Tables:

App user - This entity represents a user on the platform.

Code Language - This entity contains the different coding languages supported by the platform

Challenge - This entity on the data model maps directly to the challenges identified on the requirements section (cross reference). The challenge has a many to one relationship with the user table, this relationship represents the creator of the challenge which can create multiple challenges. This is a weak entity of user, i.e., does not exist if there is no user.

Challenge Solution - This entity represents the solution to the challenge. It is on a separate table to allow defining multiple solutions per Challenge (many to one relationship), one for each language. This is a weak entity of Challenge, i.e., does not exist if there is no Challenge. This table has a one to many relationship with the code language table because each answer is written for a specific supported language.

Challenge Answer - This entity represents an answer of a challenge. There is a many to one relationship with the challenges since a challenge can be answered by multiple different people, as a result this table also has a many to one relationship with the user table. This is a weak entity of Challenge, i.e., does not exist if there is no Challenge.

Questionnaire - This entity on the data model maps directly to the questionnaires identified on the requirements section (cross reference). The questionnaire has a many to one relationship with the user table, this relationship represents the creator of the questionnaire which can create multiple questionnaires. This is a weak entity of user, i.e., does not exist if there is no user.

Questionnaire Answer - This entity represents an answer of a questionnaire. There is a many to one relationship with the questionnaires since a questionnaire can be answered by multiple different people. This is a weak entity of Questionnaire, i.e., does not exist if there is no Questionnaire.

Answer - This entity represents the abstract concept of an answer, which is specified (por o que esta no relatorio, Answer - Challenge Answer - Questionnarie Answer). This table has a one to many relationship with the code language table because each answer is written for a specific supported language.

Tag - This entity supports the tag search functionality identified on the requirements section (cross reference). There is a one to many relationship with the challenges since a challenge can have multiple tags. This is a weak entity of Challenge, i.e., does not exist if there is no Challenge.

One special connection is also worthy of note, the many to many connection between the tables Challenge, Questionnaire and Questionnaire Answer. This relationship exists in order to support a questionnaire associating to many Challenges each with a language (it could only be solved for a specific language even if it is available with more) and also associating the questionnaire answer to the challenge connected with questionnaire.

Connections:

Challenge - Questionnaire – Questionnaire Answer