**Government Engineering College,Gandhinagar**

**Sem-4 (Computer Engineering Department)**

**OBJECT ORIENTED PROGRAMING-1 ([3140705)](https://gtu-info.com/Subject/3140705/OOPI/Object-Oriented-Programming%20-I)**

**Assignment**

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| **Sr.No** | **Assignment** | **CO** | **Unit** |
| **1** | **Assignment-1**   * Write a program that reads a number in meters, converts it to feet, and displays the result using command line argument. * Write a test program that prompts the user to enter ten numbers, invoke a method to reverse the numbers, display the numbers | **1** | **1,2,3** |
| 2 | **Assignment-2**   * Write a program to demonstrate the use of array of Objects and static variable * Create a class Account with two overloaded constructors. The first constructor is used for initializing, the name of account holder, the account number and the initial amount in the account. The second constructor is used for initializing the name of the account and the current balance. The Account class is having method Deposite(), Withdraw(), and Get\_Balance().   Make the necessary assumption for data members and return types of methods. Create objects of Account class and use them.   * The Airplane class has three subclasses named B747, B757, and B767. Each plane type can transport different no. of passengers. Each airplane object has a unique serial no. Write an application that declares this class hierarchy. Instantiate several types of airplanes and display them. Override the toString() method of object to return a string with the type, serial no. and capacity. * Write a program that illustrates interface inheritance. Interface P is extended by P1 and P2. Interface P12 inherited from both p1 and p2. Each interface declares constant and one method. Class Q implements P12. Instantiate Q and invoke each of its method. Each method displays one of the constants. * Write a program to implement an Abstract class Shape which contains Abstract method Area(). Create two other classes Circle and Square which overrides the method Area() and find the area of rectangle and square in respective classes. Write demo class * Write an application that illustrates how a method can invoke a super class method. Class I2 is extended by J2. Class J2 is extended by K2. Each of these class defines a getDescription() method that returns a string. That String includes a description of the class plus descriptions of each super class. Instantiate each object of these classes and invoke the getDescription () method. | **2** | 4,5 |
| 3 | **Assignment-3**   * Write a Program to demonstrate the use of Multithreading. * Write a Program in which the area of room is calculated and the cost of white wash is also evaluated. Further, include the provision for window on any type of the walls. The input regarding the parameters including length, breadth and height of the room are taken through command line. If there is a window, then its parameter including length and breadth are also taken through command line. If these input parameters are below 1, then raise an exception; otherwise calculate the area and cost and display the result. (note that in order to calculate the area of the room to be painted the area of window must be deducted from the total of the room.) | 2 | 6,12 |
| 4 | **Assignment-4**   * Create a class called Student. Write a student manager program to manipulate the student information from files by using FileInputStream and FileOutputStream. * Write a GUI program that use button to move the message to the left and right and use the radio button to change the color for the message displayed | 3 | 7,8,10,  11 |

Note: Submit all practical’s in softcopy during submission.