

# Software Design Assignment

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## 1. Assignment Description

The aim of this application is to be a clone of the famous forum for programmers “Stack Overflow”. Users should be able to register (create an account), log in, and post questions, which other users can answer. Both the questions and answers can be either upvoted or downvoted, adding up to a post score and a user score.

## 2. Stack

The stack is comprised by Java + Springboot for the backend, PostgreSQL for managing the database and Typescript + Angular for the frontend.

## 3. Software Architecture

The application is built using a layered architecture approach, being split into 3 main parts: Data access layer (Interfaces the communication with the database), Business layer (Handles the main logic of the application) and Presentation layer (Mainly comprised by controller classes, which handle routing for the API).

## 4. Use Cases

- Register User: Allows new users to create an account.
- User Login: Allows registered users to access their accounts.
- Delete Account: Allows users to remove their accounts from the system.
- Update Account: Allows users to modify their account details.
- Create a Question: Allows users to post a new question.
- Retrieve all Questions: Allows users to view all posted questions.
- Answer Question: Allows users to provide answers to questions.
- Retrieve all Answers by Question: Allows users to view answers to a specific question.

## 5. Requirements

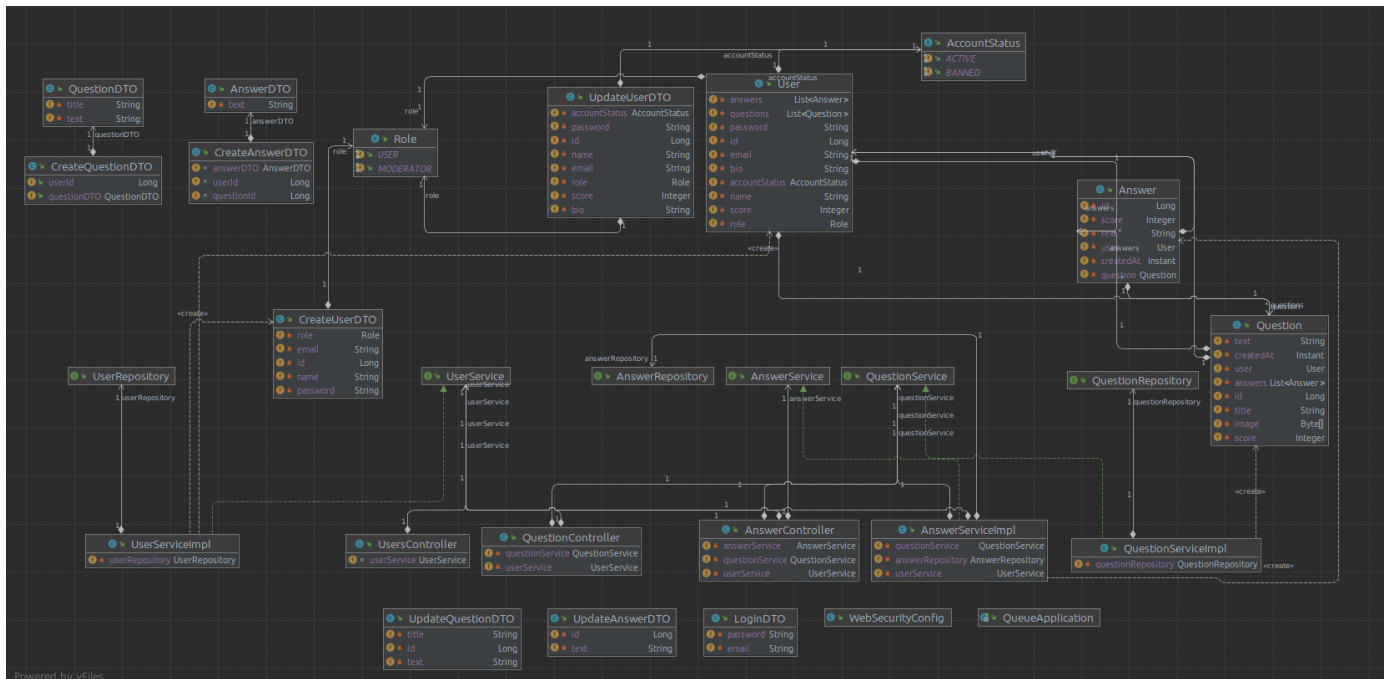
Functional:

- Register User
- User Login (using email and password)
- User posts question
- User answers question
- Display questions/answers of questions

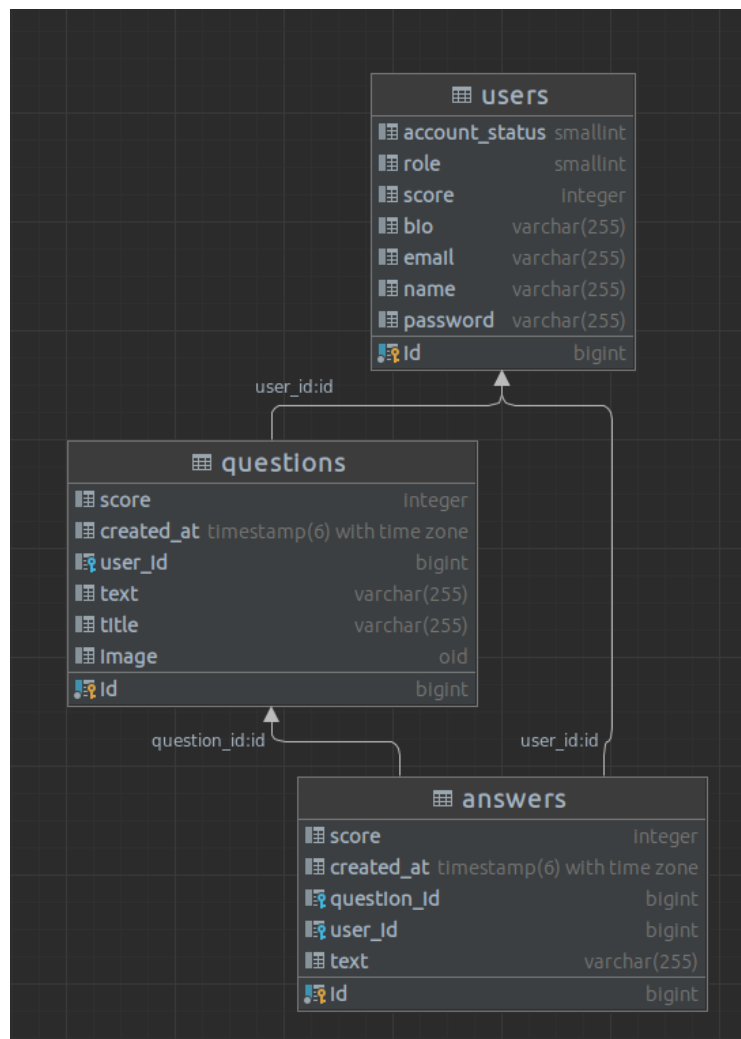
Non-functional:

- Question up/down votes
- User data hashing or encryption (for security)
- Users can be moderators and update/delete other users' posts
- User scores

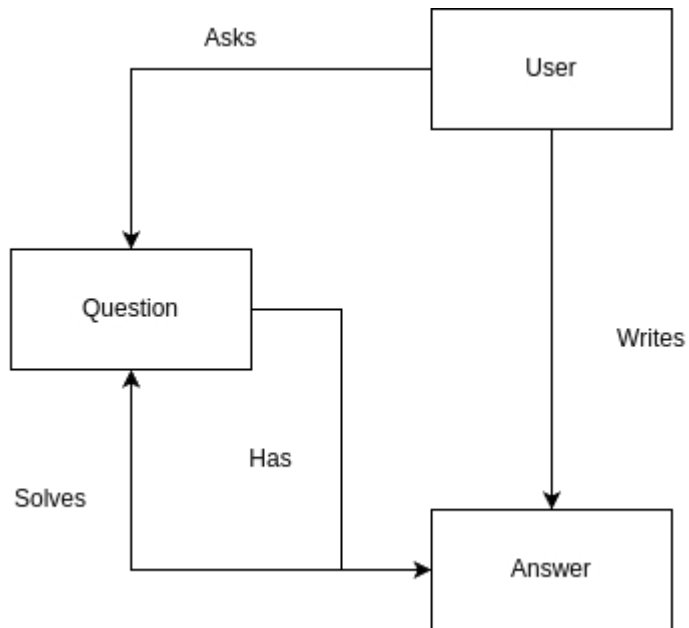
## 6. Class Diagram



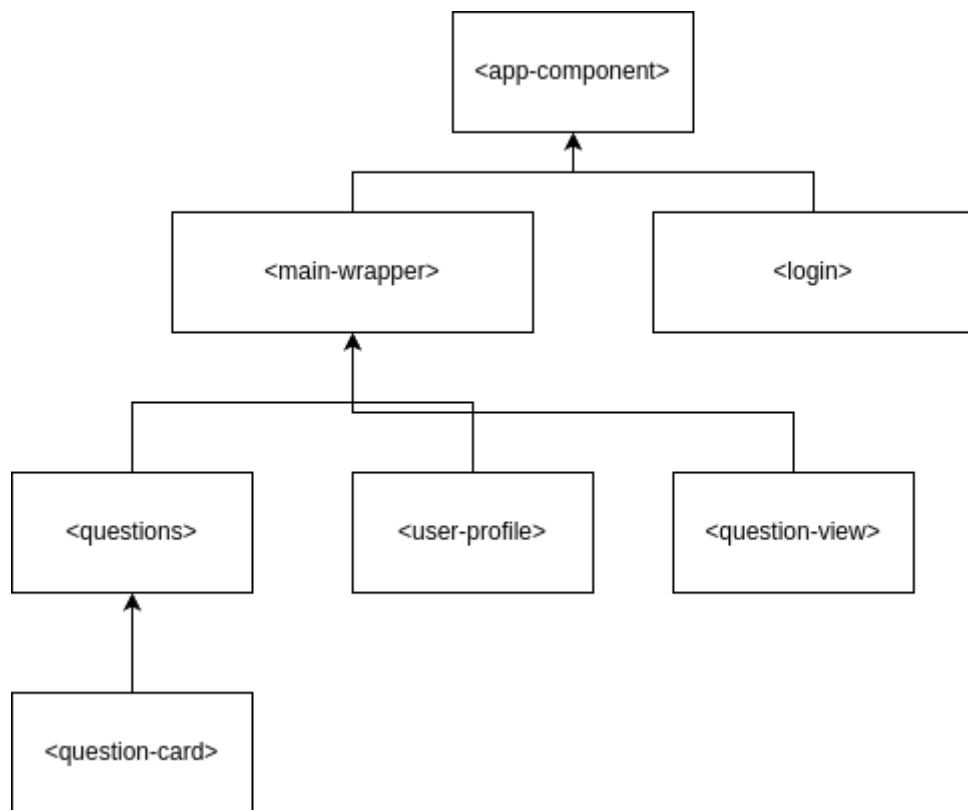
## 7. Database Diagram



## 8. Domain Model



## 9. Component Diagram



## 10. Deployment Diagram

