VelammalCollege of Engineering and Technology, Madurai
Department of Computer Science and Engineering
Object oriented programming lab

Exercise 5
Inheritance, Method Overriding

Team 1

1. Write a java class called ‘student’ with name, and rollno. Write a class ‘Result’ to get Marks of 3 subjects and another class “Sports’ to get the points obtained in sports. Calculate the total Marks and displays the result (pass or fail) with points obtained in sports for three students using inheritance and constructor.

2. A boy has his money deposited $1000, $1500 and $2000 in banks-Bank A, Bank B and Bank C respectively. We have to print the money deposited by him in a particular bank. Create a class 'Bank' with a method 'getBalance' which returns 0. Make its three subclasses named 'BankA', 'BankB' and 'BankC' with a method with the same name 'getBalance' which returns the amount deposited in that particular bank. Call the method 'getBalance' by the object of each of the three banks.

Team 2

1. Develop a Java application with employee class includes emp_name, emp_id, address, mail_id, mobile_no as members.Inherit the classes Programmer, Assistant Professor from employee class.Add Basic Pay as the member of all the inherited classes with 97% of BP as DA, 10% of BP as HRA, 12% of BP as PF, 0.1% of BP for staff club fund.Generate the pay slips for the employees with their gross and net salary.

2. Create a class 'Degree' having a method 'getDegree' that prints "I got a degree". It has two subclasses namely 'Undergraduate' and 'Postgraduate' each having a method with the same name that prints "I am an Undergraduate" and "I am a Postgraduate" respectively. Call the method by creating an object of each of the three classes.

Team 3

1. Create a Java class Shape with constructor to initialize the one parameter “dimension”. Now create three subclasses of Shape with following methods:

i) “Circle” with methods to calculate the area and circumference of the circle with dimension as radius.
ii) “Square” with methods to calculate the area and length of diagonal of square with dimension as length of one side.
iii) “Sphere” with methods to calculate the volume and surface area of sphere with dimension as radius of sphere. Write appropriate main method to create object of each class and test every method.

2. Write a program that illustrates method overriding. Class bond is extended by convertiblebond. Each of these classes defines a display() method that outputs the String

"Bond" or "ConvertibleBond" respectively. Declare an array to hold six Bond objects. Initialize the elements of the array with a mix of Bond and convertible bond objects.

Team 4

1. A software product is needed that store & retrieves information about automobiles. The information needed about all automobile is: maker(string), Vehicle identification number(string), Bluebookvalue(float), year (Integer), passengers(integer). Derive a class car from automobile. The fields are warranty-boolean, doors-int, imported-boolean, topspeed-integer, Size-String, rear door-String. Derive a class truck which have the following fields Topper-boolean, Wheels- String , Racks-Integer The product have to Display all information about all vehicles.
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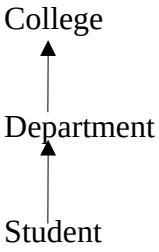
Team 5

1. Implement the following class hierarchy



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Team 6

1. Implement the following class hierarchy

2. Create a class 'Degree' having a method 'getDegree' that prints "I got a degree". It has two subclasses namely 'Undergraduate' and 'Postgraduate' each having a method with the same

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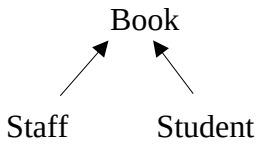
Team 7

1. Implement the following class hierarchy



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