**Database Overall Model**

The database to be used is a relational database. Only data will be stored in the database, any other file such as pictures, sounds, videos will be stored in the application server.

A relational database design has been constructed to illustrate the minimum needs of the application. There are 2 designs:

**1st –** Minimum database design includes only the table needed to run the application. The information to be stored support the login feature, creation of competitions, store teams and team records.

**2nd** - This design contains a more complete illustration of what would be necessary in a long run, it is more scalable. In this design, tables store information about the competition, competition organizers, school, school participants, all question and answers, and all teams’ records.

**Which database?**

The current proposed databases are MySQL or PostgreeSQL. The system of choice must run in a linux operation system as per client’s requirement.

Although we have highlighted in the project proposal that we would be using MySQL database it may not be the case. The use of postgreeSQL is more likely as it is SQL compliant and ACID compliant which preserves the integrity of the data, in the case of our project concurrency must be handled carefully in the database.

**Database overall Model Walk Through**

The database design must satisfy a series of requirements as listed above. Those are extended in details as follow.

\* = not required by the client or do not affect the application

**Login\profile –**  Requires a user name and a password (password may want to be hashed for safety). Also, the name of the user and their privilege level (such as judge, marker, scorer). No further details are required at the moment.

**List of teams in the competition** – each team represent a school. Each school may have one or more teams but they will use the school’s initial at least for now. \*(Each team may have a supervisor or a supervisor may represent a school. A team contains 4 to 5 students. A team may or not have a name or id).

Note: the need of a supervisor is an ASSUMPTION because a group of children should have somebody to look after them.

**\*Question and answers –** All questions and the corresponding answers must be stored for each section.

**Team performance track** - all teams of one session will answer the same questions of that session. The result of their performance must be recorded. A team must either answered a question correctly or pass, the time must be recorded too. The total number of passes and correctly answered questions must be stored such that they can be used to compute the total score if necessary.

Note: The questions and answers are not essential for the the score board but only the scores

**Further needs:**

* A team can only be assigned to one marker only.
* Time stamp for when a competition starts for the countdown.

**Diagrams Clarifications**

Teams will be assigned to a competition after competition is created. This is achieved by inserting a new entry in the “TeamRecord” table. Bear in mind that it uses a composite Key.

“Assigned” variable Is also in the “TeamRecord” table. It is because the same team may exist in different competitions.

**Initial Requirements**

The information that must be stored\update in the data base is listed below. This reflects the requirements that have gathered so far and it is believed to be the least expected from the database.

Profile:

* Login credentials and password.
* Name
* Privilege level: scorer\marker\judge\admin

List of teams in the competition.

* Name of the school
* Abbreviation
* \*Student’s name
* \*Any supervisor

\*Answer for each question for all teams.

* Correct
* Pass
* Total pass on each question
* Record timestamps

Total score for each team.

* Sum of the points gained by each correct answered question

\*Number of passes for each team.

* Sum of all passes for a team