Shiraz University

Advanced Programming - Spring 2022
Homework No. 3

- **In this homework, You Must Use Your OOP & UML Skills to Design & Implement an Educational Automation System .**
- **Evaluation:**
    1. **Design:**
        ➔ **UML Diagram (20%)**
        ➔ **OOP (15%)**
    2. **Implementation:**
        ➔ **Code Implementation (50%)**
        ➔ **Clean Code (5%)**
    3. **UI (10%)**
- **Minimum Acceptance:**
    1. **Features of the Application are Described in Next Page. Adding More Features, Will give you a bonus.**
    2. **UI is TUI. Implementing GUI or Other Kinds of UIs, Will give You Bonus.**
    3. **You may earn a bonus score depending on your UML Design, So think wisely and Design sharply.**
- **You Can Consult with Your Friends and Ask Them for Ideas but <u>DO NOT</u> Copy Each Other's Codes.**
- **If There Was Any Ambiguity or Question, Contact TAs in Telegram Group**
- **Deadline: 6/14/2022**

This program is divided into three main parts:

1. **Students:**
   - ➔ Each student in this program include some information such as:
      1. Name
      2. Last name
      3. Student number
      4. Field
      5. Grade Average
   - ➔ Students can join classes and see refrences, exams and Homeworks and participate in them.(They can see exams when professors enabled them)
   - ➔ Students can see their grades of their exams and Homeworks.
   - ➔ Students
   - ➔ Students can send their answers for exams and Homeworks.

2. **Professors:**
   - ➔ Each professor in this program have some information such as:
      1. Name
      2. Last name
      3. Field
   - ➔ Professors can add or remove students from class.
   - ➔ Each professor has his own classes and each class includes a question bank that the professor can add and remove questions from the question bank.
   - ➔ Professors can make a field in class that takes an exam and questions are <u>random</u> from the questions bank <u>for each student</u> and each exam has time.(Professors should enabled exam that student can see them)
   - ➔ Professors can make a field for Homework and each homework has some question that is the <u>same for all students</u>.
   - ➔ Professors can add grades for each question, exam and Homework and each student can see his/her question, exam or Homework grade.
   - ➔ Professors can make a refrences field in class to see more references, books and …
   - ➔ They can send announcements to their students.

3. **Classes:**
   - ➔ Classes include professor name, students name, student number, number of students, exams, Homeworks and refrences, class scheduling and section.
   - ➔ Each exam or Homework has a grade table that includes the student name with their grade on exam or Homework.
   - ➔ Students are not able to take overlapped sections.

Best regards, Good luck.
Advanced Programming TA Team