

Assignment, CSE 215

Due Date: Thursday, 20 May 11:30 AM

Problem: A school wants you to develop a program that would help them to maintain the records of its **students**, and **teachers**. Teachers are of two kinds, **permanent** and **visiting**. Students can take different **courses**, and a teacher can teach different **courses**. A student cannot take more than **six** courses in a semester, and if he/she has less than **2.5 CGPA** then he/she cannot take more than **four** courses a semester. The basic **salary** of a permanent **teacher** is **10000\$** monthly (for 4 courses) and that of a **visiting** teacher is **4000\$ (for 2 courses)**. Each teacher get **2000\$ more for each additional course they teach**. For example a permanent teacher will get 14000\$ for teaching six courses. A permanent and visiting teacher can take maximum **7 and 3** courses respectively in a semester.

As you did C programming language, write your solution by the C programming language first. The method description has been given for your convenience.

METHOD DESCRIPTION

Student

Student has these attributes (String name, int age, String address, double cgpa, String id)	Think how you can implement it.
addCourse(new course)	In this method you have to build logic to find out if the student can take another course or not, if he can then add the course to the courses array . If not print a message saying that he cannot take anymore course.
printCourses()	This method will print all the courses taken by the student

Teacher\Permanent\Visiting

Teacher\Permanent\Visiting has these kind of	Think how you can implement them
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attributes (String name, int age, String address)	
addCourse(new course)	In this method you have to build a logic to find out if the teacher can take anymore courses, if he can then add it to the courses array , else print a message saying that he can not take anymore courses.
printCourses()	This method will print all the courses taken by the Faculty
getSalary()	This method will basically calculate the net salary, thus the basic salary of a faculty + the additional course load salary (if any) .

TASK	EXPECTED OUTPUT
1: Create a Student , initialize it(with a cgpa >= 2.5) . Now add 5 courses to it. Print the student's info with the courses he has taken.	name: jimmy page age: 23 address: mirpur, dhaka-1216 cgpa: 3.1 id: 16112839234 name: Programming Language 2 course code: 215 name: Programming Language 1 course code: 115 name: Data Structures and Algorithms course code: 225 name: Microprocessors course code: 331 name: Database Management course code: 311
2: Now, add 2 more courses to the Student object, and print the student's info with the courses he has taken.	You are not allowed to take more than 6 courses name: jimmy page age: 23 address: mirpur, dhaka-1216 cgpa: 3.1 id: 16112839234 name: Programming Language 2 course code: 215 name: Programming Language 1 course code: 115 name: Data Structures and Algorithms course code: 225

	name: Microprocessors course code: 331 name: Database Management course code: 311 name: Operating Systems course code: 323
<u>3:</u> Create a Student , initialize it(with a cgpa < 2.5) . Now add 5 courses to it. Print the student's info with the courses he has taken.	You are not allowed to take more than 4 courses name: dimebag age: 24 address: Dhanmondi, Dhaka-1216 cgpa: 2.4 id: 1712184642 name: Programming Language 2 course code: 215 name: Programming Language 1 course code: 115 name: Data Structures and Algorithms course code: 225 name: Microprocessors course code: 331
<u>4:</u> create a PermanentFaculty , add 4 courses to him, and print the info.	name: slash age: 30 address: Mirpur numberOfCourses: 4 salary: 10000.0
<u>5.</u> Create a VisitorFaculty , add three courses. Print the info, and the courses taken.	name: ozzy age: 28 address: RA numberOfCourses: 3 salary: 6000 name: Microprocessors course code: 331 name: Database Management course code: 311 name: Programming Language 2 course code: 215

Questions based on the coding you did in C:

1. Do you build any other structure except teacher\student\visiting\permanent to solve your problem?
2. What are the problems you face in the coding with respect to redundancy, repetition of coding? Can you underline in your report those parts?
3. Can you write down your solution method into Object Oriented Programming concept you learned in CSE 215 with an UML diagram with an interaction of classes you build for your solution.
4. What are the possible next steps you can think that the School Committee ask you to implement? How you will be dealing them in your coding? Not a complete coding is required but some ideas you can give here.

Report Submission:

You need to upload:

- i) The coding in C
- ii) The exe file for C coding
- iii) The java program
- iv) This report (word document) answering question 1,2, 3 (UML diagram) and 4 and coding in C and Java as appendix