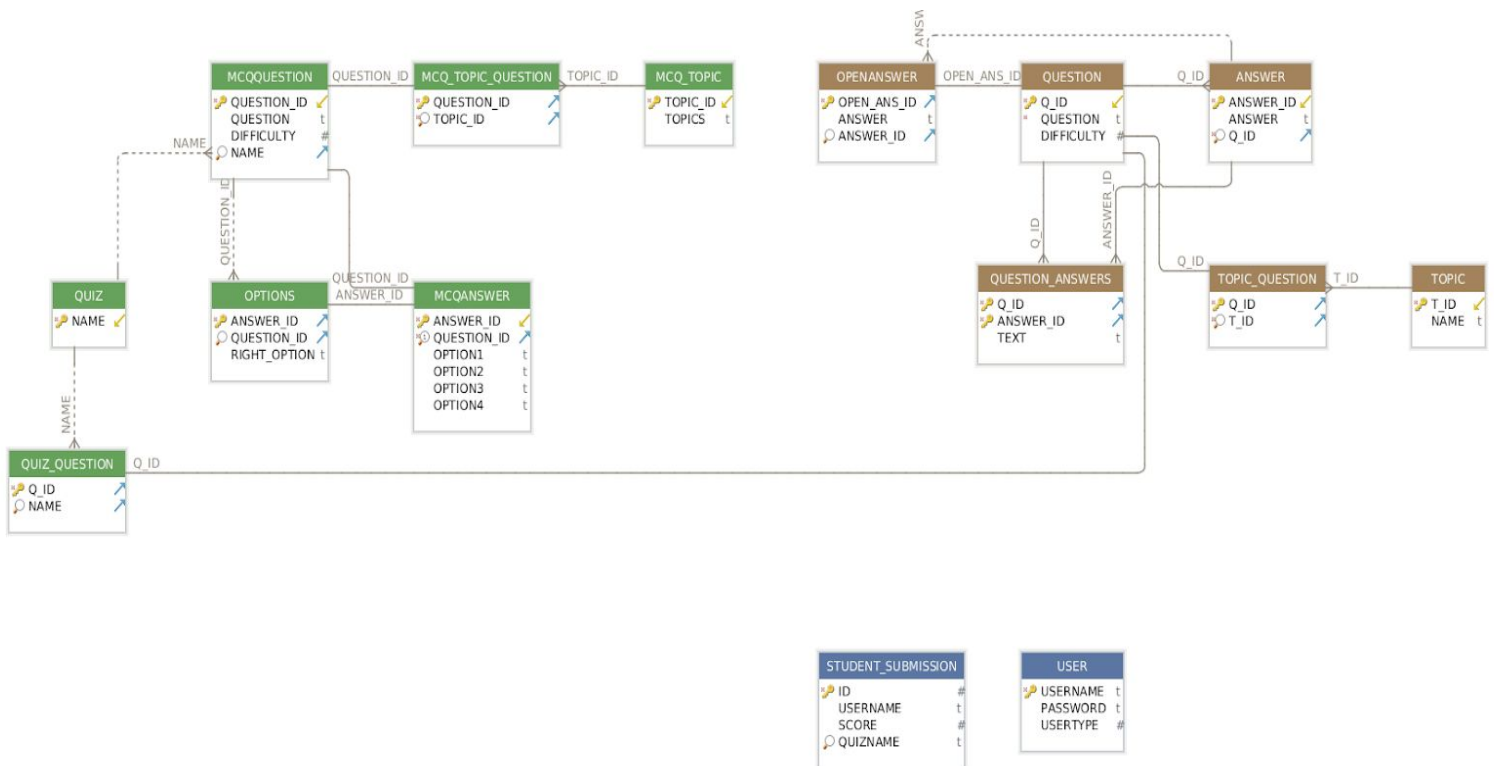# TECHNICAL SPECIFICATION

DataBase Schema

The database was designed to ensure students can take a quiz and get results with the results being stored in the database. Mcq questions table has been separated from open questions and single question answers. When a student selects a quiz by name it goes to get multiple choice questions and single choice questions from mcq and single question answers to present as a quiz. The user submission is stored in another table called the student submissions.

DAO:
Interaction of the DAO with the database methods
createQuiz() - : quiz table
createAll() - interacts with tables : QUIZ, QUESTION, QUESTION_ANSWER, ANSWER, TOPICS, TOPIC_QUESTION
addOpenQuestion - openQuestion
addMCQQuestion - quiz, mcqquestion, mcq_topic_question, mcq_answer, option
update() - quiz, quiz_question, mcq question
delete() - quiz
getAllQuiz() - QUIZ_QUESTION, QUESTION, TOPIC_QUESTION, MCQQuestion
search() - quiz, question, mcqquestion
searchbyTopic() - topics, topic_question, mcq_topic_question, question
authenticate() - user

quizSession() - mcqQuestion
single AnswerQuestions() - question, quiz_question, quiz
delete() - quiz
updateStudentQuiz() - student_Submission
getStudentScores() - Student_submission

TABLES:
  - QUIZ_QUESTION : Contains the ID and name of every quiz written to the database. It is dependent on table quiz as a foreign key.
  - Quiz: Where the name of all the quizzes are stored here. MCQ question, Open Questions and Single Answer Questions are linked to quiz names
  - OPENANSWER: Ungraded questions that stores text questions that have multiple lines of answers
  - QUESTION_ANSWER: This contains the answers to every question containing columns for the question ID and answerID
  - TOPIC_QUESTION: This links the topics with the question ID
  - TOPIC: Contains topics available in the database with an ID
  - STUDENT ANSWER: Student answers are stored here
  - USER: There are two users in the system. The lecturer and the student. They have stored their usernames, password and usertype. UserType int 0 for student and 1 for lecturer
  - MCQQUESTION
  - OPTIONS: Contains the answer id, question id and the right option for every question
  - CHOICES: contains the options of multiple choice questions
  - MCQ_TOPIC_QUESTION: Links table for mcq_questions to the topics
  - MCQ TOPIC: Contains topics and their id

LOGGER: The logger is located in a folder named log details at the root of quiz core. The code has been written to have minal errors so most of the errors are handled in the code but in the case of errors. The will be written to the log file. Logging the time of occurence and location or method where it occurs.