CSL 203 OBJECTED ORIENTED PROGRAMMING LAB(IN JAVA)

CO1	Implement the Object Oriented concepts - constructors, inheritance, method overloading & overriding and polymorphism in Java (Cognitive Knowledge Level: **Apply**)
CO2	Implement programs in Java which use datatypes, operators, control statements, built in packages & interfaces, Input/Output streams and Files (Cognitive Knowledge Level: **Apply**)
CO3	Implement robust application programs in Java using exception handling (Cognitive Knowledge Level: **Apply**)
CO4	Implement application programs in Java using multithreading and database connectivity (Cognitive Knowledge Level: **Apply**)
CO5	Implement Graphical User Interface based application programs by utilizing event handling features and Swing in Java (Cognitive Knowledge Level: **Apply**)

Rules

1. Write the Course Outcome in the first page of Fair record
2. Write Algorithm and output of respective program on the left side of fair record.
3. Write the Date, Program number, Aim, Program and Result on the right side of fair record.
4. Update the Index page accordingly
5. Maintain the Fair record neatly

Lab Cycle

Cycle 1

1. Basic program using control statement.

   Write a program to find,

   1.1 Area of a rectangle

   1.2 Largest of two numbers

   1.3 Number is even or odd.

   1.4 Number is Palindrome or not

   1.5 The number is Armstrong or not.

   1.6 Factorial of no

   1.7 Fibonacci series up to 10 no.

   1.8 The number is prime or not.

   1.9 Check the string is palindrome or not.

1.10 Find the occurrence of a character in a string.

2. Basic programs using array

   Write a program to find,

   2.1 The sum of elements of an array

   2.2 Search for an element in array using Linear Search

   2.3 Sort a given array of numbers using Bubble Sort.

   2.4 Addition of two matrix

   2.5 Multiplication of two matrix

   2.6 Print the Pattern

Cycle 2

1.Class

1.1Create a class employee that include two instance variables . Write an application that display the name and the ID of two employee.

1.2 Create a class Box that includes three instance variables such as height , width , depth .Display the volume of box computed. Use display method to print the volume.

1.3 Develop a Java application to generate Electricity bill.

Create a class with the following members: Consumer number, consumer name , previous month reading , current month reading , type of EB connection(domestic or commercial).

Compute the bill amount using the following tariff:

If the type of the EB connection is domestic, calculate the amount to be paid as follows.

First 100 units: Rs 1 per unit

101-200 units: Rs 2.5 per unit

201-500 units: Rs 4 per unit

501 units and above: Rs 6 per unit

If the type of EB connection is commercial, calculate the amount to be paid as follows.
First 100 units: Rs 2per unit
101-200 units: Rs 4.5per unit
201-500 units: Rs 6 per unit
501 units and above: Rs 7 per unit

2.Array of objects

2.1 Develop a program to find the average marks of 3 subjects of n students of a class. Display the Name, Roll No, and average marks of each student. Use separate methods for reading, calculate and display.

3.Passing object as argument

3.1 Add two complex no by passing object as argument.

4.Method overloading

4.1 To calculate the area of different shapes namely circle and rectangle using the concept of METHOD OVERLOADING

5.Constructor overloading

5.1 To write a Java program to demonstrate CONSTRUCTOR OVERLOADING.

6.Inheritance

6.1 To creates a class named 'Employee' having the following members: Name, age, phone number, address and salary. It also has a method named printSalary() which prints the salary of the employee. Two classes 'Officer' and 'Manager' having data

members 'specialization' and 'department' respectively inherits the class 'Employee'. Now assign values to officer and manager by making object to both classes and print the same.

6.2 To create two classes Employee and Engineer. Engineer should inherit from Employee class. Employee class should have two methods display() and calcSalary() . Display the engineer salary and to display from Employee class using a single object instantiation (i.e; only one object creation is allowed).

Cycle 3

1 Package

1.1 Write a Package which has one class Student. Accept student detail. Write display () method to display details. Create a main class which will use package and calculate total marks and percentage.

2 Interface

2.1 Create an insert and delete function in queue using interface.

3 .Access modifiers

3.1 Write a Java program to illustrate the use of access modifiers in packages .

4.Write java program that show the use of try catch.

5.Write a Java program that shows the usage of final keyword

6.Write a Java program that shows the usage of user defined exception.

7.Write a Java program to show usage of throws.

8.Files

8.1.Write a Java program to Copy the contents of a file to another file

8.2.Write a java program to display the number of characters, words and line in a file.

8.3Write a java program to perform File handling using FileReader and FileWriter class