Interview questions: OOAD

In product company interviews for the position of software developer, you are asked to design the architecture of a product from scratch & even write executable codes to demonstrate it. While at this stage, you would not have enough knowledge to develop and implement software systems, you would be able to attempt a high-level conceptual design of the software product.

Interview format:

You will be asked to design a product conceptually and explain the software architecture. This would require the skills of OOAD, OOPS and most importantly, structured thinking.

Sample problem:

With the skills and tools learnt in this course, try to draw the Use case diagram, Activity diagram and class diagram for the below problem statement in draw.io.
Do note that the skills being tested is not the syntax of the drawings themselves, but the thought process. The interviewer looks for the quality of features that you are able to come up with and the clean .

Problem statement:

- Build an application for a school that lets the Teacher upload grades and students to view grades.
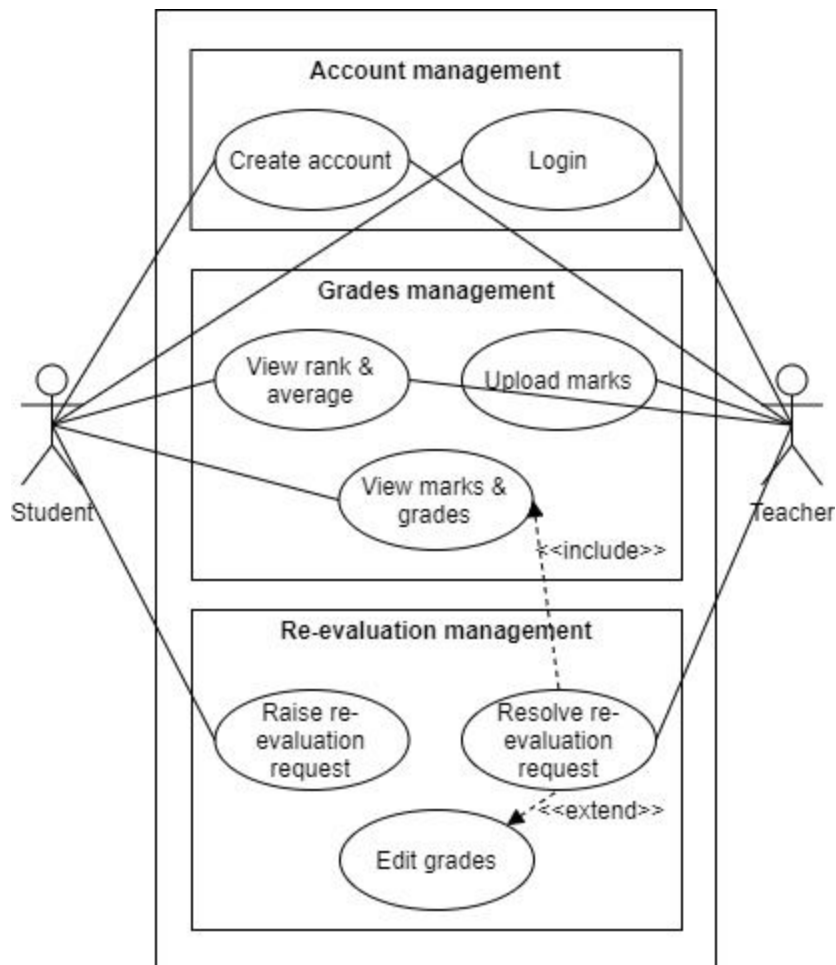
Details:

- The teacher must be able to enter the marks of all students
- Students then login to see his/her marks & allotted grade
- A student must be able to view his/her rank and the average marks
- If the mark is not as expected, the student should be able to request for re-evaluation

Application to build:

- Upload marks
- View marks/grade/rank/average score
- Request for re-evaluation

Solution:

Although at this stage, it is hard to write executable codes, you could very well use the UML to design your system and understand the features. A good starting point would be to draw the Use Case diagram for this design.

Your aim should be to construct the use case diagram and explain the different functionalities of the app. Then you would draw a rough sketch of the activity diagram to explain the user flow and sequence of these functionalities.
The class diagram would be useful to explain the structure of the software, however the same could be done by directly writing the executable code.

To answer this question, you could refer the following websites:
Machine coding question detailed solution
Machine coding round tips
More Machine coding questions