CSCI 3308 Group Project
Milestone III - Database

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1 Database Description

There are three things that need to be stored in this database:

1. Users and their information. We want users to be able to log in to the application to access their topics, subjects, tests, etc. Because we are not storing actual "tests" (tests are just randomly picked questions with the same topic), these user preferences will simply be stored locally.

2. Questions, answers, subjects, and topics. This will be stored in a "Questions" table, that includes all of this information about each question.

3. Incorrect questions. This table is necessary to ensure we know which questions a user has gotten wrong; storing incorrect questions is necessary if we plan to do anything special when a user misses a question.

2 Data Model

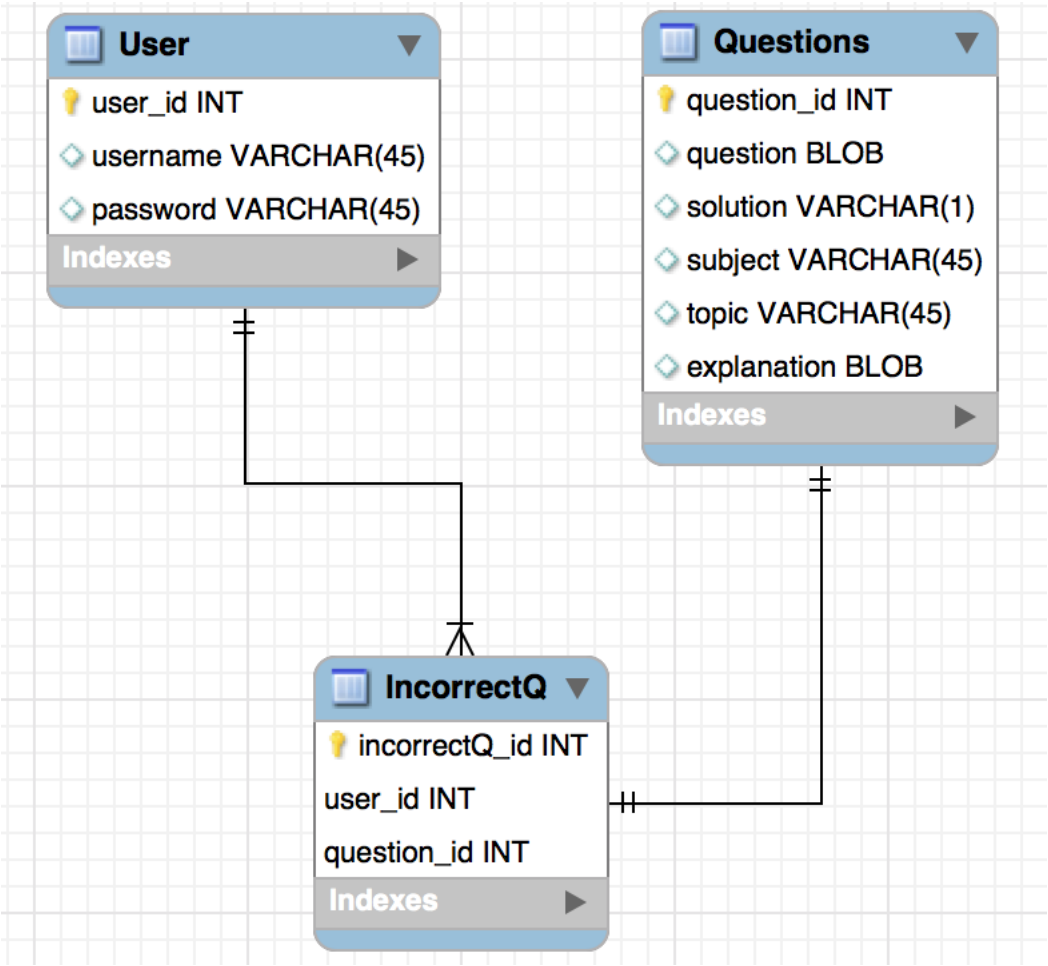

Figure 1: ER Diagram describing relationships between tables in the database.

3 Database Description

```
create table if not exists `Users` (
 `user_id` int(1) not null auto_increment,
 `username` varchar(45) not null,
 `password` varchar(45) not null,
 primary key (`user_id`)
);

create table if not exists `Questions` (
 `question_id` int(1) not null auto_increment,
 `question` mediumblob not null,
 `answer` varchar(1) not null,
 `soulution` mediumblob not null,
 `subject` varchar(45) not null,
 `topic` varchar(45) not null,
 primary key(`question_id`)
);

create table if not exists `IncorrectQ`(
 `incorrectQ_id` int(1) not null,
 `question_id` int(1) not null,
 `user_id` int(1) not null,
 primary key(`incorrectQ_id`, `question_id` , `user_id`),
 foreign key(`user_id`) references User(`user_id`),
 foreign key(`question_id`) references Questions(`question_id`)
);

INSERT INTO `Questions` (`question`, `answer`, `solution`, `subject`, `topic`)
    VALUES (LOAD_FILE(Q1.png),'A', LOAD_FILE(Q1sol.png), 'Physics', 'Mechanics');
INSERT INTO `Questions` (`question`, `answer`, `solution`, `subject`, `topic`)
    VALUES (LOAD_FILE(Q2.png), 'D', LOAD_FILE(Q2sol.png), 'Physics', 'E&M');
INSERT INTO `Questions` (`question`, `answer`, `solution`, `subject`, `topic`)
    VALUES (LOAD_FILE(Q3.png), 'B', LOAD_FILE(Q3sol.png), 'Physics', 'Mechanics');
INSERT INTO `Questions` (`question`, `answer`, `solution`, `subject`, `topic`);
    VALUES (LOAD_FILE(Q4.png), 'A', LOAD_FILE(Q4sol.png), 'Physics', 'E&M')
INSERT INTO `Questions` (`question`, `answer`, `solution`, `subject`, `topic`)
    VALUES (LOAD_FILE(Q5.png), 'C', LOAD_FILE(Q5sol.png), 'Physics', 'Mechanics');

INSERT INTO `Users` (`username`, `password`)
    VALUES ('AlexRay', 'pass');
INSERT INTO `Users` (`username`, `password`)
    VALUES ('OneMoreUser', '123456');
```

Figure 2: Example code to create tables and add sample questions and users into the database.