

BACS2023 Object-Oriented Programming

Practical #4C

Question 1

Consider the following UML diagram representing a class to be used for keeping track of short courses offered by Alpha College:

- A. The data member **studentNames** is an array that can store a maximum of 100 student names. (Assume that maximum enrollment for a course is 100.)
- B. **courseCount** is used to keep track of the total number of courses offered in the college.

Course
<ul style="list-style-type: none">· courseTitle: String· feesPerStudent: double· noOfStudents: int· studentNames: String[]· <u>courseCount: int</u>
<ul style="list-style-type: none">+ Course(courseTitle: String, feesPerStudent: double)+ Set and Get methods+ calcFeesCollected(): double+ addStudent(studName: String): void+ toString(): String

- C. Implement the **Course** class. Note the following requirements:
 - In the method **calcFeesCollected()**, use the formula given below to compute the total amount of fees collected from a course.

feesPerStudent * noOfStudents
 - The **addStudent()** method will allow a new student who has enrolled for a course, to be added to the studentNames array.
 - The **toString()** method must return a string containing all the information for a course except the student names.
- D. Alpha College has recently offered a new course with details as given below:

Course Title: Introduction to Computers
Fees per student: RM250

Currently, 3 students namely Ali Said, Wong Ken and Peter Lim have registered for this course. Create a program that display the details of the new course, including the total fees collected for the course. The output should also contain the names of students who have enrolled for the course.