# Module 4—Lab 4: Conditionals and Loops

The following exercises are intended to help you apply and practise the concepts introduced in this module. This work is not submitted for marks. The questions are from the end of the chapter in your text under the “Exercises” or “Programming Projects” headings.

Try to answer the questions on paper first. Then insert the code in a Java program to see the actual result.

1. What is wrong with the following code fragment? Will this code compile if it is part of an otherwise valid program? Explain.

if (length = MIN\_LENGTH)  
 System.out.println ("The length is minimal

No, the = is an operand, not a coparitor. == is required.

1. What output is produced by the following code fragment?

int num = 87, max = 25;  
if (num >= max\*2)  
 System.out.println ("apple");  
 System.out.println ("orange");  
System.out.println ("pear");

Apple

Orange

pear

1. What output is produced by the following code fragment?

int limit = 100, num1 = 15, num2 = 40;  
if (limit <= limit)  
{  
 if (num1 == num2)  
 System.out.println ("lemon");  
 System.out.println ("lime");  
}  
System.out.println ("grape");

Lime

grape

1. What output is produced by the following code fragment?

int num = 0, max = 20;  
while (num < max)  
{  
 System.out.println (num);  
 num += 4;  
}

0, 3,7,10,13,16,19

1. What output is produced by the following code fragment?

for (int num = 0; num <= 200; num +=2)  
 System.out.println (num)

Even numbers from 0 to 200

1. Transform the following while loop into an equivalent do loop. (Make sure it produces the same output.)

int num = 1;  
while (num < 20)  
{  
 num++;  
 System.out.println (num);  
}

int num = 1;

do

{  
 num++;  
 System.out.println (num);  
}

While (num <20);

1. Transform the while loop from Exercise 4.11 into an equivalent for loop. (Make sure it produces the same output.)

For( int num = 1, num<20, num++)

{

num++;  
 System.out.println (num);

}

1. Write a do loop that verifies that the user enters an even integer value.

Scanner scan = new Scanner(System.in);

System.out.print(“Enter even number:”);

String data = scan.nextLine();

do

{

System.out.println(“Number not even, re-enter an even number:”;

String.data = scan.nextLine();

}

While (data%2 != 0)

1. Write a for loop to print the multiples of 3 from 300 down to 3

For (int data = 300, data >=3, data - 3)

{

System.out.println(data)

}

1. Write a code fragment that determines and prints the number of times the character ‘z’ appears in a String object called name.
2. String name = "Kylez Mathesonz";  
   int count = 0;  
     
   while(name.indexOf('z')>0)  
   {  
    count++;  
    name = name.substring(name.indexOf('z')+1);  
   }  
   System.*out*.println(count);
3. String name = "zuluzardoz"; // produces 3
4. int countz = 0;
5. for (int i = 0; i < name.length(); i++)
6. if (name.charAt(i) == 'z')
7. countz++;
8. System.out.println (name + " has " + countz);
9. Write a code fragment that prints the characters stored in a String object called str backward.
10. String str = "KyleMatheson";  
      
    for (int i = str.length()-1; i >= 0; i--)  
    {  
     System.*out*.print(str.charAt(i));  
      
    }
11. String str = "lewis";
12. for (int i = str.length()-1; i >= 0; i--)
13. System.out.print(str.charAt(i));
14. System.out.println ();

Review your work by comparing with the solutions sheet.