Database Design

In this assignment, you will design the database schemas and establish their relationships to model the data of the coding platform. We will provide you with textual descriptions of the entities, and you will be tasked with a set of tasks:

CodeCLA Database Description

The platform caters to two primary user roles: **Coders** and **Managers**. Managers hold the responsibility of overseeing their designated **Challenges** by creating, updating, and deleting them.

Both **Coders** and **Managers** possess basic account information such as first name, last name, email (which should be unique for that user), password, and an optional avatar.

Coders, however, have additional pertinent attributes including a description field allowing them to express their passion and interests, and a score field crucial for the application's leaderboard.

The **Challenge** entity represents a coding challenge and includes attributes such as a title, category (e.g., data structures, graphs), and a textual description provided by the **Manager** in Markdown format for enhanced UI rendering.

Challenges are also categorized by difficulty level, which can be one of the following: `Easy`, `Moderate`, or `Hard`.

Each **Challenge** includes an associated **Code** snippet, initially provided by the **Manager**, which serves as a starting point for **Coders** to build upon and submit their solutions.

Additionally, Challenges are accompanied by a set of **test cases**.

The **Code** contains information related to the function that **Coders** are required to implement.

This includes a function name and the actual code content, organized by language. Each Code entity also defines a set of **FunctionInputDefinitions**, which describe the function's arguments.

These **FunctionInputDefinitions** consist of a name and a type, aiding **Coders** in understanding the expected function signature.

TestCases are used to evaluate Coders' submissions against predefined inputs and expected outputs.

Each **TestCase** is assigned a weight value between 0 and 1, indicating its importance relative to other TestCases. Furthermore, **TestCases** consist of a set of **FunctionInputValues** representing the inputs for the function being tested, each with a name and corresponding value.

The Coder can submit his code for grading, on submission, a Submission will be created, it's related to a specific challenge and contains information about the submission time, whether it successfully passed the grading, the final score after grading, and the code of the submission.

Tasks

Here's the list of tasks

- Extract the entities and relationships along with their attributes.
- Draw the diagram of the system's data.