Lab Statement

Ajay Kumar, Swathi Reddy

11th September 2018

I. Introduction

Required concepts: Multilevel inheritance, super(), method overriding

In this lab, we introduce one of the most important OOP concept "Inheritance". As we all know that inheritance property holds true when there is "IS-A" relationship between base class and derived class.
Our problem statement for this lab is to design a System of course registration for a student. Below hierarchy will give rough idea about the classes that are used to build this.

Class SchoolMember is the base class from which classes Teacher and Student are derived. Further we have classes PartTimeStudent and FullTimeStudent, both of which have their own unique properties but are derived from the class Student.`

SchoolMember class

This class stores basic info about the person, like his name and address. It also stores the details about whether the person can be promoted or not.

Student class

A student has to satisfy the following criteria: He must have course credits within a given range and must maintain a certain average grade to get promoted to the next class. We keep a tab on details like the number of courses he has taken, and the amount of credits they currently provide. Finally we can check whether a student's registration is successful using the isRegistrationSuccessful() method

Teacher class

A teacher has to float courses(upto a certain maximum number of courses). A teacher's promotion is decided by the average feedback he receives for any/all of his subjects.

FullTimeStudent & PartTimeStudent class

The only difference between the two classes is that the minimum credits required for a part time student to graduate is less compared to a full time student