Experiment No. 4
Implement a program on method and constructor overloading.
Date of Performance:
Date of Submission:

Aim: Implement a program on method and constructor overloading.

Objective: To use concept of method overloading in a java program to create a class with same function name with different number of parameters.

Theory:

Method Overloading is a feature that allows a class to have more than one method having the same name, if their argument lists are different. It is similar to constructor overloading in Java, that allows a class to have more than one constructor having different argument lists.

Example: This example to show how method overloading is done by having different number of parameters for the same method name.

```
Class DisplayOverloading
{
   public void disp(char c)
   {
      System.out.println(c);
   }
   public void disp(char c, int num)
   {
      System.out.println(c + " "+num);
   }
}
Class Sample
{
  Public static void main(String args[])
  {
     DisplayOverloading obj = new DisplayOverloading();
     Obj.disp('a');
     Obj.disp('a',10);
  }
}
```

Output:

A

A 10

Java supports Constructor Overloading in addition to overloading methods. In Java, overloaded constructor is called based on the parameters specified when a new is executed.

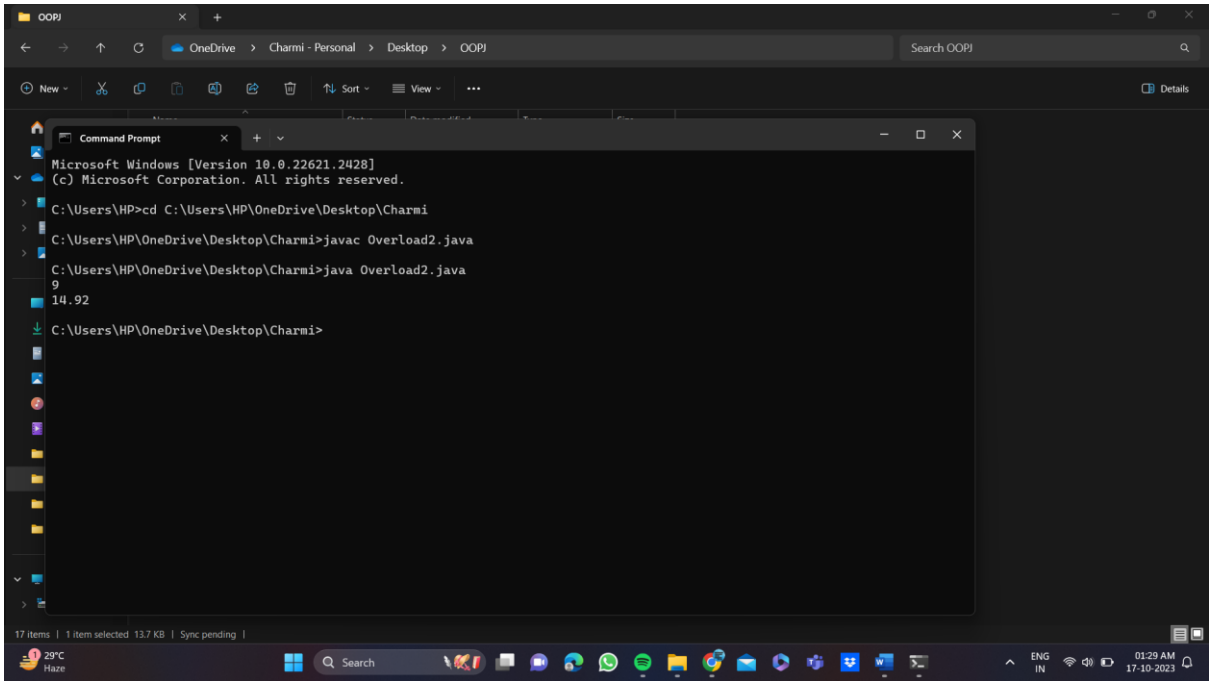
Sometimes there is a need of initializing an object in different ways. This can be done using constructor overloading.

For example, the Thread class has 8 types of constructors. If we do not want to specify anything about a thread then we can simply use the default constructor of the Thread class, however, if we need to specify the thread name, then we may call the parameterized constructor of the Thread class with a String args like this:

Thread t= new Thread (" MyThread ");

Code:

```
class Overload2
{
  public static void main(String args[])
   {
     System.out.println(Add.add(5,4));
     System.out.println(Add.add(2.80,3.12,9.00));
   }
}
class Add{
static int add(int a,int b) {return a+b;}
static double add(double a,double b,double c) {return a+b+c;}
}
```



Conclusion:

Comment on how function and constructor overloading used using java
Function and constructor overloading in Java involves creating multiple methods or constructors with the same name within a class but with different parameter lists.

Function Overloading:
In Java, function overloading allows you to define multiple methods within the same class with the same name but different parameter lists. The overloaded methods must have distinct parameter types or numbers, enabling you to perform similar operations with different data types or argument counts. The compiler determines which method to call based on the provided arguments at compile time. Function overloading enhances code readability, reusability, and flexibility, making it a valuable feature in Java and object-oriented programming.
Constructor Overloading:

Constructor overloading in Java is a technique that allows you to define multiple constructors within a class with the same name but different parameter lists. Just like function overloading, constructor overloading enables you to create instances of a class with different initialization options.