Assignment 2.1

1. **Write a java code with the class named 'acad' and a method 'main'. Hard Code the program with two integers and print the sum of those two.**

```
public class acad{
	public static void main(String args[]) {
		int a = 10;
		int b = 15;
		System.out.println(a + b);
	}
}
```

```
PS C:\Users\majhi\Desktop\Assignment_2.1> javac .\acad.java
PS C:\Users\majhi\Desktop\Assignment_2.1> java acad
25
PS C:\Users\majhi\Desktop\Assignment_2.1>
```

2. **Rewrite the above code, where, inputs are provided by the user at runtime and the output is printed.**

```
public class acad{
	public static void main(String args[]) {
		int a = Integer.parseInt(args[0]);
		int b = Integer.parseInt(args[1]);
		System.out.println(a + b);
	}
}
```

```
PS C:\Users\majhi\Desktop\Assignment_2.1> javac .\acad.java
PS C:\Users\majhi\Desktop\Assignment_2.1> java acad 60 40
100
PS C:\Users\majhi\Desktop\Assignment_2.1>
```

3. **Write a program with method name sum() that accepts two parameters from user and print the sum of two numbers. Output format should be as:**

First number is:
Second number is:
Sum is:

```java
public class acad{
	public static void main(String args[]) {
		int a = Integer.parseInt(args[0]);
		int b = Integer.parseInt(args[1]);
		sum(a,b);
	}

	public static void sum(int a, int b) {
		System.out.println("First number is: " + a);
		System.out.println("Second number is :" + b);
		System.out.println("Sum is: " + (a + b));
	}
}
```

```
PS C:\Users\majhi\Desktop\Assignment_2.1> javac .\acad.java
PS C:\Users\majhi\Desktop\Assignment_2.1> java acad 20 30
First number is: 20
Second number is :30
Sum is: 50
PS C:\Users\majhi\Desktop\Assignment_2.1>
```

4. **Write a program to accepts two numbers from stdin and find all the odd as well as even numbers present in between them.**

```java
import java.io.IOException;

public class acad{
	public static void main(String args[]) throws IOException {
		System.out.println("Enter first number : ");
		int a = Integer.parseInt(System.console().readLine());
		System.out.println("Enter second number : ");
		int b = Integer.parseInt(System.console().readLine());

		int min,max;

		if(a <= b) {
			min = a;
			max = b;
		}
		else {
			min = b;
			max = a;
		}

		System.out.println("Even Numbers: ");
		for(int i=min;i<=max;i++){
			if(i % 2 == 0) {
				System.out.println(i);
			}
		}
```

```
            System.out.println("Odd Numbers: ");
            for(int i=min;i<=max;i++){
                  if(i % 2 != 0) {
                        System.out.println(i);
                  }
            }
      }
}
```

```
PS C:\Users\majhi\Desktop\Assignment_2.1> javac .\acad.java
PS C:\Users\majhi\Desktop\Assignment_2.1> java acad
Enter first number :
56
Enter second number :
63
Even Numbers:
56
58
60
62
Odd Numbers:
57
59
61
63
PS C:\Users\majhi\Desktop\Assignment_2.1> java acad
Enter first number :
88
Enter second number :
76
Even Numbers:
76
78
80
82
84
86
88
Odd Numbers:
77
79
81
83
85
87
PS C:\Users\majhi\Desktop\Assignment_2.1>
```

5. **Joe is scared to go to school. When her dad asked the reason, joe said she is unable to complete the task given by her teacher. The task was to find the "first 10 multiples" of the number entered from stdin . Eg:**

Input: 3

O/P:

3 x 1 = 3

3 x 2 = 6

.

.

.

3 x 10 = 30

```
import java.io.IOException;

public class acad{
	public static void main(String args[]) throws IOException {
		System.out.println("Enter number : ");
		int num = Integer.parseInt(System.console().readLine());

		for(int i=1;i<=10;i++){
			System.out.println(num + " X " + i + " = " + (num*i));
		}

	}
}
```

```
PS C:\Users\majhi\Desktop\Assignment_2.1> javac .\acad.java
PS C:\Users\majhi\Desktop\Assignment_2.1> java acad
Enter number :
4
4 X 1 = 4
4 X 2 = 8
4 X 3 = 12
4 X 4 = 16
4 X 5 = 20
4 X 6 = 24
4 X 7 = 28
4 X 8 = 32
4 X 9 = 36
4 X 10 = 40
PS C:\Users\majhi\Desktop\Assignment_2.1>
```

6. **Write a program consisting method sum() and demonstrate the concept of method overloading using this method.**

```java
import java.io.IOException;

public class acad{
	public static void main(String args[]) throws IOException {
		System.out.println(sum(10,45));
		System.out.println(sum("Anupam"));
	}

	public static int sum(int a, int b) {
		return (a+b);
	}

	public static String sum(String name) {
		return ("Hello "+ name);
	}
}
```

```
PS C:\Users\majhi\Desktop\Assignment_2.1> javac .\acad.java
PS C:\Users\majhi\Desktop\Assignment_2.1> java acad
55
Hello Anupam
PS C:\Users\majhi\Desktop\Assignment_2.1>
```

7. **Can you overload a method with same return type? Explain your answer with proper logic.**

It is not mandatory for an overloaded method to have different return types.

Overload can be achieved by having same return type but different number of arguments. It can also be done with even different argument types and orders.

The logic behind this is that the arguments being passed to the overloaded function can be of different types and hence have a different behaviour altogether. Though the return can still be of same type.

8. **Write a program in java using Arrays, that sorts the element in decreasing order.**

```java
import java.io.IOException;

public class acad{
	public static void main(String args[]) throws IOException {
		int[] input_array = { 34, 5, 23, 77, 2, 8, 16, 99, 0, 69 };
	  bubble_sort(input_array);
	}
```

```
        public static void bubble_sort(int[] myArray) {

               for(int i=0; i < myArray.length; i++) {
                      for(int j=0; j < myArray.length - i - 1; j++ ) {
                             if(myArray[j] < myArray[j+1]) {
                                    int x = myArray[j];
                                    myArray[j] = myArray[j+1];
                                    myArray[j+1] = x;
                             }
                      }
               }

               for (int k = 0; k < myArray.length; k++) {
                    System.out.print(myArray[k] + " ");
          }
        }
}
```

```
PS C:\Users\majhi\Desktop\Assignment_2.1> javac .\acad.java
PS C:\Users\majhi\Desktop\Assignment_2.1> java acad
99 77 69 34 23 16 8 5 2 0
PS C:\Users\majhi\Desktop\Assignment_2.1>
```