ADIPIT02 - OBJECT ORIENTED DESIGN AND PROGRAMMING

TOPIC: GROUP REPORT

Group Name: Rootkits (ADC5)
Group Members: Abhishek Magar (NP03A180104)
  Anup Chandrahang Rai (NP03A180160)
  Raj Shrestha (NP03A180088)
  Sandip Thapa (NP03A180140)

Contents

List of Figures

1. Project Description and Application

'Learn and Quiz' is a community learning platform where one can learn and share computer programming content with people around the globe. It is suitable for both intermediate programmers as well as amateur programmers.

1.1 Features

- Free courses with detailed information.
- Questionnaire with four options each
- Forum for discussion
- Showing Progress report

1.2 Applications

- Remote learning
- Learn by doing
- Crowd learning
- Self-evaluation of your knowledge in a particular subject.

2. Methodology

2.1 SDLC Process Model

2.1.1 Incremental Model

Incremental model is a process of software development where requirements are divided into multiple standalone modules of the software development cycle. In this module, each module goes through the requirements, design, implementation and testing phases. Every subsequent release of the module adds function to the previous release. The process continues until the complete system achieved. (GeeksforGeeks, 2019)

Advantages:

1. Generates working software quickly and early during the software life cycle.
2. Easier to test and debug during a small iteration.
3. Risk of changing requirements is reduced.
4. Feedback form one phrase provides information to next phrase.
5. It lowers initial delivery cost and initial product delivery is faster.
6. This model is more flexible and it is less costly to change scope and requirement.
7. Lower risk of overall project failure.
8. The highest priority system services tends to receive the most testing.

Disadvantages:

1. Requires early definition of complete and fully functional system to allow for definition of incremental model.
2. Each phrase of an iteration rigid and do not overlap each other.
3. Incremental model does not distinguish between developing the product and maintain it.
4. Testing of model result into overhead and increased cost.
5. Well defined interface are required to connect modules.
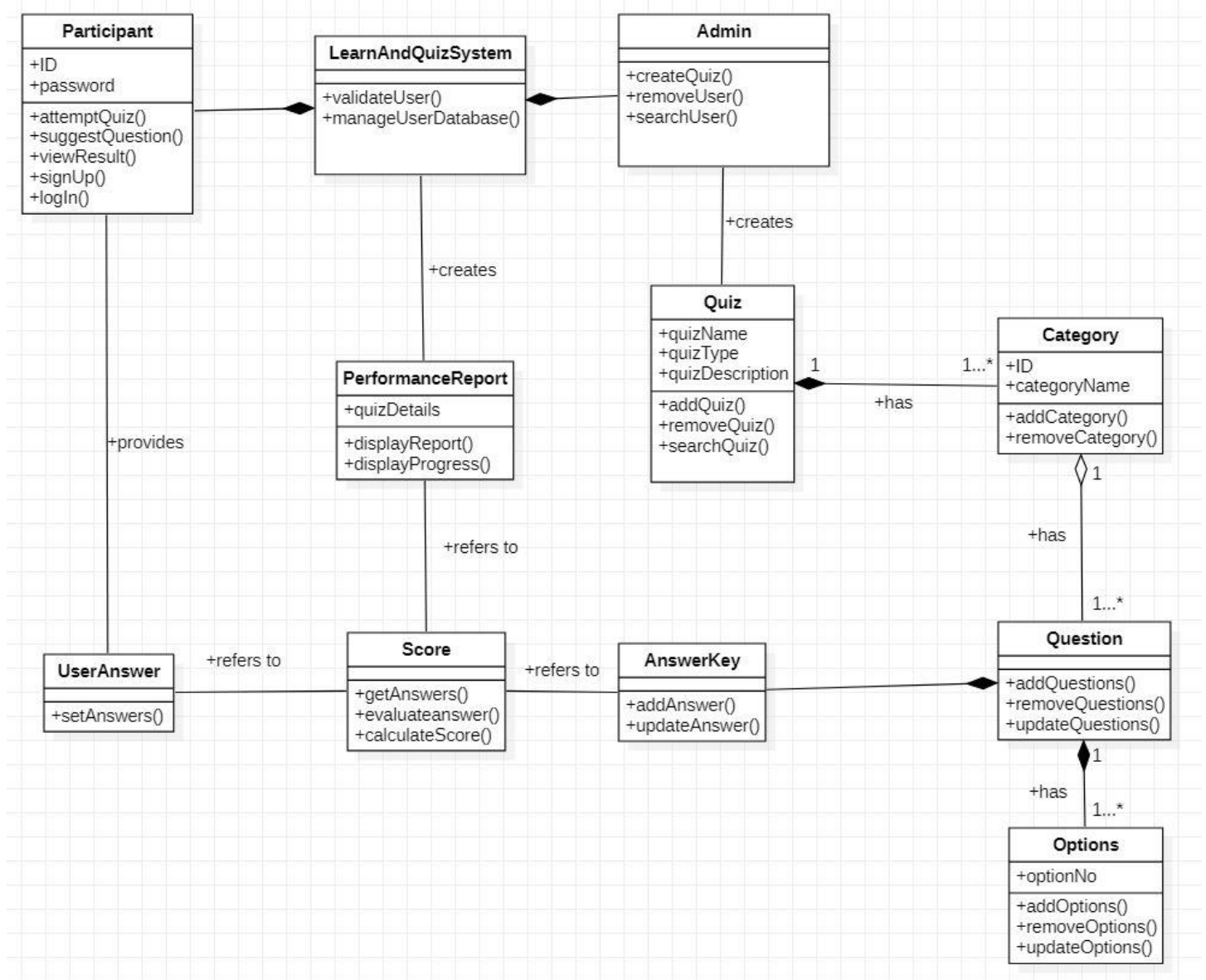6. Need good planning and design.

Class Diagram

Figure 1: Class Diagram

In total we have eleven classes with different attributes. The first and the main class is Learn and Quiz System. This class has functions like validateUser(), manageUserDatabase(), register() and login() that are created with the purpose of helping in validating the user, managing the database, registration and login process. The admin and participant classes are compositely associated with the Learn and Quiz System class.

The participants of the system provide answers to the questions which are set in the UserAnswer class through setAnswers() method. The admin creates quiz which are of different categories with several questions for each. Each question has 4 options whose correct answers are stored in the AnswerKey class. The score class compares the answers from the user to the ones in the answer key to evaluate the score of the User. The performance report classes refers to the Score class for preparing and displaying the progress report of the User.
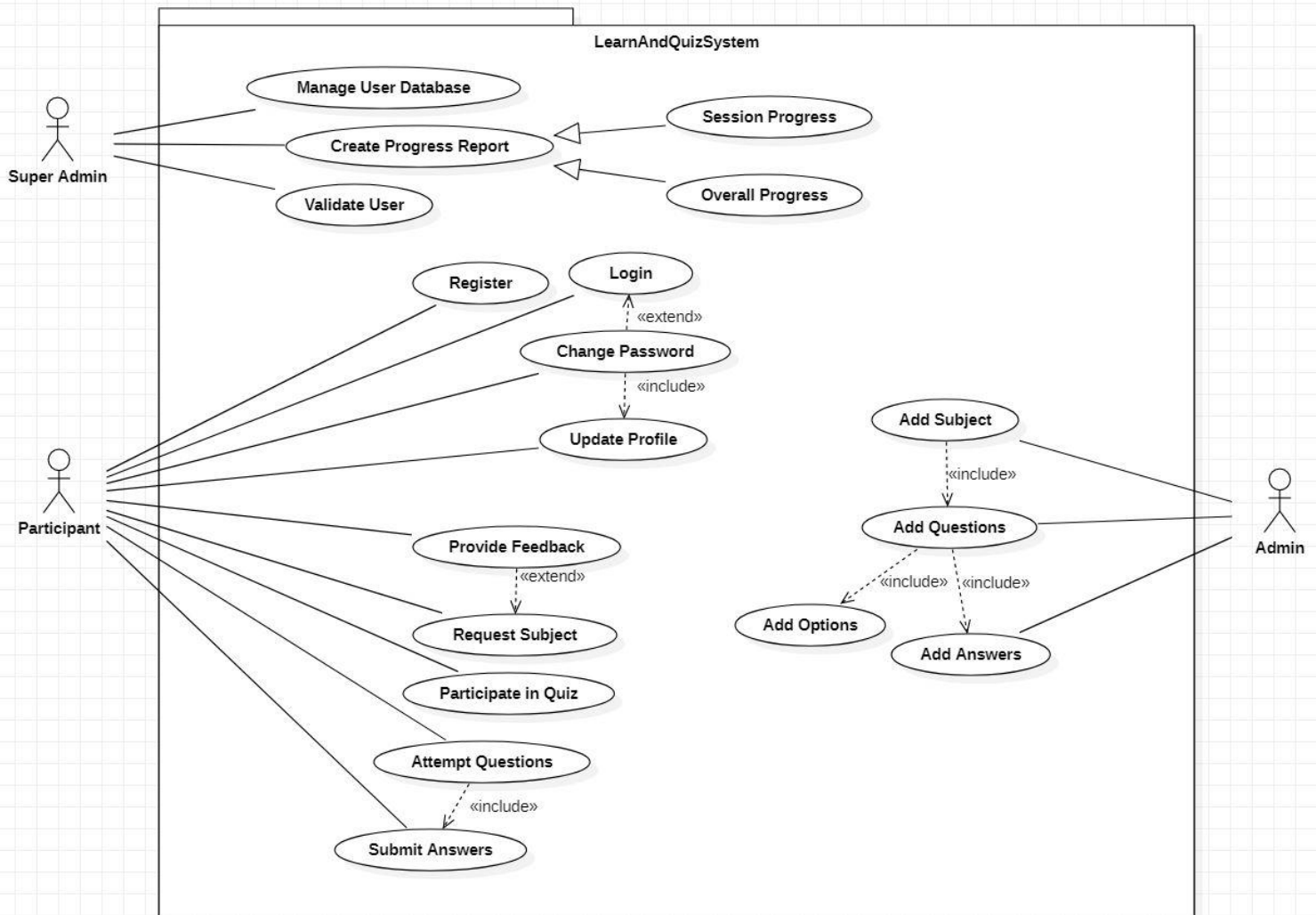
Use Case Diagram

Figure 2: Use Case Diagram

There are 3 actors in the use case diagram which are the super admin, admin and participant. The super admin, i.e. the system itself, has the responsibility to manage user database, validate user and create progress report (either session or overall progress). The admin has the responsibility to add subjects in the Quiz program. Each subject must have at least 1 question and further, each question must have 4 options including the correct one. On the participant side, they can log in if they already have an otherwise they will have to sign up (register). They can change their password which will automatically update profile. After logging in, the participant can participate in the quiz by attempting the respective questions of the chosen subject. The participants also have the ability to request for a new subject or provide feedback about the software.