CS 353 TERM PROJECT

Online Coding Platform

PROJECT PROPOSAL REPORT

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1. Introduction

For CS 353 Database Systems course, we are going to build an Online Coding Platform. In this report, our initial findings, limitations and proposed Entity-Relationship model will be discussed. The aim of this project is to practice building a well-organized, error free database. A simple but effective front-end will be provided along with the database structure and linked with back-end code. The end product will provide a platform that allows users to find, filter coding and other technical problems, connect with companies, find job opportunities and socialize using the “follow user” feature. A developer using the coding platform may “like” their favorite content, while editors get awarded points for their contributions. Companies would benefit perks such as heightened reputation, talented workers and popularity.

2. Description

This project is going to provide a coding web-application platform. The coding platform will help people to learn, practice and improve their algorithmic and coding skills by providing a variety of coding challenges and contests. Editors will be able to post their own coding contests and non-coding questions for interviews. Platform will include coding categories including but not limited to dynamic programming and system design. Companies will be able to list job openings and gain popularity.

3. Requirements

3.1 Functional Requirements

3.1.1 User

- Users can log in or sign-up.
- Users can change their passwords.
- Users can create a profile with their personal information.
- Users will be awarded points for anniversaries, birthdays and donations.
- Users will receive notifications generated by admins.
- Developers, editors and patrons have all functionalities of a user.
- Users will be able to rate problems.
- Users will be able to select from different payment options for donation or premium membership.
- Users can follow other users.
- Users may like non-coding questions and coding-questions.
- Users may submit new questions to be reviewed by the admins.

3.1.2 Developer

- Developers can view and solve coding problems and submit their solutions.
- Developers will be awarded points for contests, solving attempts, true answers and contributing.
- Developers may like content on their dashboard.
- Developers may filter content according to difficulty, subject, programming language and popularity.
- Developers may apply for job openings.
- Developers can upgrade their account to premium by buying a premium license to have access to premium coding questions and contests.
- Developers can leave a comment on the questions that they have already solved.
- Developers can rate a question.

3.1.3 Administrator

- Admins may approve/deny content contributions and job openings.
- Admins may manually add/remove problems and solutions.
- Admins may ban users.
- Admins may create notification messages and send it to the target group.
- Admins may approve/deny editor accounts to be verified.
- Admins may add new companies and coding problem topics.

3.1.4 Editor

- A verified editor may submit interview questions and organize challenges.

3.1.4 Company

- Companies may list job openings.

3.2 Non-Functional Requirements

3.2.1 Performance

- System is going to be capable of handling 5000 users concurrently.
- System will check the correctness of the user's answer to the coding question within a span of 5000ms.

3.2.2 Maintainability

- This project will not consist of excessively complex components therefore bug-fixes will be cheaper and easier.
- Redundant tables were replaced with simple relationships
- Entities were designed to prevent writing code from scratch

3.2.3 Safety

- Passwords will require at least 8 characters and also passwords will be encrypted for extra safety.
- Valid credit card numbers and expiration date will be stored for convenience.

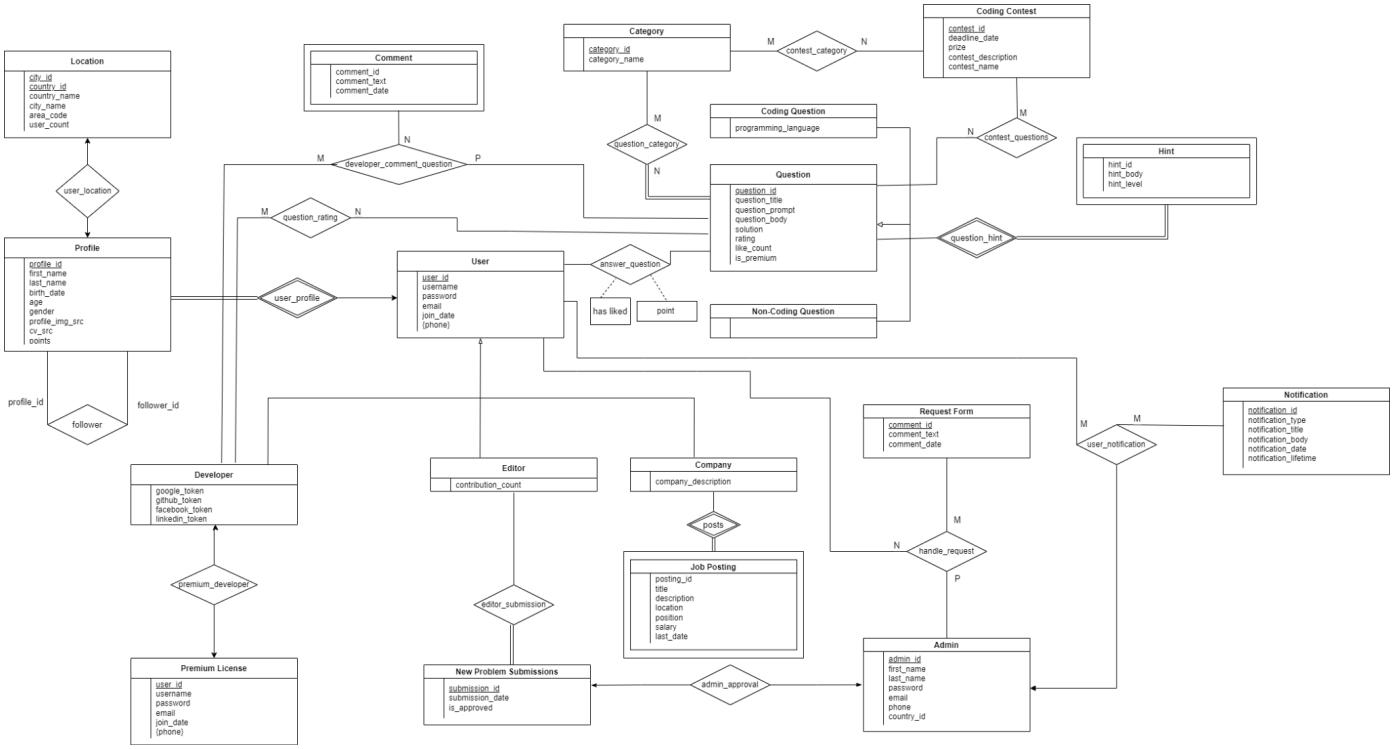
3.3 Constraints

- MySQL will be used to implement the database.
- HTML, CSS, JavaScript and PHP will be used for the user interface and database connection.

4. Limitations

- Developers can only rate questions that they have already solved.
- Developers can only see the solutions of the questions that they have already attempted.
- Developers can see other people’s solutions if they have already solved the question.
- Developers can use up to 3 hints per question.

5. Entity-Relationship Model



6. Website Link

https://ceydas.github.io/codeatrapton/