Pharos University in Alexandria
Faculty of Computer Science &
Artificial Intelligence
Level 1 – Semester 1 – Fall 2021/2022

Programming 1
Course Code: CS 103
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Lab (7)
Week 10

1. **Write a Java Program to compute the area of a given classroom.**
   Try the following different method headers.
   a) public static **void** calArea1( )
   b) public static **void** calArea2(**float** length1 , **float** width1)
   c) public static **float** calArea3(**float** length2 , **float** width2)

2. **Display the first 50 positive numbers divisible by 3 and 5.**
   Complete the following codes for solving the problem. Discuss the difference.

a)
```
public class Main1{
  public static int calc1(int n , int c ) {
      //write your code here

   }
   public static void main(String[] args) {
     int n=1;//starting the testing by 1
     int c1=0;//counter
     while (c1<=50){
       //write the calling of calc method
       n++;
     }//while end
   }//main end
}//class end
```

b)
```
public class Main2{
    public static void calc2(      ) {
        //write your code here

    }
    public static void main(String[] args) {
     //write the calling of calc method

    }//main end
}//class end
```

3. **Write a method that computes the following sum :**
   sum = 1/1 + 1/2 + 1/3 + 1/4 + 1/5 + ... + 1/N
   N will be an integer limit that the user enters .
   For example:
   Enter N
   4
   Sum is: 2.08333333333

Assignments:

4. **Write a method to add the digits of a given positive number.**
   For example:
   332 → 3+3+2=8
   4025→ 4+2+5

5. **Consider the following formula for body mass index (BMI):**

$$BMI = \frac{weight}{height^2} \times 703$$

BMI	Weight class
below 18.5	underweight
18.5 - 24.9	normal
25.0 - 29.9	overweight
30.0 and up	obese

   a) **Write a method "calcBMI" to print a suitable message for a user due to the above table.**
   For example

```
Enter a person's information:
height (in inches)? 70.0
weight (in pounds)? 194.25
Person  BMI = 27.868928571428572
Overweight
```

   b) **Write a Java Program1 to use "calcBMI" method in question (a) to accept N number of persons information.**

   c) **Write a Java Program2 to use "calcBMI" method in question (a) to accept persons information until a negative height or a negative weight is entered.**