King Saud University
College of Computer & Information Science
CSC111 – Tutorial 05

Expressions, operators, conditional statement

Objectives:
After completing the following exercises, students will be able to:

- express logical statements as correct Java expressions
- use the Java *if-then* statement
- use the Java *if-else* statement
- rewrite *if-else* statements as two independent *if-then* statements

Exercise 1:

Convert each of the following phrases to a Java boolean expression as in the first example:

English expression	Java expression
1 whether x is positive	`x > 0`
2 whether x is a multiple of y	
3 whether x is between -2 and 13	
4 whether the difference between x and y is less than 5	
5 whether x is not between 5 and 27	
6 whether x has more than 4 digits	
7 whether x has exactly 6 digits	

Exercise 2:

Write a Java program that prompts the user to enter the width and the length for a rectangle, then to enter the width and the length for a second rectangle, and finally it displays a message stating which rectangle (the first or the second) has greater area. (Note: there are three cases)

Exercise 3:

Write a Java program that prompts the user to enter two positive integers, then displays whether the first is a multiple of the second or not.

Exercise 4:

Rewrite the following Java program replacing *if-else* statement with *if-then* statements.

```
import java.util.Scanner;

class Ex4 {

 public static void main(String[] args) {

   Scanner SC = new Scanner(System.in);

   System.out.print(”Please enter your age: );
   int age = SC.nextInt();

   if (age >= 13 && age <= 60)
     System.out.println(”You can proceed.”);
   else
     System.out.println(”Your age does not qualify you to procees”);
 }

}
```

Exercise 5:
Trace the following two code fragments for a = +3, a = 0, a = -5, then tell whether these fragments are equivalent or not.

```
if (a < 0) {
  System.out.println("Negative");
  a = a * -1;
  System.out.println("Absolute
                  value is: " + a);
}
else {
  System.out.println("Positive");
  System.out.println("Absolute
                  value is: " + a);
}
```

```
if (a < 0) {
 System.out.println("Negative");
 a = a * -1;
 System.out.println("Absolute
                  value is: " + a);
}
if (a >= 0) {
 System.out.println("Positive");
 System.out.println("Absolute
                  value is: " + a);
}
```