PRACTICAL LIST

	Problems	
1.	Write a program in Java to demonstrate single inheritance, multilevel inheritance and hierarchical inheritance.	
2.	Write a program in Java to develop overloaded constructor. Also develop the copy constructor to create a new object with the state of the existing object.	
3.	Write a program in Java to demonstrate use of this keyword. Check whether this can access the private members of the class or not.	
4.	Write an application that illustrates how to access a hidden variable. Class A declares a static variable x. The class B extends A and declares an instance variable x, display() method in class B displays both of these variables.	
5.	i. Write a program in Java to develop user defined exception for 'Divide by Zero' error. ii. Write a program in Java to demonstrate multiple try block and multiple catch exception. iii. Write a java program using nested try-catch blocks. iv. If user enters only one command line argument than inner try block should throw an Exception. v. If user enters two command line arguments, divide first argument by second argument. If second argument is zero than proper exception should be handled. vi. Create a simple Java program to create a banking application in which the user deposits BDT 1000 and begins withdrawing BDT 500, BDT 400, and then encounters an exception with the message "Not Sufficient Fund" when the user withdraws BDT 300. vii. Write a program to handle *InterruptedException*, *IllegalArgumentException* using try-cat-finally and throw.	
6.	Describe abstract class called Shape which has three subclasses say Triangle, Rectangle, and Circle. Define one method area() in the abstract class and override this area() in these three subclasses to calculate for specific object i.e. area() of Triangle subclass should calculate area of triangle etc. Same for Rectangle and Circle.	
7.	Write a program that executes two threads. One thread displays "Thread1" every 2,000 milliseconds, and the other displays "Thread2" every 4,000 milliseconds. Create the threads by extending the Thread class.	
8.	Write a program in Java to demonstrate use of synchronization of threads when multiple threads are trying to update common variable.	
9.	Write a program that creates an array list, adds a Loan object, a Date object, a string, and a Circle object to the list. Then, using a loop and the to String() method of each object, show each element in the list.	
10.	Write an AWT program to create a Frame.	
11.	Develop an AWT program that draws a circle. The dimension of the applet should be 500 x 300 pixels. The circle should be centered in the applet and have a radius of 100 pixels. Display your name centered in a circle.	
12.	Develop an program that contains three check boxes and 30 x 30 pixel canvas. The three checkboxes should be labelled "Red", "Green", "Blue". The selection of the check boxes determine the color of the canvas. For example, if the user selects both "Red" and "Blue", the canvas should be purple.	
13.	Write a TCP Client-Server program to get the Date & Time details from Server on the Client request.	
14.	Write a UDP Client-Server program in which the Client sends any string and Server responds with Reverse string	

15.	Write a client server program using TCP where client sends a string and server checks whether that string is palindrome or not and responds with appropriate message.	
16.	Write a client-server program using UDP socket. Client send list of N numbers to server and server respond the sum of N numbers.	
17.	Consider Bank table with attributes AccountNo, CustomerName, Balance, Phone and Address. Write a database application which allows insertion, updation and deletion of records in Bank table. Print values of all customers whose balance is greater than 20,000.	
18.	Write code to insert three records into student table using *PreparedStatement* (assume student table with Name, RollNo, and Branch field).	
19.	Write a database application to perform basic SQL operations using JDBC on table employee with attributes empno, name, designation, department and salary using callable statement.	
20.	Create a servlet that display the number of times a user has visited servlet.	
21.	Create a servlet for a login page. If the username and password are correct then it says message "***Hello***" else a message "***login failed***".	
22.	Create a JSP that adds and subtracts two numbers.	
23.	Develop JSP page to display student information with subjects for particular semester from database.	
24.	Write line(s) of code in JSP for following. • Session read and write • URL rewriting sending and retrieving parameter(s) • URL redirection • Print "hello world" as output • Include the other JSP file statically • Expression to display date as output • Method of setting the JSP parameters to use in JSTL.	
25.	Implement the login application with use of JSF.	