

School of Information Technologies
Faculty of Engineering & IT

ASSIGNMENT COVERSHEET GROUP ASSIGNMENT

Unit of Study: Mobile Computing

Assignment name: Quiz App for IT Rookies

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Abstract

This app is going to be designed for learning basic programming concepts which will be efficient for users to gain programming knowledge and prepare exams. This project proposal aims to clarify the original idea and scheduled everything that will be done in this small app project. It includes five parts: **Background and Significance, Related Work on Quiz Apps, Problems and Solutions, Draft of Interface Design, Main Functions Overview, Techniques and Schedule, Reflections and Expectations.** In the Introduction and Objective, the motivation of this project and the purpose of the final app will be discussed. Through make a parallel analysis of similar quiz apps in apple store, the benefits of this app will be introduced. Also, the draft of user interface design will be explained in detail. In the end, the schedule of this project will be displayed.

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1 Background and Significance

As a rookie of IT domain. I felt it was so hard to handle with the basic concepts of IT programming languages such as Java, Python, Nodejs and so on as well as some protocols and principles in network. I studied civil engineer before I came USYD, but I am so interested in learning new things in new area of IT. A quiz in game style that can also be called a mind sport can help students or spur them to attempt to answer questions in handset. In this way, rookies of IT could build confidence and motivation for learning boring theory.

2 Related Work on Quiz Apps

Before I create ‘quiz app for IT rookies’, I have done a research about characteristics of good feedback which may be the most important elements of improving productivity of learning new things. I will make a comparison with two apps in quiz subclass. All of them are free for users.

1) Quizlet(Inc, 2017)

In Quizlet, the users could practice and master knowledge more interesting. The users can create their own flashcards and study sets or choose from millions created by other students. More than 20 million students study with Quizlet each month that makes studying languages, history, vocabulary and science more simple and effective. Study are accompanying with charts, maps, images and figures

2) Solo Learn(Python, 2017)

Solo learn collected 12 programming languages, including Python, HTML, CSS, JavaScript, C++, Java, PHP, SQL, Ruby, JQuery, C#, Swift.

the users can learn all the programming languages listed above through interactive lessons, code in the mobile code playground, play with friends and peers, and discuss to learn or help others learn.

Two apps I mentioned before are both fantastic for users. But for Quizlet, developing images and cards is not suitable for learning IT. Coding stuff is the main points in IT domain. For Solo Learn, it provides a super fantastic interface for users to program in any mobile platform, which will be a very creative way to learn programming. But it does not provide more details in IT theory and no quiz after that which may be the only shortcoming for this app.

For my own app, it does not simply show “right” or “wrong” outcome is not enough, which makes no difference for learner’s knowledge retention. The main characteristic of my app is good feedback that targets to specific error—it shows the learner the connection between

specific query, their incorrect answer, study material surrounding the instance of incorrect answer, and correct answer in wider context.

Furthermore, wrong answers are not random. There's usually the same misconception a learner has that can be traced through the majority of their incorrect answers. Help trace these down and correct them with targeted feedback.

3 Problems and Solutions

3.1 Problems

I have searched many quiz apps for my project model but I failed to find a quiz app for IT rookies. Frankly speaking, I am a rookie in this domain, but I have full energy to learn new things in IT domain. Although I am working hard for get daily job done, if I have a proper way to review my knowledge anytime and anywhere, I can grow up fast every day. During this term, I have a chance to design an IOS app for myself in mobile computing in order to help other rookies like me to build confidence in IT learning.

3.2 Solutions

This quiz app for IT rookies will be test among my classmates. All concepts and skills will range from basic to excellent level. The flowchart below shows the implementation and demonstration of login in process and using the application.

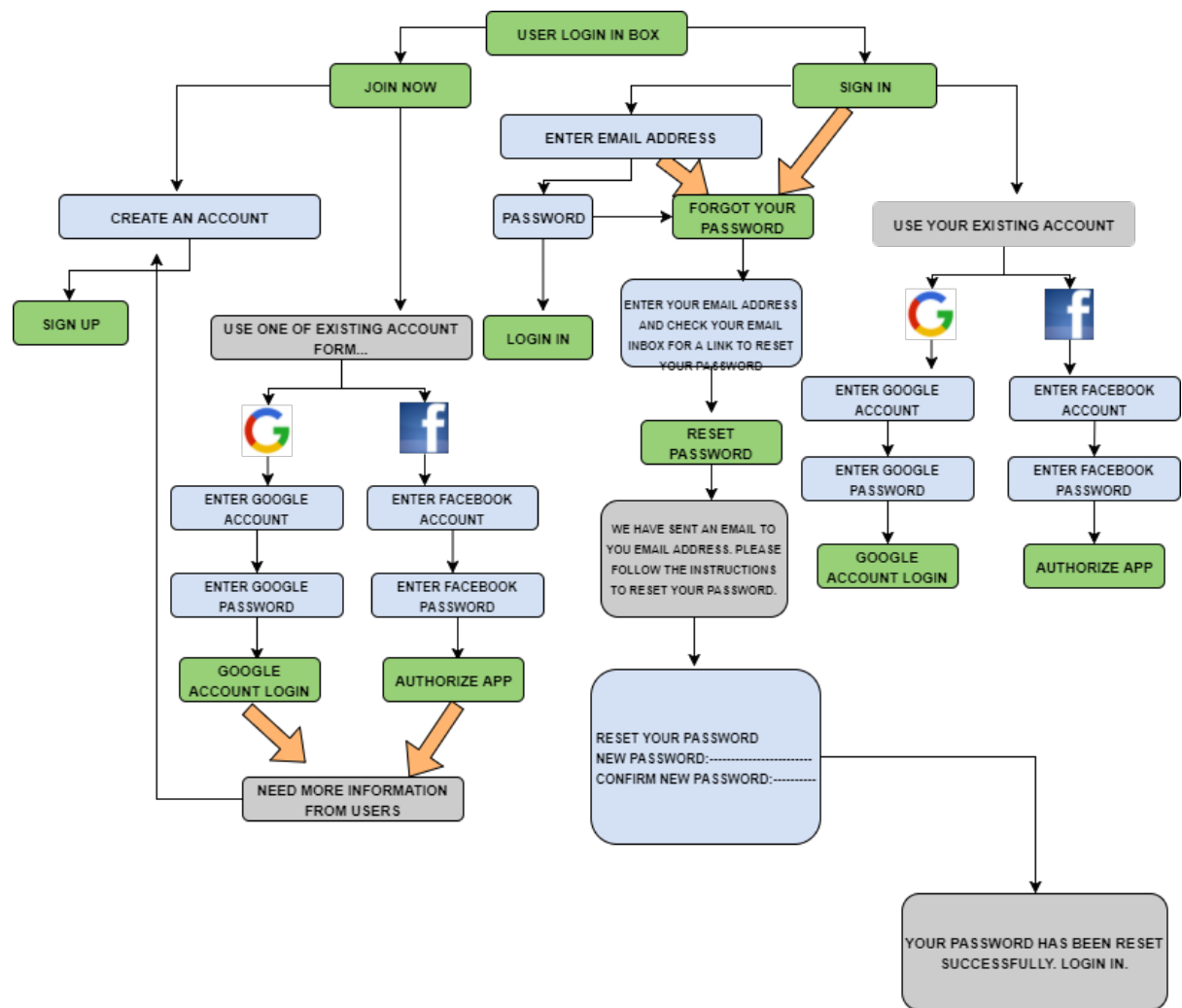


Chart 1 Flow chart of login in procedure

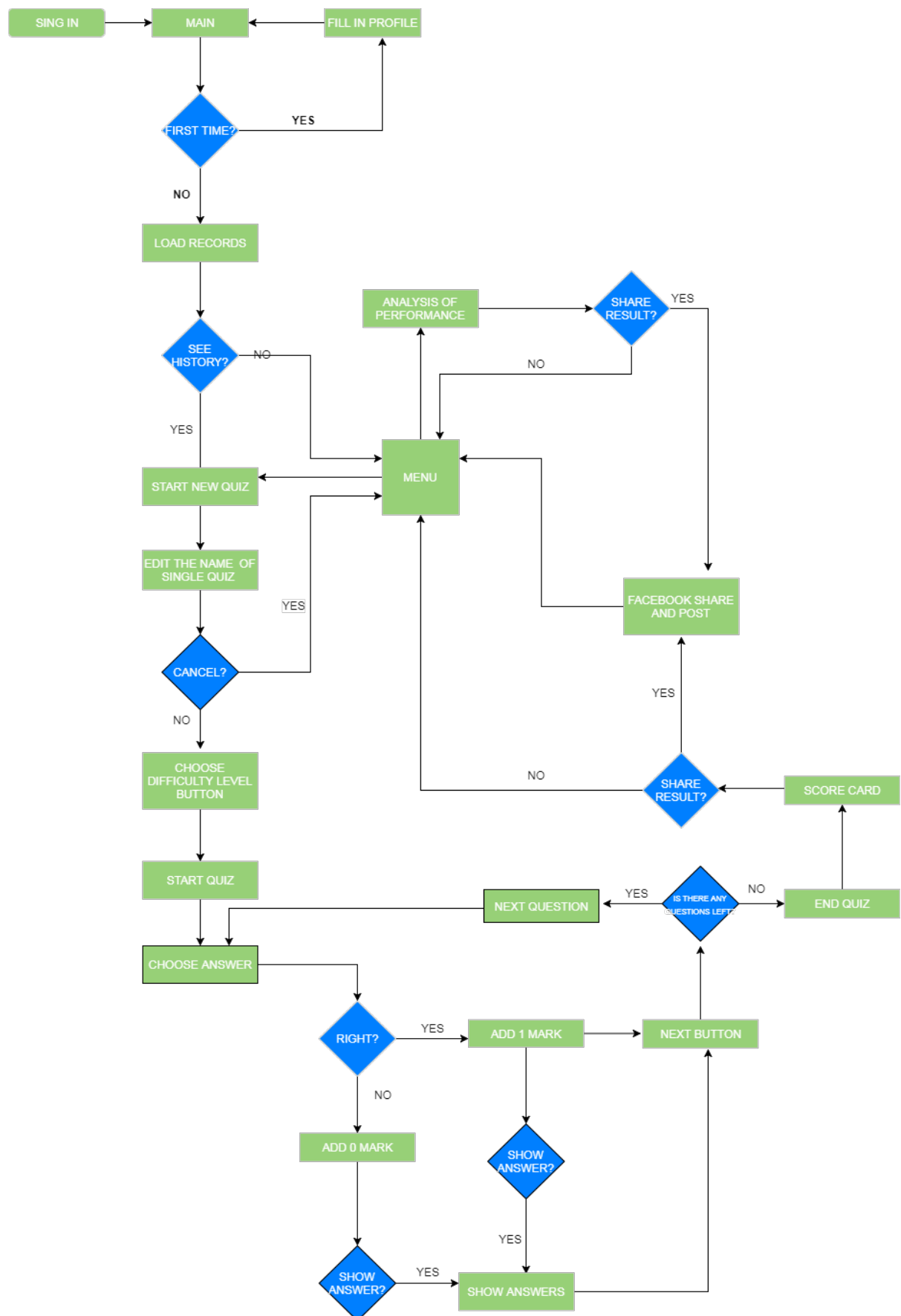
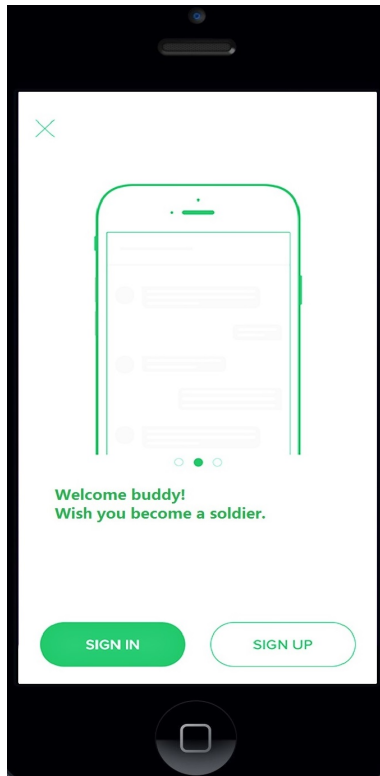
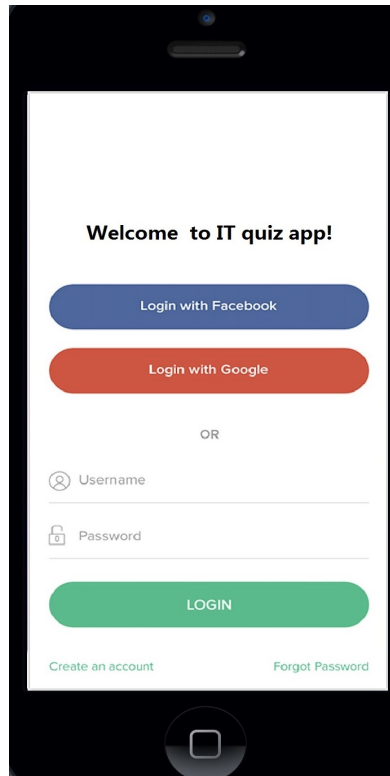


Chart 2 Logic flow of variable functions in the quiz app

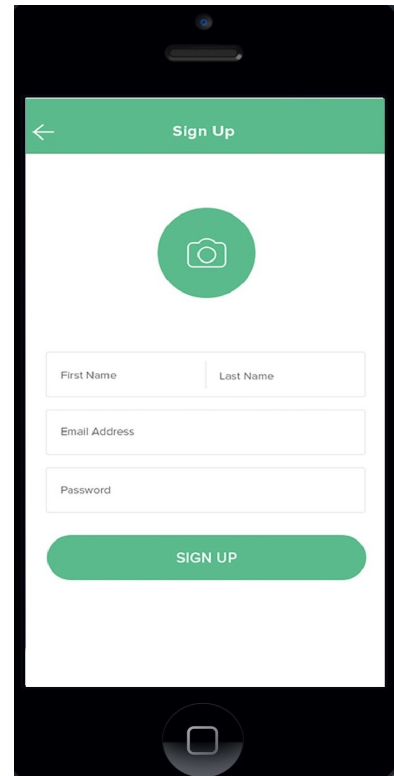
4 Draft of Interface Design



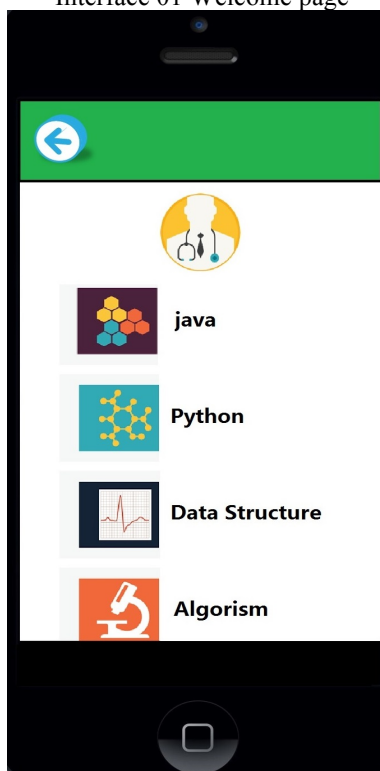
Interface 01 Welcome page



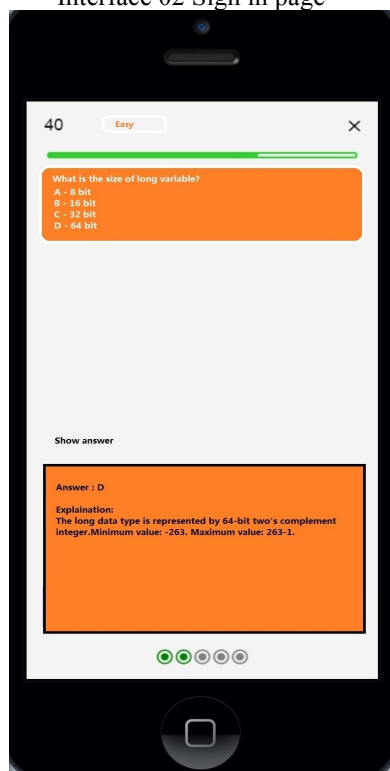
Interface 02 Sign in page



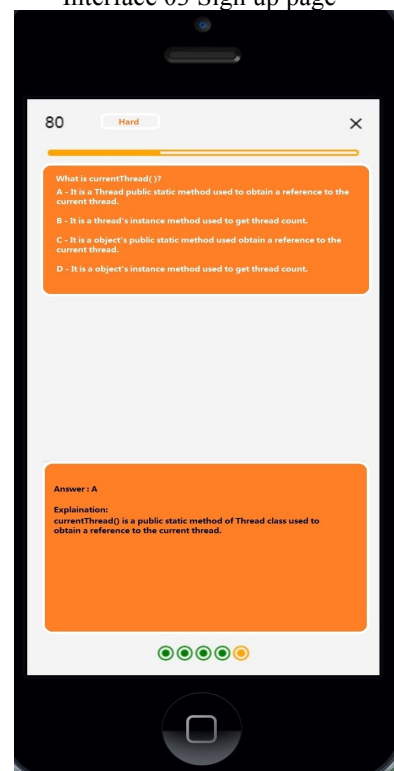
Interface 03 Sign up page



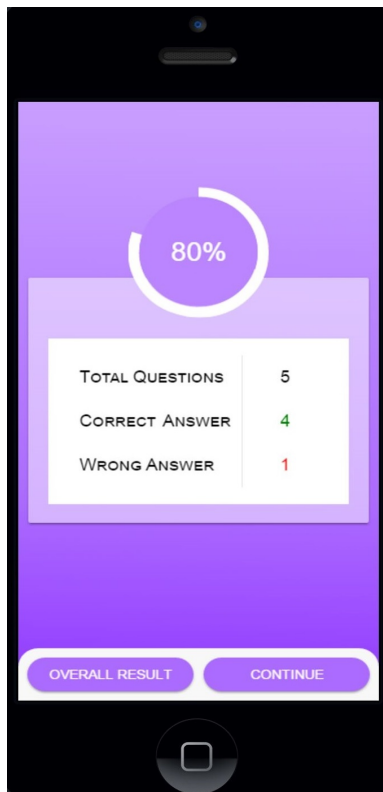
Interface 04 Categories of quiz



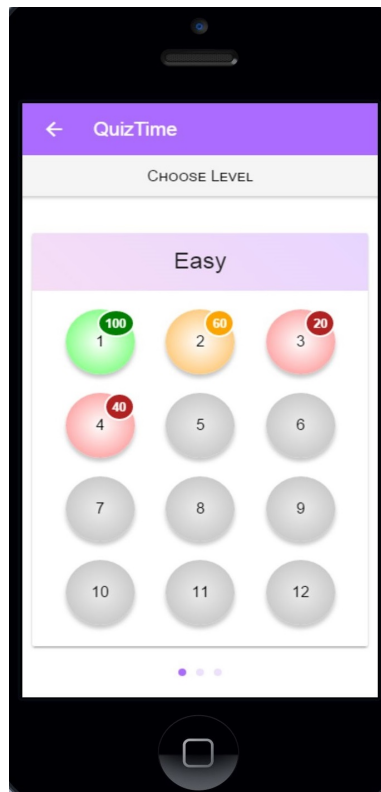
Interface 06 Easy level of quiz



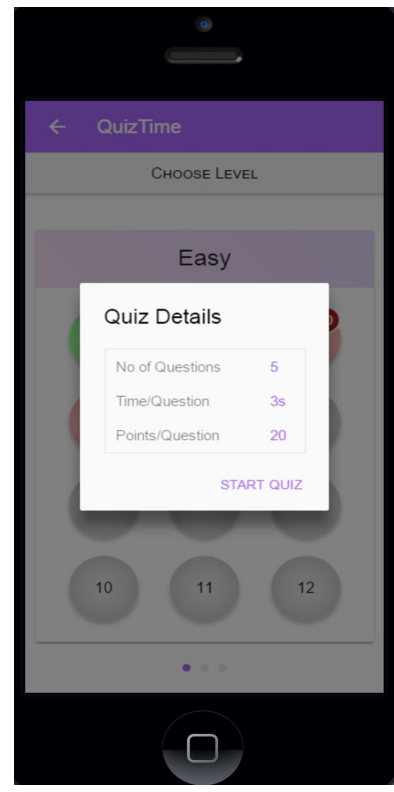
Interface 07 Hard level of quiz



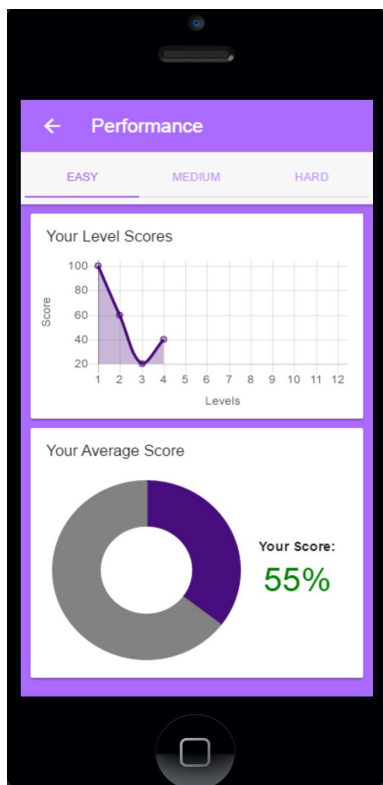
Interface 08 Single try result



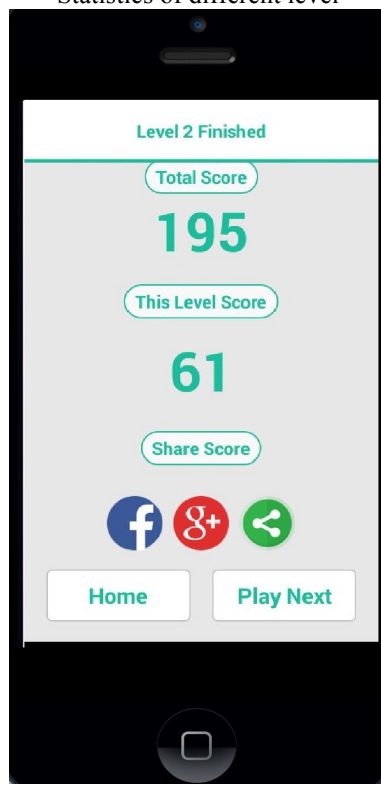
Interface 09
Statistics of different level



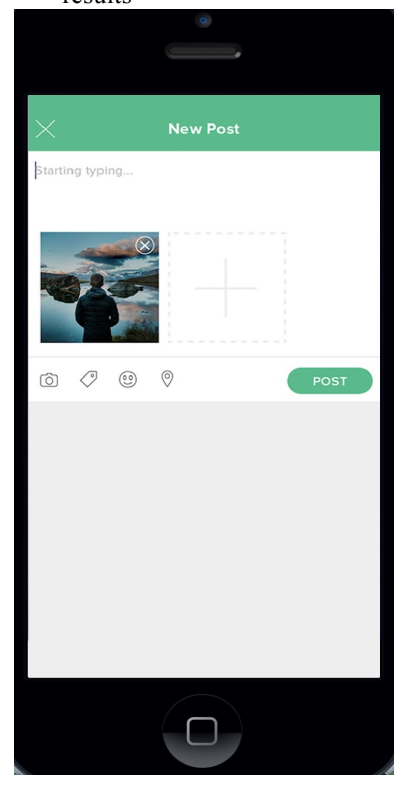
Interface 10 Details of quiz results



Interface 11 Analysis of user quiz performance



Interface 12 Share result with friends through third-party social media.



Interface 13 Post some photos or words to your friends.

5 Main Functions Overview

5.1 Welcome

In the 'Welcome' page, there are two buttons which will lead users to sign in or sign up their account of this app. By the way, the first page can show some encouraging words and photos for using this app.

5.2 Login

In the login procedure, the chart 1 above gives us full details of login steps.

5.3 Sign up and sign in

- 1) Allowing users to register a new account verified by email address or phone number with a password;
- 2) The strength of the password will be considered which should be mixed with numbers and words;
- 3) The length of password should be between 8 to 16 digits;
- 4) The users also need to provide a nick name;
- 5) Entire users' data will be stored in the database with encryption. The database may use Microsoft Azure platform or Amazon AWS platform;
- 6) If the user signs up successfully, it will sign a successful hint then turns to the home page with login statement automatically, if not it will sign a hint for reminding users about wrong with username and password.

5.4 Forgot password (Password retrieve process)

The users who use this function can find their password back through setting a new one, the verification codes from the email address or SMS from their phones that have registered before are required. There is also a 'resent' button for sending the verify email addresses or phone numbers again. If the verification code is correct, the user can set a new password then confirm it.

5.5 Score card

Users can use this function to review quiz history and see which part they lost much more marks. The score card will be categorized by 'Easy', 'Medium' and 'Hard' levels. In each level, users could find out the quiz finish date and marks. All explanation of questions will be checked by users. In this function, users can also use 'quiz details' to review those questions they feel hard to solve.

5.6 Categories of different programming knowledge

Users can use this function to select categories in different IT domains very fast. Users could start to answer the questions under on particular category such as Java, python, data structure and algorithm. In the test content, users will tick one answer and then click the 'next question' button, if the answer is correct, a highlight check mark will occur, otherwise, a highlight of incorrect sign will appear and show the correct answer with a check mark. If you pick wrong answer, you can choose 'Show answer' to get details of explanation for this question. The users could learn more in this method. Users can use 'Exit' button to quit the test anytime. When users have finished all the questions in one section, the app will alert users that the section ends. After that, users could see the final report for quiz and back on menu page.

5.7 My history

Users can locate all the records of quiz very quickly. This function will help users to know the weakness of learning process. For example, when users go over the history with categories, the percentage of wrong answers in one particular category could be seen as criteria.

5.8 Share and post function

The share and post function is a bridge to connect those who are participating in quiz app. In this way, the surroundings of competition and helping each other will be built inside this small group. All users will encourage themselves to use this quiz app to follow others learning process.

5.9 About me

It will provide some contact link like Facebook, twitter or email on this page for supporting the ways to feedback.

6 Techniques and schedule

6.1 Involved techniques

I will use the newest Xcode 10.0 and swift 3.0 to develop this app. Although similar quiz apps have been sold in Google store and Apple store right now, but this app is designed for IT rookies. I have not found the same app in online stores. This app seems not so complicate but it is really a good exercise for rookie like me to finish an IOS app by myself. I will learn by doing in this project for developing my first IOS app. In the very beginning, I will study how

to use storyboard and layouts to design UI of my app. After that we are going to learn about the 'Core Data' which could manipulate data in local database. To the next step, I will try to move data to cloud computing platform such as Microsoft Azure and Amazon AWS. During this process, I will learn how to handle all the issues about data storage and transmission online. At last, I am going to consider more about UI design and how to use open source library including the using of a third-party SDK or API, as well as some simulation test techniques.

6.2 Schedule

Week 1: Get familiar with Xcode and Swift 3.

Week 2: To Read the project requirements very carefully and come up with an idea of assignment.

Week 3: Make a decision about the App's type that I plan to do.

Week 4: Start to write project proposal.

Week 5: Finish the project proposal.

Week 6: Search relevant information on the Internet for my project.

Week 7: Start programming.

Week 8: Identify basic 'Tableviews' for each functions in Xcode.

Week 9: Finish main UI design for each function. And debug the programming.

Week 10: Finish the demo and try to run it on phones.

Week 11: Modify and finish UI for the application.

Week 12: Package the application and publish the final application.

Week 13: Submit the application, install it into Iphone and make a presentation.

7 Reflections and Expectations

At the end of writing proposal, I found that writing a beautiful and clear proposal is a hard job, especially for a rookie like me. I am not so familiar with everything in starting up a new app. Reading different documents about coding and follow the steps of tutorial training in designing UI are both critical for me to come up with an idea. Although I have finished a simple proposal but I think it not enough to complete an app easily. From front-end to back-end programming, there are lots of things to do and too much nutrients to absorb in the future. I wish I could finish this app by my own. I believe through this app developing experience, I can equip with lots of skills of independently solve problems in developing new software which will benefits my future career in IT domain.

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