LAB 5

1. Provide an example of single inheritance of your choice. (Two child class single parent class)
2. Provide an example of multi-level inheritance of your choice.
3. Provide example on how constructor of super class is called.
4. Provide example on method overriding condition
5. Provide example on dynamic method dispatch
6. Create a class Book with member variables book_id and pages. Then create a subclass FictionBooks of Book with member variable called name. Create some instance of FictionBook and set the value of both subclass and superclass and display all member variables that have been initialized.
7. Create a class named Shape with a method to print “this is shape”. Then create two other class named “Rectangle” and “circle” inheriting the class Shape both having method to print “this is rectangular” and “this is circular”. Create subclass Square that now inherits Rectangle which have its own method to display “this is square of rectangle”. Now call the method of Shape and Rectangle class by the object of square class inside the class having main method.
8. Create a class ExamDept which hold the details of student like roll, name, address and faculty and also have methods to set the values of student and display the details of student. Create a subclass Result that inherits Exam dept which have data member to hold marks of five subject and method setMarks() to set the marks of 5 subject, calcPercentage() that calculate the total marks, percentage and division achieved by students and display the achieved results. Now create the object of Result and demonstrate the above scenario.
9. Provide an example on method overriding condition (dynamic or run time polymorphism)
10. Create a class EmployeeDetails having data member empId, empName, empGender, empAddress, and empPosition, constructor to set the details and display method to display the details. Create a subclass SalaryInfo that will inherit EmployeeDetails having own data member salary which will record salary per year, constructor to set the value of salary and method calcTax() that deduct the tax on salary and display the final salary. Tax rate is given as (if salary <= 400000 tax is 1%, salary between 400001 to 800000 tax is 10% and salary > 800000 tax 20%). Now create the object of Salary info and demonstrate the scenario.
11. Create a class BankAccount that have data member accNo, Name, address, phone, gender, constructor to set the bank details and showDetails() method to display the account details. Create subclass SavingAccount which inherits BankAccount and have data member currentAmount and month, constructor to set the data member, methods calcTotal() that update the currentAmount by adding the bonus amount and return the result. (if saving month is below 3 mnth bonus is 2%, if saving month is between 3 to 6 month bonus is 5%, if saving month is between 6 to 12 month bonus is 8% and if saving month is above 1 year bonus is 11.03%). Now create the object of SavingAccount and demonstrate the scenario.