Lab 11: Abstract Classes

Q. University Management System

The University is gearing up for the examination season, and the University Controller needs your assistance in developing a program that manages courses, students, professors, and conducts examinations.

The process is divided into three main parts: Courses, Students, and Professors. The University Controller oversees the entire process and conducts exams, checks for passed students, and provides rankings.

You have been provided with three abstract classes: Course, Student, and Professor, along with their respective subclasses for Computer Science (CSCourse, CSStudent, CSProfessor) and Electrical Engineering (ElectricalCourse, ElectricalStudent, ElectricalProfessor).

Some important implementation details:

Tip: Start completing the classes in this order

1. Abstract class (Course) needs to complete the constructor, getters, and setters.
2. Subclasses (CSCourse, ElectricalCourse) need to complete the constructor and implement any abstract methods from the Course abstract class.
3. Abstract class (Student) needs to complete the constructor, getters, and setters.
4. Subclasses (CSStudent, ElectricalStudent) need to complete the constructor and implement any abstract methods from the Student abstract class.
5. Abstract class (Professor) needs to complete the constructor, getters, and setters.
6. Subclasses (CSProfessor, ElectricalProfessor) need to complete the constructor and implement any abstract methods from the Professor abstract class.
7. The University class should conduct examinations, check for passed students, and provide rankings.

Follow the comments given to understand what is expected from each method.

You may follow the Driver to check your implementations.

Submission Guidelines:

After completing the lab, compress your solution in a .zip format. The zip file and the folder inside it should have the name format 202XYYYY9999G_Lab11. Upload before the completion time, i.e., 3:50:00 PM.

To be safe, you can upload your solution near the completion time and continue working to avoid missing the deadline. No excuse regarding late submission will be handled.