EX.NO.3 JAVA OBJECTS-2

EX.NO.3.1 Inheritance & its Types
Date:15-sep-2020

(1) Write a Java program that computes grades for the students in a university based on mode of study and programme. The program should implement the concept of inheritance with the following related classes: a class "Student", which consists of two subclasses "PartTime" and "FullTime" mode of study. These subclasses further subdivide into still smaller subclasses "Under_graduate" and "Post_graduate" programme. Choose appropriate class members for computing the grades. Show variations in grade computations. The key parts of the program are:

- A private static variable ,protected variable
- Constructors among the inherited classes in the hierarchy and the usage of "super" keyword in constructors.
- Overridden method for computing grades. Usage of "super" keyword in method.

(2) Write a java program that keeps track of the project details assigned to Part-time and Full time employees in an organization. Fig.1 shows a network of inherited classes(Employee, Part-time, Full-Time and Project) for the application. Class "Project" derives properties from both classes "Part-time" and "Full-time" which in turn derives properties from class Employee. The program should implement the inheritance hierarchy shown in Fig1.

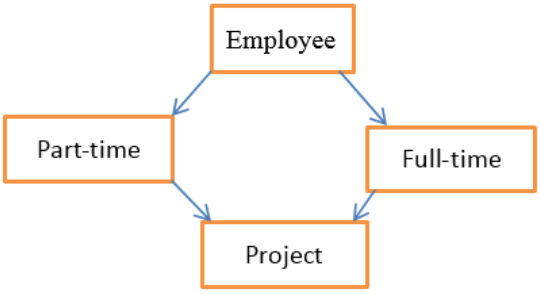

Fig.1: Inheritance hierarchy

The program should include following features:

Four classes with specified relations as in Fig.1. Choose appropriate data members for each class to track the employee's project details. Include a private, public, protected and static member .Show overridden method.

Challenge question

1. Create a Java program that finds the number of four digit numbers greater than 4000 that can be formed using the digits 1, 2, 3, 4, 5, 6 and 7 with no digit repeating.