Java Exercise 2:
Control Statements

Duration: 120 minutes
Instructions: Thoroughly read what is asked on items *1 to 5*. Answer in a separate sheet.

1. **Application**. Write four different Java statements that each add 1 to integer variable x.
   1. x= x+1
   2. x++
   3. x += 1
   4.++x;
2. **Application**. Write Java statements to accomplish each of the following tasks:
   a. Use one statement to assign the sum of x and y to z, then increment x by
      z = (x++) + y;
   b. Test whether variable count is greater than 10. If it is, print "Count is greater than 10". if(count > 10){
      System.out.println”Count is greater than 10;
      }
   c. Use one statement to decrement the variable x by 1, then subtract it from variable total and store the result in variable total.
      Variable_total -= x--;
   d. Use two ways to write a statement that will find the remainder q of q and divisor using modulo. int q %= divisor; int q = findRemainder(q, divisor);

3. **Understanding**. Determine the values of the variables (`product` and `x`) in the statement `product *= x++;` after the calculation is performed. Assume that all variables are type int and initially have the value 5.

   int product = 5 int
   x = 5

   product *= x++
   5 *=5++
   5* 5 = 25; multiply 5*5 first
   X++ which is 25++ equals to 26

4. **Evaluation**. Assume that i=1, j=2, k=3 and m=2. What does each of the following statements print?
   a. System.out.println(i == 1); true
   b. System.out.println(j == 3); false
   c. System.out.println((i >= 1) && (j < 4)); true

d. System.out.println((m <= 99) & (k < m)); false

e. System.out.println((j >= i) || (k == m)); true : in Java || it will get the result first of first set of Boolean (j>=i) then if it is true whatever the result is of next set of Boolean are disregarded. And base from the help of Kurt-san it is called Short circuit.

f. System.out.println((k+m== k)); false

g. System.out.println(!(k > m)); False

5. **Application**. Write a Java statement or a set of Java statements to accomplish each of the following tasks:

a. Sum the odd integers between 1 and 99, using a for statement. Assume that the integer variables sum and count have been declared.

```
int sum = 0
for (int count = 2; count < 99; count++){
sum += count;
}
```

b. Calculate the value of 2.5 raised to the power of 3, using the pow method

```
double result = Math.pow(2.5,3);
Result: 15.265
```

c. Print the integers from 1 to 20, using a while loop and the counter variable

i. Assume that the variable i has been declared, but not initialized. Print only five integers per line. [Hint: Use the calculation i%5. When the value of this expression is 0, print a newline character; otherwise, print a tab character. Assume that this code is an application. Use the System.out.println() method to output the newline character, and use the System.out.print('\t') method to output the tab character.]

```
int i = 1;

while (i <= 20){
 System.out.println (i);  if(I % 5
==                                  0){
        System.out.println();
}else{
        System.out.println ('\t')
}  i++;
}
```

d. Repeat part (c), using a for statement.

```
for (int i = 1; i <= 20;
i++){
        System.out.println(i);
```

```
if (I % 5 == 0){                    System.out.println();
                    }else{
            System.out.println('\t');
                        }
}
```

6. **The Twelve Days of Christmas.** Write a Java application that uses repetition and switch statements to print the song "The Twelve Days of Christmas." One switch statement should be used to print the day ("first," "second," and so on). A separate switch statement should be used to print the remainder of each verse.

Visit the website Twelve Days of Christmas - Wikipedia for the lyrics of the song. **Project Filename:** *<FamilyName>_Exercise2*