

Object Oriented Programming

Assignment # 04

Start Date: 01-02-2023

Section: C3

Total Marks: 50

Due Date: 08-12-2022

Program: BSCS

Instructions

1. Understanding of the problems is part of the assignments.
 2. You will get Zero marks if found any type of cheating.
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Q#1: Design and implement a class hierarchy for students at a university. There are two categories of students: BS students and MS students. MS students can be further categorized in MS-by-research and MS-by-coursework students. All the students have their names, addresses and roll-numbers stored. Each MS student has an advisor. Each MS-by-research student has a thesis status (whether he has started the thesis or not). BS student can be of first year, second year, third year or fourth year.

Implement this hierarchy so that we can declare a list of students belonging to different categories. Also implement a **PrintInfo** function that displays all the information for the student of a particular category. In addition, the type of student is also displayed i.e. BS, MS-by-coursework or MS-by-research.

Q#2: Design and implement a class hierarchy for XYZ, Lahore campus, employees. We are interested in modeling only the Managers and Faculty. Director shall be treated as a Manager. The following information for each employee needs to be captured:

First Name, Middle Initial, Last Name, Department

All of above are of type string except Middle Initial that is of type Character. All Managers belong to certain Level which are numbered 3 through 5. Director is both a faculty member as well as a Manager, but does not belong to any level. Each faculty member is either professor, Associate or Assistant Professor.

We are only interested in creating objects of different types of employees and a function that prints the relevant information for each employee.

for Manager the output of function should be of the form:

First Name, Middle Initil, Last Name, Department, Level

for Director the output of function should be of the form:

First Name, Middle Initil, Last Name, Department, "Director"

for Faculty the output of function should be of the form:

First Name, Middle Initil, Last Name, Department, Position