OOPS Lab Manual 2025

School Of Technology, Woxsen University

Week	Experiments	CLO/ PLO	Remarks
1	**1. Java Basic Programming** 1.1. Basic system setting by "Hello World !" program **1.2.** Write a Java program to find the value of a specified expression. 1.2.1. (101 + 0) / 3 1.2.2. (3.0e-6 * 10000000.1 1.2.3. (true && true 1.2.4. false && true 1.2.5. (false && false) || (true && true) 1.2.6. (false || false) && (true && true) **1.3.** Write a Java program to convert temperature from Fahrenheit to Celsius degrees. Test Data - Input a degree in Fahrenheit: 212		
2	**2. Conditional Statement** **2.1.** Write a Java program that accepts four integers from the user and prints equal if all four are equal, and not equal otherwise. **2.2.** Write a Java program that accepts two double variables and test if both strictly between 0 and 1 and false otherwise.		
3	**3. Introduction to Array in Java** 3.1. Write a Java program to print the contents of a two-dimensional Boolean array where t represents true and f represents false. Sample array: array = {{true, false, true}, {false, true, false}}; 3.2. Write a Java program to print an array after changing the rows and columns of a two dimensional array. Original Array: 10 20 30 40 50 60 After changing the rows and columns of the said array: 10 40 20 50 30 60.		

4	**4. 2-dimentional array in java** 4.1. Write a Java program to create a two-dimensional array (m x m) A[][] such that A[i][j] is false if I and j are prime otherwise A[i][j] becomes true. 4.2. Write a Java program to find the k largest elements in a given array. Elements in the array can be in any order.		
5	**5. Introduction of Class in java** **5.1.** Write a Java program to create a class called Vehicle with a method called drive(). Create a subclass called Car that overrides the drive() method to print "Repairing a car" **5.2.** Write a Java program to create a class called Shape with a method called getArea(). Create a subclass called Rectangle that overrides the getArea() method to calculate the area of a rectangle. **5.3.** Write a Java program to create a class called Employee with methods called work() and getSalary(). Create a subclass called HRManager that overrides the work() method and adds a new method called addEmployee()..		
6	**6. Java Class with real life applications** **6.1.** Write a Java program to create a class known as "BankAccount" with methods called deposit() and withdraw(). Create a subclass called SavingsAccount that overrides the withdraw() method to prevent withdrawals if the account balance falls below one hundred. **6.2.** Write a Java program to find the k largest elements in a given array. Elements in the array can be in any order. 6c. Write a Java program to create a vehicle class hierarchy. The base class should be Vehicle, with subclasses Truck, Car and Motorcycle. Each subclass should have properties such as make, model, year, and fuel type. Implement methods for calculating fuel efficiency, distance travelled, and maximum speed. **6.3.** Write a Java program that creates a class hierarchy for employees of a company. The base class should be Employee, with subclasses Manager, Developer, and Programmer. Each subclass should have properties such as name, address, salary, and job title. Implement methods for calculating bonuses, generating performance reports, and managing projects.		
