Program #1: Loops App Explanation

The *int i;* code initializes the variable *i* as an integer. The *for* loop allows the program to loop for a certain number of times. The *i=1* code sets *i* equal to 1. The *i<5000* code tells the for loop to only repeat while *i* is less than 5000. The *i=2\*i+1* code changes the value of *i* after each loop through the for loop. The *System.out.println()* statement displays the words in quotation marks as well as the value of the variable *i*, which is concatenated to the string. This is the println() statement not the print statement, so there will be a new line every time the for loop iterates. The text will not be displayed in one continuous line. The *System.out.println()* statement is used for every iteration of the for loop. The first time through the for loop, the program will display “Count is: 1.” The second time through the for loop, the program will change *i* from 1 to 3 because of the code *i=2\*i+1*. Thus, the program will display “Count is: 3.” This process will keep happening until *i* is no longer less than 5000. When this happens, the for loop will stop, and the program will end. Here is the full output of what the program will display:

Count is: 1

Count is: 3

Count is: 7

Count is: 15

Count is: 31

Count is: 63

Count is: 127

Count is: 255

Count is: 511

Count is: 1023

Count is: 2047

Count is: 4095