Online Math Learning Case Study

**1**. Online math learning system

A website designed for primary school students to practice their mathematical skills.

**2**. System requirements specification

2.1. Functional requirements

\* Create new account

- Allow users to create accounts.

- Each account is identified by a unique username.

- If the username already exists, announce the user.

- If the password and confirm password don’t match, announce the user.

- After successful registrations, log the user in.

\* Login

- A user uses his username and password to login

- Check if (username, password) is a valid pair or not, if not, make an announcement   
 to the user.

\* View profile

- A user can view all other profiles.

- Each profile provides information about its user: Name, email, avatar, school, class   
 in school.

\* Edit profile

- A user can only edit his/her profile.

- Username cannot be changed.

- If  a user want to change his or her password, a confirm password that matches the   
 new password must be provided.

\* Take exercises

- Each exercise belongs to one skill which belongs to one grade.

- User can check his/her answer or change to another exercise.

- The user must be informed that his answer is right or wrong when he press the   
 “check answer” button.

- When the user press “change question”, change to a random question from the same skill.

- Have a record for each answered exercise.

\* Take exams

- Each exam has 3-5 questions.

- There must be a countdown clock to inform the user how much time remains.

- Each exam is limited to a fix period of time (90 seconds \* number of questions).

- After pressing the submit button, the user must be announced whether he/she has   
 answered all questions or not, and the user must choose to submit or continue the   
 exam.

- Have a record for each exam.

\* View ranking

- User can view ranking of each exam.

2.2. Non-functional requirements

- To check an answer, client must send a request to the server and receive a response   
 back in order not to reveal the answer of that question to the user.

**3**. System testing

- Test by inspection.

- Automated testing.