your discussion about each question.
❖ (I’ll collect these at the end of class today. These won’t be graded.)
Did a Computer Do This?

Or This? (2)
Or This? (3)

Or This? (4)
Or This? (5)

Or This? (6)
Or This? (7)

Or This? (8)

http://www.netlabs.net/hp/richieb/java/Mondrian.htm
Henri Matisse

AARON (a robot)
FIT 100 AARON (a robot) (5)

FIT 100 Piet Mondrian (6)
Piet Mondrian

A Java Applet by Richie

http://www.netlabs.net/hp/richieb/java/Mondrian.htm
Project 3

- Your challenge is to explore the question of computation and creativity.
- Part I, Due Friday, May 11, at 12 PM, noon
  - Graphical program with the following elements:
    + A procedure with 2 or more parameters
    + A procedure that calls another procedure
    + A procedure that is called more than 5 times
    + A Do While Loop
    + A random number

Project 3

- Part II, Due Friday, May 18, at 12 PM, noon
  - Graphical program with that is visually pleasing (cool!)
    + It may be an extension of Part I or something entirely new
    + It may contain some or all of the technical elements you used in Part I
  - A 2-3 paragraph discussion of your experience expressing creativity through computation
An example of what you might do for Project 3.

What You Already Know...

- How to:
  - Write procedures
  - Write procedures that use parameters
  - Write a procedure that calls another procedure
  - Use iteration (Do-While Loop)
    - Which can call a procedure in the body of the loop
  - Use conditionals (If-Then-Else)
What You Need to Learn

❖ How to:
  ❏ Color
  ❏ Make shapes (lines, boxes, rectangles, circles)
  ❏ Color in shapes
  ❏ Use a random number
  ❏ Convey a sense of motion …