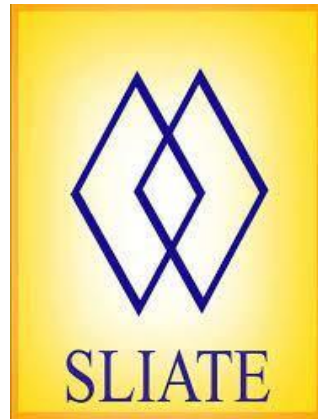**SRI LANKA INSTITUTE OF ADVANCED TECHNOLOGICAL EDUCATION**

Higher National Diploma in Information Technology

Final Report

Creating A Web Application for Online Quiz System
(QuizzA Web Application)

Individual Project

ANU/IT/2021/F/07 | S.K.S. Silva

Supervisor: Mr. A.P.P. Sahansith

Academic Year: 2021

Year: I, Semester 01

DECLARATION

I hereby declare that this final project report is based on my original work and has not been submitted previously for any other Diploma or Degree in any institution. To the best of my knowledge, it does not contain any material written by another person.

Student Name   :   S.K.S. Silva

Registration Number   :   ANU/IT/2021/F/07

Signature	Date

Submitted to:

Mr. A.P.P. Sahansith (Supervisor)

Signature	Date

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CHAPTER 1: INTRODUCTION

This final report is submitted" to meet the web application development requirements of the individual project module conducted by the Advanced Technological Institute, Anuradhapura.

The purpose of this document gives an introduction to this web application development project.

This web application is titled "**Creating a web application for online quiz system**". This web application is named "**QuizzA**". This web application is created to increase some general knowledge in peoples' minds. There are two actors in this application. There are Admin and User. Admin is the owner of this system, who has full control of the system. The User is the person who is enrolling in the system from the outside environment. Every person can log in to this system as a user without any age limit.

Here is a brief introduction to "QuizzA" web application development project.

In QuizzA, there are included 180 general knowledge MCQ questions and those questions divided into two quiz categories. Those are Technological QuizzA and Geographical QuizzA. In each category has 90 questions and those questions are divided into 3 levels named Basic Level, Middle Level, and Hard Level. In each level has 30 questions. And those 30 questions divided into 3 parts again as one part has 10 questions. After login to this web application, the user can choose a level and a level part and can give his or her answers to the questions which are in the quiz category he or she chosen. After completing 10 questions in every level sub parts, there user can see his or her scores.

I used HTML, CSS, and JavaScript, as front-end development languages and PHP, and MySQL as back-end development languages to develop this web application.

CHAPTER 2:   BACKGROUND

In the background, there are some existing quiz applications I found for this online quiz application.

ETEST

This quiz web application I founded from the internet named "etest.lk" which is developed in Sri Lanka. In this existing system, there are three (3) actors. They are Admin, Instructor, and Student. ETEST online exam platform provides the best quiz maker tool for both teachers and businesses. This platform is used for schools, universities, distance learning, online courses, online certification, practice test, and more, in addition, it provides past papers and model papers for students to practice for O/L and A/L examinations.

Also, this web application appearance has a simple and user-friendly interface. Admin is managing this system while the instructor can create questions based on certain subjects and topics. In the system, questions can also be randomized from the available pool of question bank. Students can log in to the web application and can face these questions, which are created by their instructor. The Instructor can track students answering performance. And can share quiz links with students. After completing a course in a subject, the system issues an online valid certificate to students.

NATIONAL GEOGRAPHIC KIDS

This web application is a kids-based application. Here, users (kids) can play games, watch videos, know information about animals, and explore more like magazines, etc. In this existing system, there are two (2) actors. They are Admin and User. In the games section, there are five (5) types of games. Those Quizzes are Personality Quizzes, Puzzles, Action, and Funny Fill-In. And they (admin) get those quizzes from their "NAT GEO KIDS MAGAZINE". In the Quizzes section, there are quizzes about U.S. Presidents, U.S. States, Royalty, Anatomy, Animals, Space Exploration, Sports, etc.

CHAPTER 3:   PROBLEM IN BRIEF

In the "Background" topic in this final report, I have explained the existing quiz web applications used at the present time. From that web applications, I found a few problems, and to solve that problem I created my web application and also with adding some upgrades to my web application from the existing systems.

ETEST

In the problem view, this quiz web application is developed for especially university students and school students in grade 1 to grade 13, with specializing in ordinary level and advanced level examinations. So, on the user side, students and instructors can log in to this system. Then how can other people, like school leavers, job applicants, etc. get a login to this system? Then I developed my "QuizzA" web application to every person can log in to my system and can follow quizzes without any age limit.

And the user has to pay some fee of a charge to use this ETEST web application after the one-month free offer. But as a solution, I developed my web application that can use by every person free of charge.

In upgrading view, I developed my quiz web application with a user-friendly interface and users do not want any software installation required to use this "QuizzA" web application.

NATIONAL GEOGRAPHIC KIDS

This kids-based quiz web application, in problem viewing mode, this web application is developed for aged 6 to 13 kids. Because there are quizzes also add for only the kid level. Then, I developed my web application to everybody can use it and with adding general knowledge questions two (2) categories and in three (3) level types. Categories are named Technological QuizzA and Geographical QuizzA. There are Basic Level, Middle Level, and Hard Level.

I found above few problems and upgrading methods in those existing systems that I found on the Internet. Then using those solutions and upgrades, I developed my web application.
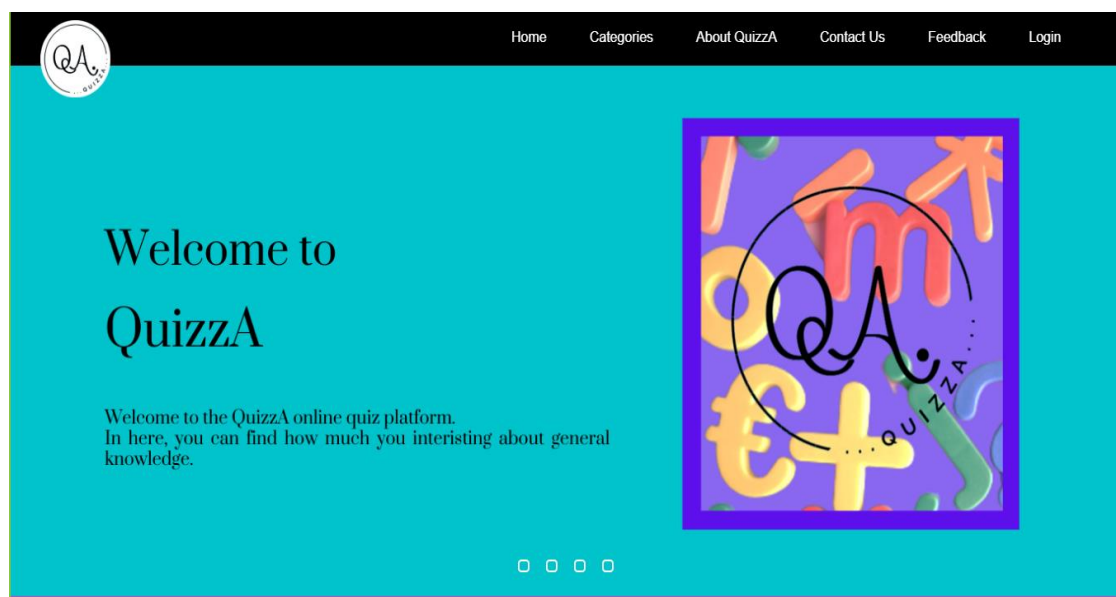
CHAPTER 4:   PROPOSED SOLUTION

In the "QuizzA" system, the main purpose is to develop a quiz web application that can everybody use without any age limit and to increase users' general knowledge. I used HTML, CSS, and JavaScript, as front-end development languages and PHP, and MySQL as back-end development languages to develop this web application. There are two (2) quiz categories and in these categories, there are three (3) levels.

In this web application, there are two actors. There are Admin and User. Admin is the owner of this system, who has full control of the system. The user is the person who is enrolling in the system from the outside environment. Every person can be a user of this system.

4.1 METHODOLOGY

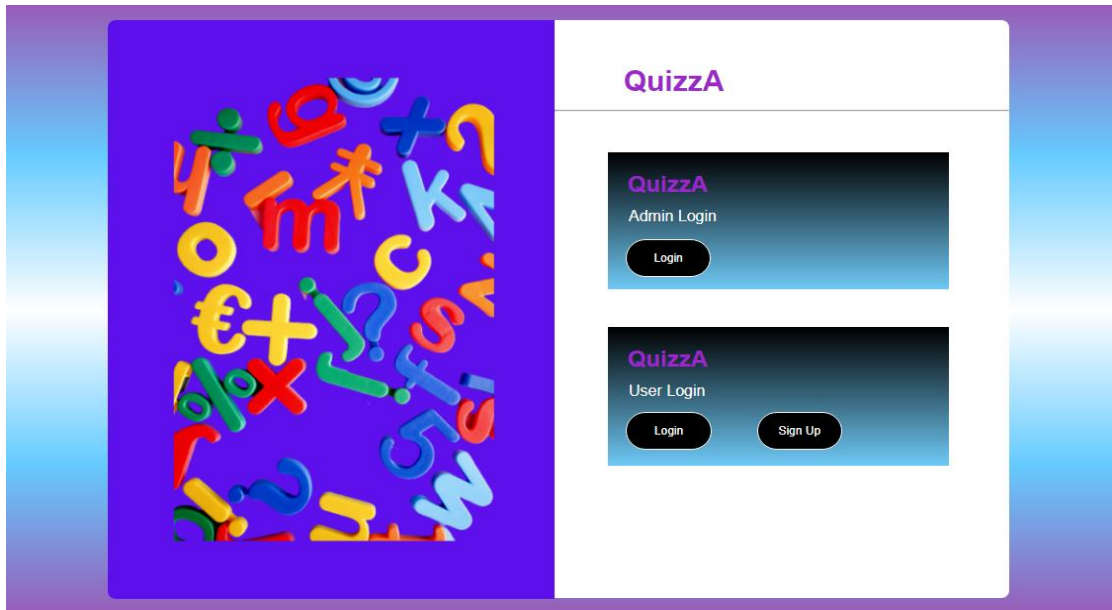In this methodology part, you can know how this QuizzA web application works.

In the first time when user coming to the QuizzA, he or she can see QuizzA's Home Page. Because, this is the landing page of this web application.

4.1: FIGURE 1: QuizzA – Home Page

In QuizzA, before user create a user account, user can see these following interfaces. Respectively, Home Page, Categories Page, About QuizzA Page, Contact Us Page, Feedback Page, and Privacy Page.

To create a user account, user has to click Login Page in the navigation bar. There is also a login for Admin. Then user has to click on "Sign up" button for create a new user account.

4.1: FIGURE 2: QuizzA – Login Page

In the QuizzA Sign up interface, user has to enter his or her User Name, First Name, Last Name, Email Address, Password, Confirm Password, and Select an account type as User. Then click on "Sign up" button. User can clear all the sections by clicking on the clear button and can again enter user details.

4.1: FIGURE 3: QuizzA – Sign up Page

But in this signup section, there are some few validation rules which are user has to follow to create a user account. Those are followings:
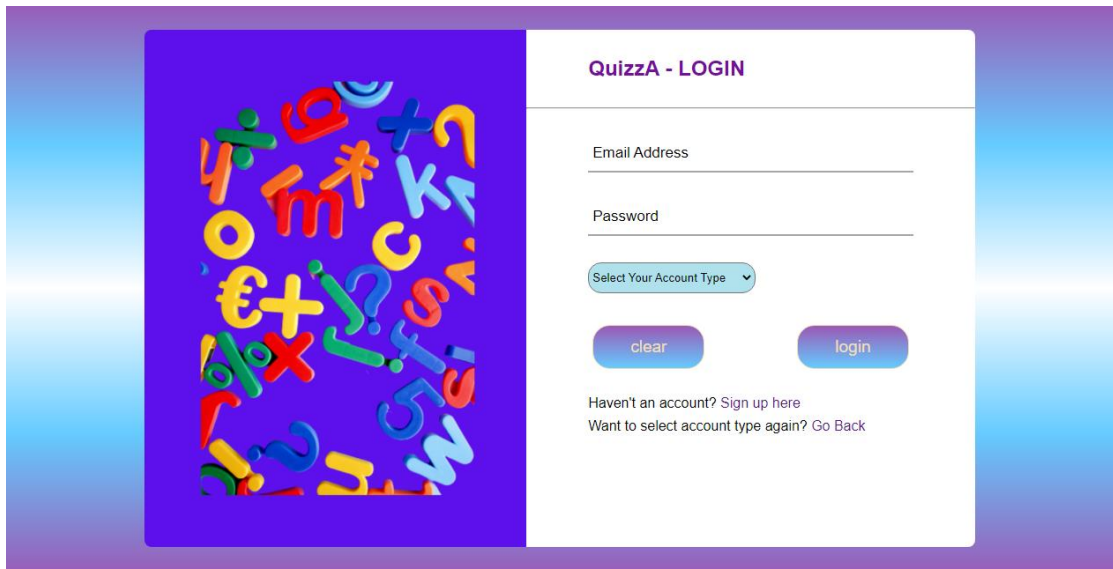
- A user has to enter an email address in valid type.
- Only one email address can use one time to register on the QuizzA platform.
- User password contains must 8 or more than characters.

- User password and confirm password are must be equal.

If these all validations or a one validation is not followed by user, then that user can not create an account till pass these validations. After user clicking on "Sign up" button, by not passing these validations, there will display new blank page with user entering details errors.

After clicking on the "Sign up" button, user will redirect to user Login Page. There user has to enter Email Address (Which is user provided in the Signup progress), Password, and Account Type as User again. (This interface also same to same in Admin Login Page)

4.1: FIGURE 4: QuizzA – User Login Page

After user create a QuizzA account, user will redirect to QuizzA's User Announcement Page. There user can see announcements, which are announced by QuizzA. Also, there is a "Log out" button for user.
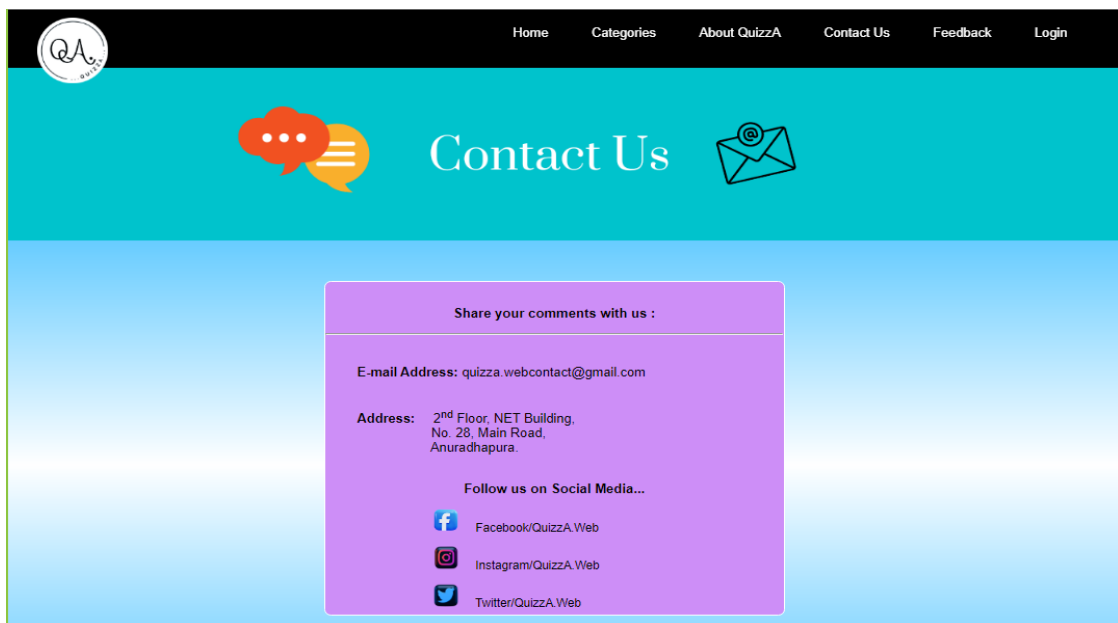

4.1: FIGURE 5: QuizzA – User Announcement Page

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In About QuizzA Page, there is a brief introduction about QuizzA.

4.1: FIGURE 6: QuizzA – About QuizzA Page

Here is the Contact Us Page of QuizzA. So, after creating an account, if user has forgot his or her password or user want to change email address, they can send us a mail to QuizzA's email address for requesting their passwords. And Admin will give a good response to their requesting mails.

4.1: FIGURE 7: QuizzA – Contact Us Page

In Feedback Page, there user can share his or her ideas with QuizzA. Also, in the Feedback Page, there is a link on the top of the page to go to User Announcement Page.

4.1: FIGURE 8: QuizzA – Feedback Page

In every page, of the navigation bar, there is a link in the bottom of those pages to go to the Privacy Page. In the Privacy Page, user can know about which data are QuizzA collect, is QuizzA sharing user details with other 3rd parties or not? likewise these some user side questions.

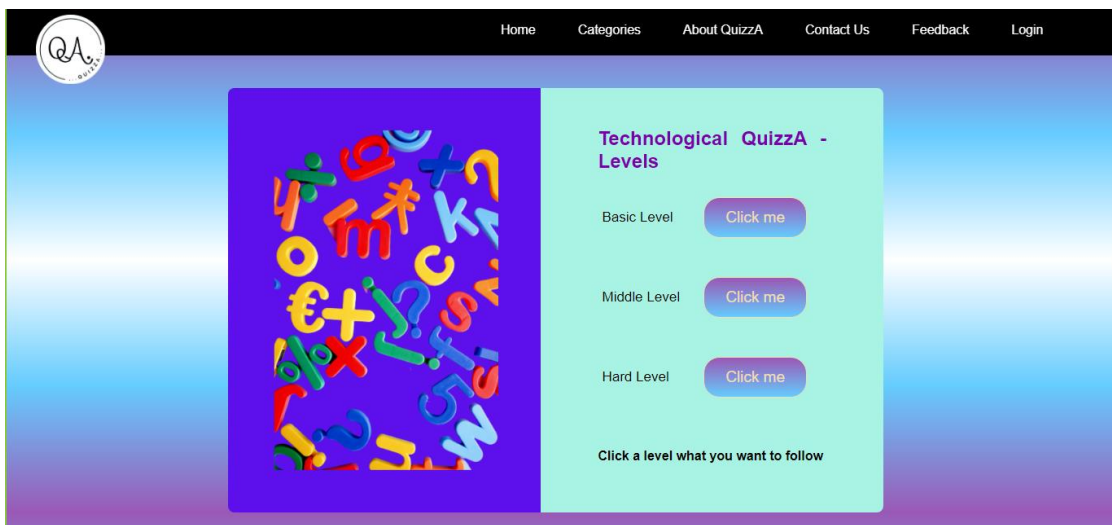**4.1: FIGURE 9: QuizzA – Privacy Page**

So, after user creating an account successfully, user can go to Categories Page for choose quiz category.

In the Categories Page, there are two categories which are user has to choose. Which are named Technological QuizzA and Geographical QuizzA. After clicking on the "Submit" button, one of this two categories, user will redirect to again to User Login Page. And there, user has to enter login details again. In here, some user clicking "Submit" button before create an account, he or she have to create an account then can go for quizzes.
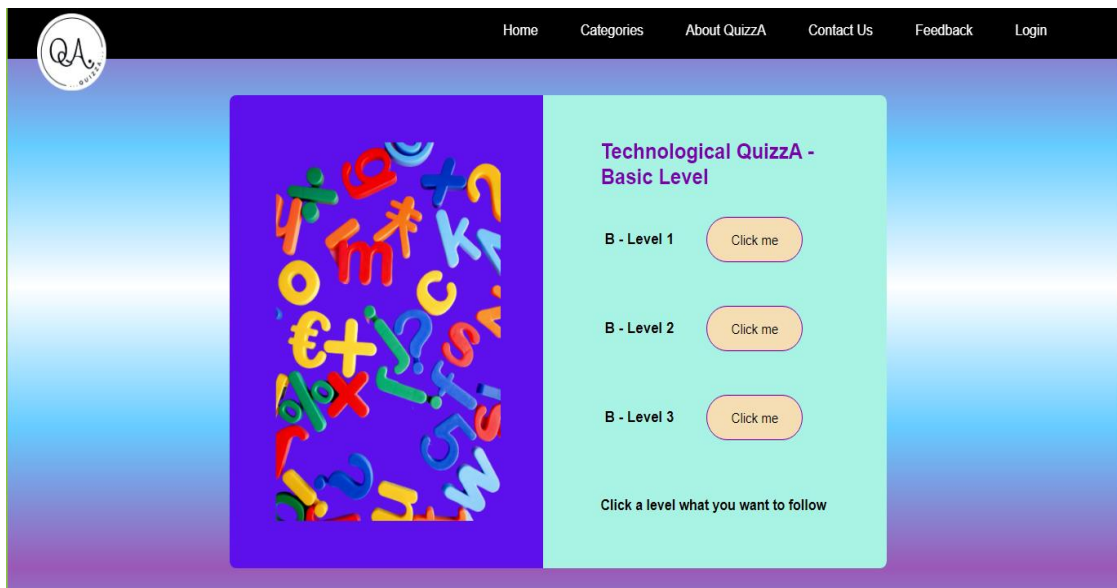

4.1: FIGURE 10: QuizzA – Categories Page

a.) After login, if user chosen Technological QuizzA, user can see this interface. Also, in the Geographical QuizzA, has included this interface same like this. In this interface user can select a level among the Basic Level, Middle Level, and Hard Level. In every level, of Technological QuizzA and Geographical QuizzA, there are those three (3) levels and all three (3) levels has included three (3) level parts.
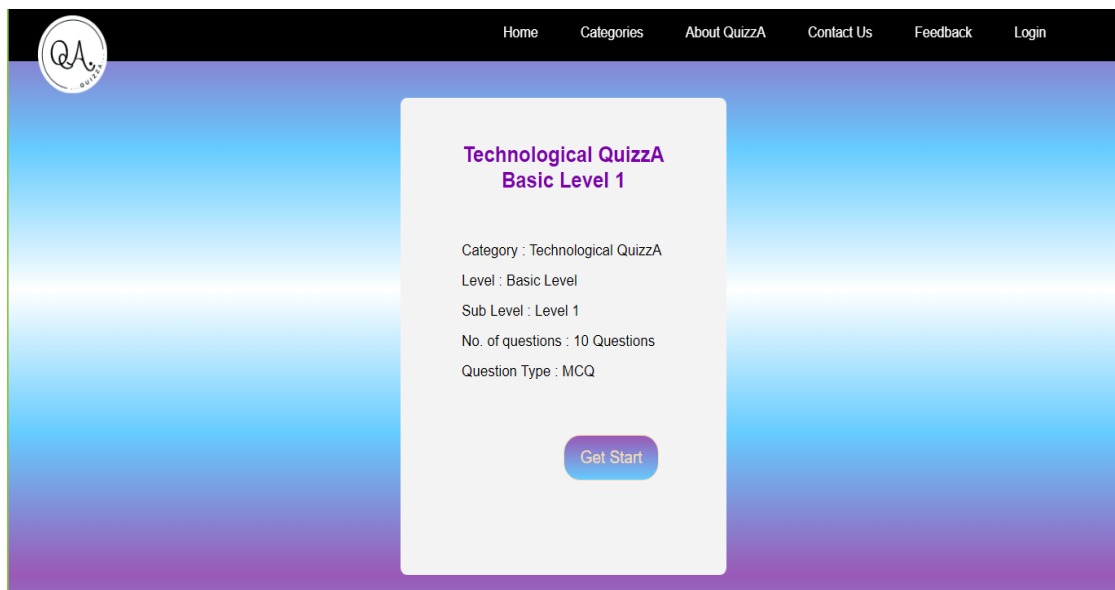

4.1: FIGURE 11: QuizzA – Level Choosing Page

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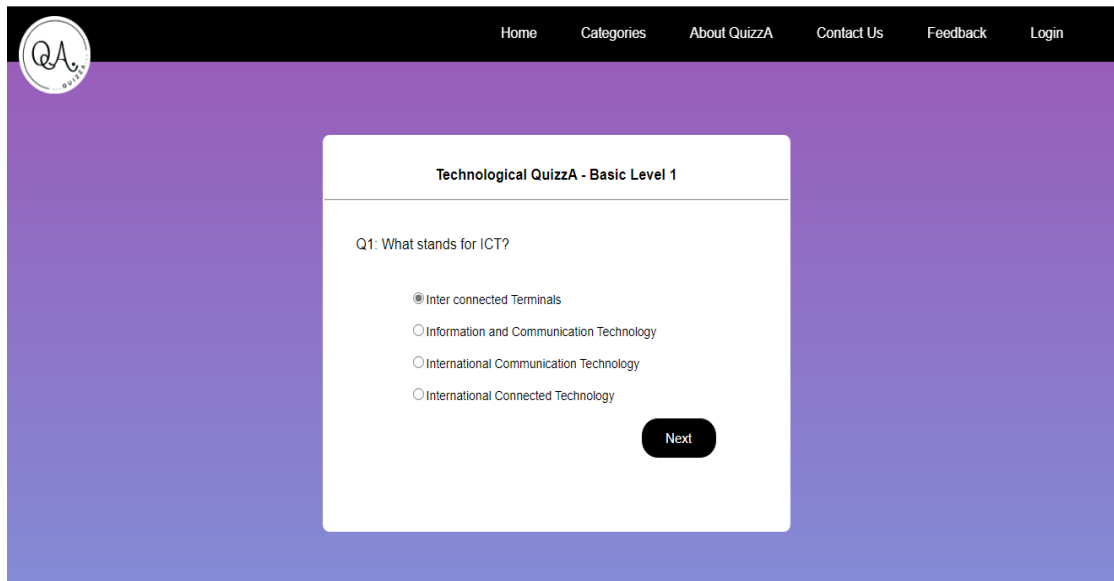b.) In here, if user choose basic level from these three (3) levels. Then user can see the following interface.

4.1: FIGURE 12: QuizzA – Level- Part Choosing Page

c.) If user select "B – Level 1", user can see QuizzA Level details about in this level part.
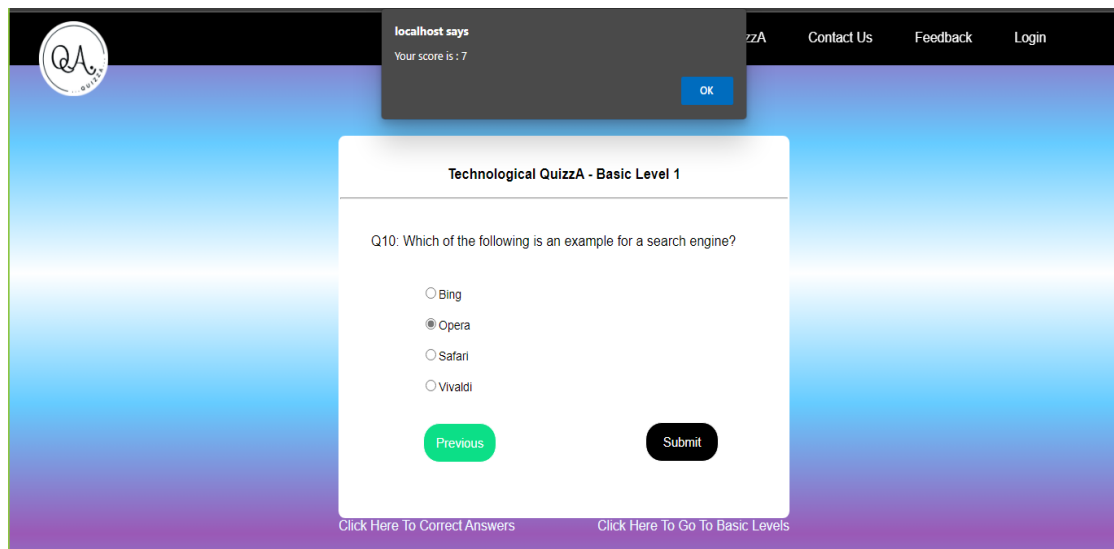

4.1: FIGURE 13: QuizzA – Level- Part Details Page

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d.) After user clicking on "Get Start" button, user can see the first question of that Basic Level, B- Level 1 Part.
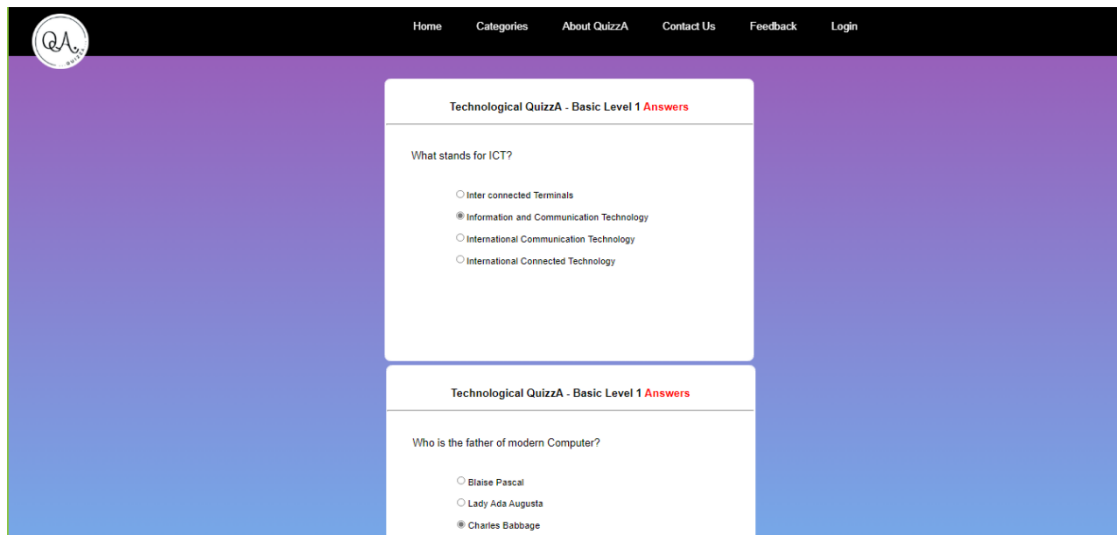

4.1: FIGURE 14: QuizzA – First Question Page

e.) Here, user can select an answer and click "Next" button to go next question. And from second question, there is a "Previous" button for go to again first question. After user answering 10 questions in this Basic Level, B – Level 1 Part, clicking on "Submit" button, user can see his or her scores on the top of page pop-up message box. And clicking "OK" button, QuizzA giving a message to user, there are links in the bottom of this page to go to again levels and to show answer sheet for those followed questions.
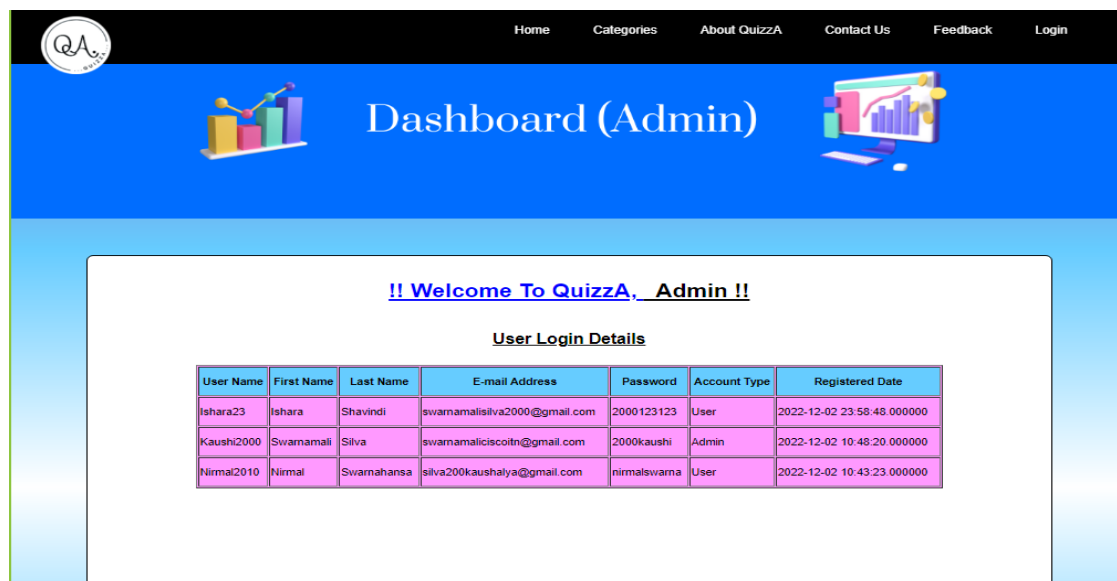

4.1: FIGURE 15: QuizzA – Last Question Page

4.1: FIGURE 16: QuizzA – Answer Sheet Page

So, I described above in a.), b.), c.), d.), and e.) how I managed QuizzA's question levels, level parts, questions, user scores, and answer sheets. All of these parts are included as same as Technological QuizzA and Geographical QuizzA.
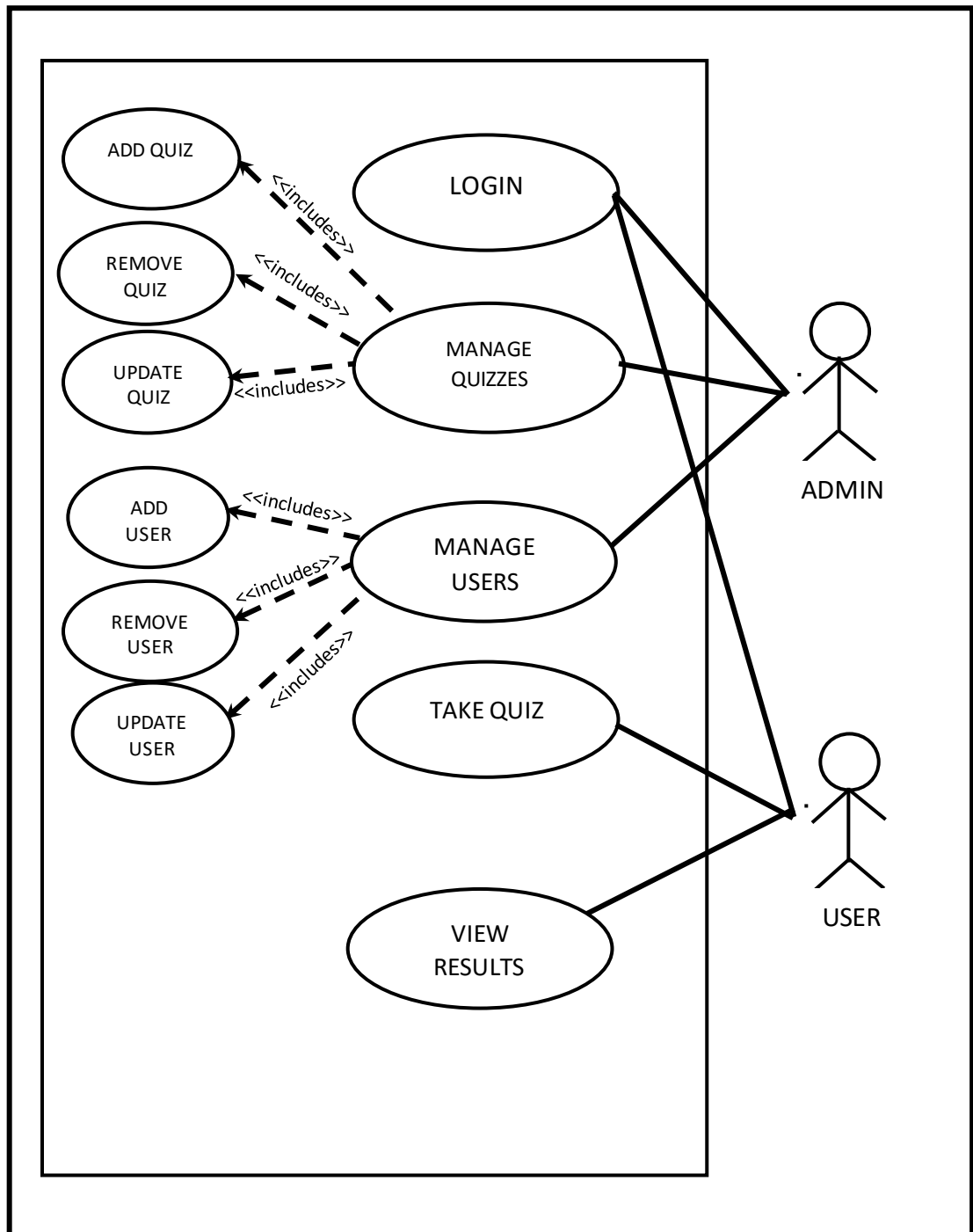
Also in the Admin Dashboard, there admin can see who are the registered users on the QuizzA platform.

4.1: FIGURE 17: QuizzA – Admin Dashboard Page

So, here, you can know about **"how QuizzA web application works"?**

CHAPTER 5:   USE CASE DIAGRAM

5.1: FIGURE 1: USE CASE Diagram for QuizzA

CHAPTER 6:   DISCUSSION

After starting to develop this QuizzA web application, I faced some challenges to achieve till my last goal. There are some of few challenges that I faced while creating this web application also I learned some things to do by facing those.

Firstly, I had to do how to manage QuizzA's user interfaces to make proper quiz website. After browsing some websites I started to plan my web application user interfaces. And I got a problem that how to manage questions in category wise. Then I planned to divide those questions into two categories and in categories, divided into 3 level, and after 3 parts in respectively.

I had to find more questions for QuizzA. I browsed the Internet and downloaded Advanced Level General Information Technology Examination past papers in English medium and Ordinary Level Geography English medium past papers to collect questions.

After creating those user interfaces, I wanted to add Admin Login, User Sign up, and User Login for QuizzA. Then I followed some video tutorials on the You Tube by following this topic. After following video tutorials, I learned how to add login to a website using PHP. Because I didn't know anything about before how login is works before creating QuizzA. In here, I learned that how to redirect to another web page after login using PHP.

There is a major challenge that I faced is creating this web application. That is how to create a database and how to connect that database into webpages that I created for QuizzA. After following video tutorials, I learned to do this task and started to work on my web application back-end progress. Because this is the first time that I tried to work on back-end languages in a web application.

CHAPTER 7:   CONCLUSION

Here is the conclusion about QuizzA web application.

There are some strengths of the QuizzA.:
- QuizzA has user friendly user interfaces.
- Easy to access for the user and easy to learn.
- There is included feedback page to get user feedback to know about user ideas and can improve QuizzA using their feedback.

Also there are weaknesses of the QuizzA.:
- After getting scores user not met any cheer up message.
- After Basic level, each level has not included a level lock for cheer up user.
- Social media login plugins have to be introduced to the web application to get more publicity for QuizzA.

FUTURE WORK

This web application has some area where improvement can be made. Following are the future works I planned to do in my next level.

- Expand the web application to include more questions in different areas in category wise.
- Develop a digital timer for time counting to getting answers from users in proper.
- Add a clear selection for every question.
- Show correct answer on time after user clicking on an answer for a question.
- Add a quiz level lock and issue level completing badge for completing quizzes by user.
- Develop web application to give a cheer up message for after user completing a level.

CHAPTER 8: REFERENCES

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