**CSE 215L: Programming Language II Lab**
**Section: 7**
Fall 2020

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**Methods:** A collection of statements grouped together to accomplish an operation.
**Syntax:**

```
modifier returnType methodName(parameter list) {
        // method body
}
```

*modifier*: access type of the method and is optional.
*returnType*: data type of the value returned by the method (*void* if method does not return any value)
*methodName*: name of the method.
*parameter list*: a comma-delimited list of input parameters for the method preceded by their data types. If there is no parameter, there should be empty parentheses.
**method signature:

**Example1 :** Write a method that will swap two integer numbers.

```
1  package classExamples;
2  import java.util.Scanner;
3
4  public class Lab4 {
5      public static void main(String[] args) {
6
7          System.out.println("Enter two numbers:");
8
9          Scanner input = new Scanner(System.in);
10         int number1 = input.nextInt(), number2 = input.nextInt();
11
12         swap(number1, number2);
13     }
14
15     public static void swap(int n1, int n2) {
16         int temp = n1;
17         n1 = n2;
18         n2 = temp;
19
20         System.out.println("numbers after swapping: " + n1 + " " + n2);
21     }
22 }
```

```
Problems  Console
<terminated> Lab4 [Java Application] C:\Program Files\Java\jdk-11.0.9\bin\javaw.exe  (Nov 8, 2020, 2:42:32 AM – 2:42:40 AM)
Enter two numbers:
45 87
numbers after swapping: 87 45
```

**Example2:** Write a program that will print the first 100 prime numbers.

```
1  package classExamples;
2
3  public class Lab4 {
4      public static void main(String[] args) {
5          int number = 2, count = 0;
6          System.out.println("The firat 100 prime numbers:");
7
8          while(count <= 100) {
9              boolean status = isPrime(number);
10
11             if(status) {
12                 System.out.println(count + ". " + number);
13                 count++;
14             }
15             number++;
16         }
17     }
18
19     public static boolean isPrime(int n){
20         boolean status = true;
21         for(int i=2; i<=Math.sqrt(n); i++) {
22             if(n%i == 0) {
23                 status = false;
24                 break;
25             }
26         }
27         return status;
28     }
29 }
```

**Method Overloading**

When a class has two or more methods with the same name but different parameters, it is known as method overloading.

```java
package classExamples;

public class Lab4 {
    public static void main(String[] args) {
        int a = 11;
        int b = 6;
        double c = 7.3;
        double d = 9.4;
        int result1 = maxFunction(a, b);

        // same function name with different parameters
        double result2 = maxFunction(c, d);
        System.out.println("Max Value = " + result1);
        System.out.println("Max Value = " + result2);
    }

      // for integer
      public static int maxFunction(int n1, int n2) {
         if (n1 > n2)
            return n1;
         else
            return n2;
      }

      // for double
      public static double maxFunction(double n1, double n2) {
          if (n1 > n2)
                return n1;
          else
                return n2;
      }
}
```

```
Console
<terminated> Lab4 [Java Application] C:\Program Files\Java\jdk-11.0.9\bin\javaw.exe  (Nov 8, 2020, 3:50:23 AM – 3:50:25 AM)
Max Value = 11
Max Value = 9.4
```