**CM 1601 Programming Fundamentals**

**Tutorial 2**

1. Predict the output of the given codes. Then type the following programs, compile, execute and compare the actual results with the predicted results.

class Output{

public static void main(String[] args){

int a, b;

a = 65;

b = 78;

System.out.println(2 + 3.0);

System.out.println(2 + 3);

System.out.println(9.0 / 4);

System.out.println(9 / 4);

System.out.print("Hello there.\n"); System.out.println(7);

System.out.println(3+5); System.out.print("3+5"); System.out.println(); System.out.println(2+3\*6);

System.out.println("a"); System.out.println(a); System.out.println(b);

}

}

class ParsingStrings{

public static void main(String[] args){

String str1 = "-10000";

String str2 = "50";

int intNum;

double decimalNum;

intNum = Integer.parseInt(str1);

decimalNum = Double.parseDouble(str2);

System.out.println("str1 = " + str1);

System.out.println("str2 = " + str2);

System.out.println("intNum = " + intNum);

System.out.println("decimalNum = " + decimalNum);

System.out.println(intNum/decimalNum);

System.out.println(Integer.parseInt("6543")

+ Double.parseDouble("-50.55"));

}

}

1. Write a distance converter for marathon as below.
2. Declare two integer variables call **miles** and **yards** and initialize them with values as you wish (Example: miles to 26 and yards to 385).
3. Declare a double variable call **km** for kilometers.
4. Write an expression to calculate kilometers from miles and yards.

*Note: One mile is 1.609 kilometers and there are 1760.0 yards in a mile*

1. Save the result of the expression in the variable **km** and print in on to the console.
2. Now show how to improve the above code by using constants for the fixed parameters. What is the Java keyword that introduces a constant?
3. Write a program to extract the digits of a given integer and print the individual numbers.

Hint: you could make use of the % and / operators

e.g. int n = 5814 then 5, 8, 1, 4 should be printed separately

1. Write a program to input an integer as a command-line argument, which represents a temperature on the Celsius scale and then computes and prints its equaling Fahrenheit value in decimal form.

Use the conversion formula F=1.8 \*C +32

Hint: use **Integer.parseInt()**

Usage: **int k = Integer.parseInt(<string variable>);**

1. Write a program to calculate the volume of a cube when height, width and length are input through command-line arguments as double values.

Hint: use **Double.parseDouble()**

Usage:  **double k = Double. parseDouble(<string>);**

1. Write a program to generate five random numbers and print them.