

Logo Activity 9 Infinite Looping

Looping is a powerful idea in programming. Computers can do repetitive tasks endlessly without tiring. You might have a design that you want to appear on the page until the user stops the program. There are many examples in real life of infinite loops. To begin, you will learn to create loops that go on forever.

The following looping structure creates a

```
TO DRAW
  SETPC RANDOM 16
  FD 200
  RIGHT 177
  DRAW <---- Placing the name of the procedure at the bottom creates a loop.
END
```

Now when you type DRAW, the effect goes on and on. To stop this procedure press <Halt> button in the Commander window.

To help you understand this process we will follow the commands one step at a time. This method of analyzing a program is called hand processing.

1. Procedure DRAW is called.
2. A random pen color is assigned.
3. The turtle goes forward 200 "turtle steps".
4. The turtle turns right 177 degrees.
5. Procedure DRAW is called -- since this is the same as step 1, the processing starts over again.

When a procedure has a call to itself; it is said to be recursive.

Here's another idea to try. Suppose you want to leave a message on the computer screen.

```
TO MESSAGE
  PRINT [WHAT IS GOING ON HERE!]
  PRINT []
  WAIT 10
  MESSAGE
END
```

Now, if you type MESSAGE, the message will continue to appear over and over until someone presses <HALT>. You will notice that the WAIT command is used to slow the loop processing down since it happens at a very fast rate. The WAIT command is a procedure used to kill a little time.

“How To” Movie

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Logo Assignment #9

Name: _____

- 1) Suppose you want to leave a message on the computer screen as a reminder to people that your computer is being used when you step away from your work station. Create a screen saver that places the message "Keep your hands off the keys!" on the screen. You will use the LABEL command to put the message in the graphics window. You will place the turtle at a random x and y location before displaying the message to the screen. Once the message appears you will wipe the screen CLEAN and place the same message at a new random location. This message will appear over and over. Be sure that you keep the message on the screen. The program will be terminated only when a user presses <HALT>. The following steps will get you started:
 1. Create a MESSAGE procedure
 2. Clear the screen
 3. Pick up the pen
 4. Set the cursor to a random position on the screen (x between -500 and 500, y between -300 and 300).
 5. Set the direction to display the text.
 6. Put the pen down
 7. Display the text using the LABEL command
 8. Create a pause on the screen using WAIT
 9. Loop back around to the top by calling MESSAGE

You will receive full credit by copying the ENTIRE PROCEDURE below: