

AL-QURAN BUDDIES E-HAFAZAN
MANAGEMENT

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AL-QURAN BUDDIES E-HAFAZAN MANAGEMENT

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ABSTRAK

Hafazan merupakan satu kemahiran mengingati ayat – ayat al-Quran dengan baik walaupun seseorang itu mungkin tidak memahaminya. Inilah tanda kehebatan al-Quran sebagai mukjizat yang boleh dihafal berbanding dengan kitab Taurat, Injil atau mana – mana kitab tulisan manusia yang sukar dihafal. Projek ini akan memberi tumpuan untuk membangunkan laman web untuk sesiapa sahaja yang ingin menghafal ayat – ayat suci al-Quran. Sistem ini membantu pengguna untuk menghafal al-Quran di mana mereka boleh memasukkan input atau kata kunci (ayat) menggunakan papan kekunci Arab dan rakaman suara. Jawapan (teks) kemudian akan dibandingkan dengan data di dalam pangkalan data dan segera mendapat hasilnya. Sistem ini juga akan menunjukkan kemajuan hafazan yang telah dilakukan oleh pengguna. Maksud projek ini adalah untuk membantu seseorang belajar dan menghafal al-Quran dengan cara yang senang serta mudah. Objektif projek ini adalah untuk mengkaji dan mengenal pasti kaedah pembelajaran dan menghafal al-Quran, untuk merekabentuk dan membangunkan sistem prototaip untuk Al-Quran Buddies E-Hafazan Management menggunakan laman web yang dapat membantu mempelajari dan menghafal al-Quran dan untuk membuat modul ujian untuk menguji hafazan, pengguna boleh memasukkan input atau kata kunci menggunakan papan kekunci bahasa Arab dan segera mendapatkan hasilnya. Mereka juga boleh menguji hafazan mereka dengan merakam audio. Metodologi yang digunakan dalam projek ini ialah Metodologi RAD yang terdiri daripada empat fasa iaitu analisis, reka bentuk, pembinaan dan ujian. Selepas pembangunan sistem, pelanggan diberikan ujian penerimaan pengguna (UAT) untuk memastikan bahawa semua fungsi menepati keperluan tanpa sebarang kesilapan. Ujian UAT memastikan sistem telah mencapai matlamat. Sepanjang projek ini dapat disimpulkan bahawa menghafal al-Quran memerlukan lebih banyak perbincangan dan penyelidikan yang berterusan. 'Al-Quran Buddies E-Hafazan Management' dapat diperbaiki dengan banyak cara dengan mengintegrasikan ciri-ciri tambahan dan peningkatan untuk menjadikannya lebih efisien untuk pengguna.

ABSTRACT

Hafazan is a skill to remember the verses of the al-Quran well although one may not understand it. This is the sign of the greatness of the al-Quran as a miracle that can be memorized compared to Taurat, Injil or any human scripture book that is difficult to memorize. This project will focus on developing website for anyone who wants to memorize the holy verses of the al-Quran. The system help user to memorize al-Quran where they can key in the input or keyword (verses) using Arabic keypad and voice recording. The answers (texts) then will be compared with data in database and immediately get the results. The system also will show the progress of hafazan that had been done by the users. The aim of this project is to help someone learn and memorize the al-Quran in an easy and convenience way. The objectives for this projects are to study and identify the method of learning and memorizing al-Quran, to design and develop a prototype system for al-Quran Buddies E-Hafazan Management using website based that can help to learn and memorize al-Quran and to create test module to test hafazan, the user can key in the input or keyword using Arabic keypad and immediately get the results. They also can test their hafazan by recording an audio. The methodology used in this project is the RAD Methodology which consists of four phases namely analysis, design, develop and testing. After development of the system, client was given the user acceptance test (UAT) to ensure that all function work according to the requirement without any error. The UAT testing ensure the system have achieved the objective. Throughout the project, it can be concluded that memorizing al-Quran needs more discussion and continuous research. 'Al-Quran Buddies E-Hafazan Management' can be improved in many different ways by integrating additional features and enhancements to make it more efficient for the users.

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LIST OF ABBREVIATIONS

AQBEM	Al-Quran Buddies E-Hafazan Management
SRS	Software Requirement Specification
SDD	Software Design Document
UAT	User Acceptance Test

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

The al-Quran is one of the most important elements in the life of Muslims. The application of the values of the al-Quran is very important within the Muslim community. Al-Quran education is aimed at building a community of 'taqwa', fair society based on love, compassion, brotherhood and community tolerant, responsible, free-minded, democratic, not tyrannical, not arrogant and people who follow the guidelines of the al-Quran. The most important objective of al-Quran education is teaching people to dedicate themselves to Allah. S.W.T. In community which is struck by the current globalization, the learning of al-Quran in a memorable way can be a catalyst towards forming the mind of photography that will give birth to a generation of 'hafiz', 'alim', 'dai'e' and professional at the same time fulfilling the goals of al-Quran education.

Memorizing ('Menghafaz') is one of the most important methods of deepening the knowledge of al-Quran. 'Hafazan' is the process used to store knowledge. 'Menghafaz' requires a power of mind in a person do it. While memorizing something that been learned and sharpening the memory through memorization is the best way to maintain memory and brain intelligence.

The history of al-Quran learning by memorization begins with the fall of the first verse of the al-Quran to Prophet Muhammad S.A.W. As we know from various scripts that he is an ummah prophet, who does not know to write and read. In that state of mind, the Prophet Muhammad S.A.W. receive the al-Quran from 'Malaikat Jibrail' and then pass it on to the companionship through 'hafazan'. The process of descending the Quran in stages help and facilitate the Prophet S.A.W. to convey it to his companionship, who

later memorized and understood the contents. This non-urgent habit is maintained until it becomes one of the methods or ‘manhaj’ in memorizing the al-Quran.

Over the last few years, scholars, preachers and teachers are busy raising the al-Quran memorization program as a basic and major program. The al-Quran memorization programs are being run by many institutions, whether government or private institutions across the country. Across the world there are thousands of al-Quran memorizing centers with various strategies, approaches, methods, and techniques of memorizing through their various forms of institution. There are many forms of al-Quran learning centers such as schools, ‘madrasah’, ‘maahad tahfiz’, ‘pondok’ institutions, universities and others.

A person who wants to memorize al-Quran must understand the basic methods and technique of memorizing the al-Quran and generally there are five basic methods which are “Tahsin”, “Talaqqi” and “Talqin” (TAHSIN), “Tahfiz Jadid” (JADID), “Murajaah Sabqi” (SABQI), “Murajaah Manzil” (MANZIL) and “Murajaah fi Solat” (SOLAT).

1.2 PROBLEM STATEMENT

First problem is the method and technique that are used to learn and memorize al-Quran. As we all know there are many methods and techniques of learning and memorizing al-Quran. But the uses of those methods are different for each institution. In this project, the method of learning and memorizing al-Quran will be study and identify. From that, the method study will be implemented into the project.

Second problem is people nowadays don’t have time and busy to memorize al-Quran. They are busy with daily commitments that make they think that there’s no way they can go to al-Quran class. People nowadays mostly use their gadget such as laptop, smartphone and tablet in their daily routine.

On the other hand, as we all know after memorizing something someone will like to test their memorization skill. Including in hafazan, after memorizing it someone should test the hafazan in front of the teacher. They will test their hafazan by reciting the al-Quran verse by verse.

1.3 OBJECTIVES

The goal of this project is to develop an al-Quran Buddies E-Hafazan Management that will help user to learn and memorize the al-Quran in an easy and convenience ways. The main objective of this project are:

- i. To study and identify the method of learning and memorizing al-Quran.
- ii. To design and develop a prototype system for al-Quran Buddies E-Hafazan Management using website based that can help to learn and memorize al-Quran.
- iii. To create test module to test hafazan, the user can key in the input or keyword using Arabic keypad and immediately get the results. They also can test their hafazan by recording an audio.

1.4 SCOPE

The scope of the project is for the user with any device that can run any web browser in their operating system. The users of the application are visitor, student, teacher and parents. The application will be developed using Sublime Text and Xampp for develop PHP language. MySQL will be used to support the entire system database management. The surah al-Quran that will be covered in this project are surah for daily practice. Surah that include in the project are “Surah Al-Fatihah”, and Juz 30 (‘Ammah) which consists of “Surah An-Naba”, “Surah An-Naziat”, “Surah Abasa”, “Surah At-Takwir”, “Surah Al-infitar”, “Surah Al-Mutaffifin”, “Surah Al-Inshiqaq”, “Surah Al-Buruj”, “Surah At-Tariq”, “Surah Al-Ala”, “Surah Al-Ghashiyah”, “Surah Al-Fajr”, “Surah Al-Balad”, “Surah Ash-Shams”, “Surah Al-Lail”, “Surah Ad-Duha”, “Surah Ash-Sharh”, “Surah At-Tin”, “Surah Al-Alaq”, “Surah Al-Qadr”, “Surah Al-Baiyyinah”, “Surah Az-Zalزالah”, “Surah Al-Adiyat”, “Surah Al-Qariah”, “Surah At-Takathur”, “Surah Al-Asr”, “Surah Al-Humazah”, “Surah Al-Fil”, “Surah Quraish”, “Surah Al-Maun”, “Surah Al-Kauthar”, “Surah Al-Kafirun”, “Surah An-Nasr”, “Surah Al-Masad”, “Surah Al-Ikhlās”, “Surah Al-Falaq” and “Surah An-Nas”.

1.5 REPORT ORGANIZATION

This thesis consists of five chapters. Chapter 1 discusses the introduction of this project. It is including the introduction, objectives, problem statement, thesis organization and scope. Throughout this chapter, the problem statement is identified where it leads to the development of the solution system.

Chapter 2 discusses on the literature review done information done for the project. Literature review includes the introduction about the study of the project in general, technique/method or technologies which are suitable to be adapted into the project and the source of reference.

Chapter 3 discusses on the methodology that is used in the project development. Throughout this chapter, the methodology chosen for the system development is stated and explained. The phases of the development are explained based on the methodology chosen. This chapter also includes the introduction, hardware and software and Gantt chart to be used in the project in detail.

Chapter 4 discusses on the implementation, system testing and the result. This chapter briefly explained on how the system been implemented according to the client's requirement. Next, it also discusses the test cases done for this system to ensure that the system requirement is verified and validated so that it is free from any bug. Then the test results were stated here.

Chapter 5 discusses on the conclusion of the project. It concludes the project that have been done, objectives that have been achieved, research constraints that includes the clarification on the constraints during develop the project and the system constraints. The future work to improve this prototype system also explained.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

The Literature Review for al-Quran Buddies Memorization Management will be described in this chapter. First part of this chapter is a review and comparison of the techniques used in memorize al-Quran. There are three techniques that will be make comparison which are ‘Tahsin, Talaqqi and Talqin (TAHSIN)’, ‘Tahfiz Jadid (JADID)’ and ‘Murajaah Sabqi (SABQI)’.

2.2 TECHNIQUES

In this section, it will discuss the comparison of techniques of memorizing the al-Quran. From Chapter 1, it has been stated that generally there are five basic methods and techniques of memorizing al-Quran. The basic methods and techniques are “Tahsin”, “Talaqqi” and “Talqin” (TAHSIN), “Tahfiz Jadid” (JADID), “Murajaah Sabqi” (SABQI), “Murajaah Manzil” (MANZIL) and “Murajaah fi Solat” (SOLAT). But in this section it will only cover and compare three types of technique which are “Tahsin”, “Talaqqi” and “Talqin” (TAHSIN), “Tahfiz Jadid” (JADID) and “Murajaah Sabqi” (SABQI).

2.2.1 Tahsin , Talaqqi and Talqin (TAHSIN)

‘**Tahsin**’ means ‘tajwid’ that is to improve the reading of the al-Quran to follow the al-Quran law of tajwid knowledge and this is obtained by the guidance of tajwid teachers. For those who do not have any basic about tajwid knowledge, to achieve satisfactory stage before begin new rote memorization, maybe take time about a month to twelve months depends on ability and achievements respectively. To begin new rote

memorization, it is better for those person to achieve satisfactory level of tajwid skills as well as having a smooth and unobtrusive (not stuck) reading.

‘Talaqqi’ is student’s reading in front of teacher towards verse or page that want to memorize or already memorized. Teacher will evaluate student’s reading quality so that it consistent with tajwid’s law. This is important to implement because if student memorize with wrong reading, so it will be really hard to correct the wrong reading that have been memorized. So, correcting verse before memorize is very easy than correcting verse that have been memorized.

‘Talqin’ is when teacher reads verse or page that want to be memorize or already memorized to students and students follow it individually or by groups. New or old memorized verse, the readings must always be checked and corrected by opening ‘mashaf’ (al-Quran) in front of teacher with above procedures or ways.

2.2.2 Tahfiz Jadid (JADID)

‘Tahfiz Jadid’ (new memorization) means verse or new page of memorization that will be memorize to be heard namely ‘tasmiq’ in front teacher without looking at ‘mashaf’ (al-Quran). Total of new memorization verse or jadid usually between half or one page per day depends on student’s capability. Exceed one page per day as jadid is not encouraged because it will burden the student when to do revision (‘murajaah’). Two or three pages per day as jadid only be given to certain students that have high memorization skills. Time taken for jadid is a lot on first, second and third day because after memorize it student have to repeat it, for instance between 20 until 70 times before be tasmiq in front of tasmiq’s teacher on the first day. It is better to repeat this jadid in ‘solat tahajud’ before be tasmiq in front of tasmiq’s teacher. Verse or page that have been memorized it still be considered as new verse on first month because it is still not yet entered into long-term memory. This new verse need to be repeated until 120 times.

2.2.3 Murajaah Sabqi (SABQI)

‘Murajaah Sabqi’ (revision on new memorization that pass) is do revision on memorizations’ verse that recently memorized and usually on the first month. This verse need to be repeat and tasmiq to teacher every day in first month. Total page for sabqi is half or one juz’. On the second and third day, this sabqi’s verse need to be repeat for

instance between 10 until 30 times then be tasmiq to teacher. On fourth until thirtieth day, this verse need to be repeat for instance between 3 until 10 times depends on the strength of one's memorization and be tasmiq to teacher. It is better for student to try read sabqi's verse on their solat before be tasmiq to teacher.

2.3 COMPARING THE TECHNIQUES

Table 2.1 shows comparison between three techniques which are “Tahsin”, “Talaqqi” and “Talqin” (TAHSIN), “Tahfiz Jadid” (JADID) and “Murajaah Sabqi” (SABQI) in term of purpose, advantages and disadvantages.

Table 2.1 Comparison between three techniques

Techniques	“Tahsin”, “Talaqqi” and “Talqin” (TAHSIN)	Tahfiz Jadid” (JADID)	“Murajaah Sabqi” (SABQI)
Purpose	Improve the reading of the al-Quran to follow the al-Quran law of tajwid knowledge and this is obtained by the guidance of tajwid teachers.	New page of memorization that will be memorize to be heard namely ‘tasmiq’ in front teacher without looking at ‘mashaf’ (al-Quran).	Do revision on memorizations’ verse that recently memorized.
Advantages	Reading in front of teacher towards verse or page that want to memorize or already memorized.	Total of new memorization verse or jadid usually between half or one page per day depends on student’s capability	Student must pass the memorizations’ verse that recently memorized.

Disadvantages	To achieve satisfactory stage before begin new rote memorization, maybe take time about a month to twelve months depends on ability and achievements respectively.	Exceed one page per day as jadid is not encouraged because it will burden the student when to do revision ('murajaah').	Total page for sabqi is half or one juz'.
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Based on methods or techniques that had been explain in Table 2.1 above, "Tahsin", "Talaqqi" and "Talqin" (TAHSIN) can be used to implement into the project. This is because the technique is suitable for someone that is new or just want to start memorizing al-Quran. Student learn tajwid's knowledge practically, only then begin to memorize. After it can understand and implement this tajwid's knowledge in reading of al-Quran, then it can begin to start memorize. It is better for someone to learn a bit about song of the al-Quran so they can read and memorize with certain rhythms allowed by syariah. Advantages of memorizing with song is it will be able to equalize reading rate and it's long short. It will feel more fun if can reciting the al-Quran with a particular song or rhythm. It can also imitate any qari that is the al-Quran reader who is recognized in today's Islamic world.

2.4 CONCLUSION

In a nutshell, throughout this project, this technique (TAHSIN) will be implement where the user can read surah of al-Quran that want to be memorize along with the audio of any reciter. So that the reading and punctuation is correct. The user can choose how many times they want to repeat the verse or surah depends on their capability. In this project, it will propose the user of the system to test their memorization (hafazan) of any surah. The user can key in the input or keyword using Arabic keypad and immediately get the results. It will tell the user whether their hafazan is correct or wrong including their understanding about tajwid.

CHAPTER 3

METHODOLOGY

3.1 INTRODUCTION

This chapter will explain about methodology of Al-Quran Buddies E-Hafazan Management (AQBEM). The methodology is a software or system development in software engineering which is a framework that is used to structure, plan, and control the process of developing a system. In this chapter also will describe techniques, development tool and instrument that will be used in the project. This project used Object Oriented Programming (OOP) approach which consists of Software Requirement Specification (SRS) and Software Design Document (SDD).

3.2 SOFTWARE DEVELOPMENT METHODOLOGY

3.2.1 Rapid Application Development (RAD)

This methodology is very appropriate method to be used in the project. The aim is to limit development time while expanding progress. So, RAD is most suitable methodology for this project which in its most fundamental form limits planning and intensifies prototyping. This RAD procedure enables developers to rapidly acclimate to shifting requirements in quick paced and constantly changing market. In other words, RAD is a type of software development that does not invest a lot of time or resources on planning and rather utilizes a strategy for prototyping to present the product.

RAD model depends on prototyping and rapid cycles of iterative development to accelerate development and evoke early input from clients. There are a few phases to go through when developing a RAD model including analysis, designing, building, and the final testing phase. These steps can be separated to make them more easily understandable and achievable. The phases involve in RAD is shown in Figure 3.1.

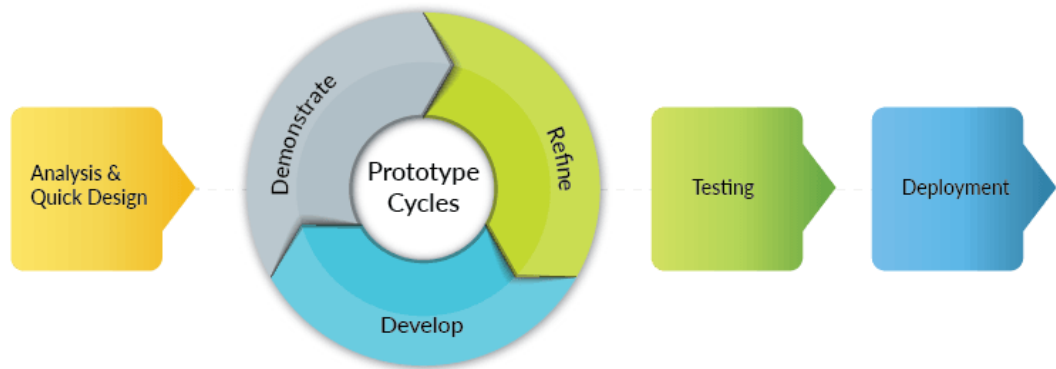


Figure 3.1 Rapid Application Development Methodology

This methodology enables rapid delivery as it reduces the overall development time because of the reusability of the segments and parallel development. Changing requirements can be obliged as when al-Quran Buddies E-Hafazan Management in development process, exchanges could happen when to add new requirement or adjust other requirement.

Basically, Rapid Application Development is a way to deal with building computer systems which combines Computer-Assisted Software Engineering (CASE) tools and techniques, user-driven prototyping, and stringent project delivery time limits into a powerful, tested, reliable equation for first class quality and efficiency.

In the analysis and quick design phase is the phase where to examine the aim of the system that are going to be developed. Once the system requirements have been figured out, an estimated project timeline should also been come up.

The another reason why this methodology is suitable for this project because of measurable progress. With frequent iterations, components, and prototypes waiting to be dealt with, progress on the overall project, also lesser portions, can be effectively estimated and assessed to keep up schedules and spending plans.

Lastly, because of compartmentalization of framework segments. Much similarly that that object-oriented programming practices keep objects and segments isolated from each other, RAD inherently has the same useful effect on the parts produced during development. By forcing designers and developers to make parts that are functional and independent all alone, to be utilized as a part of an iterative discharge or prototype, every

component inside the overall software system is compartmentalized and in this way effortlessly modified as the necessities of the product advance.

3.2.2 Product Perspective

The context diagram includes the interaction between al-Quran Buddies E-Hafazan Management with four users which are visitor, student, teacher and parents. Figure 3.2 show the context diagram al-Quran Buddies E-Hafazan Management.

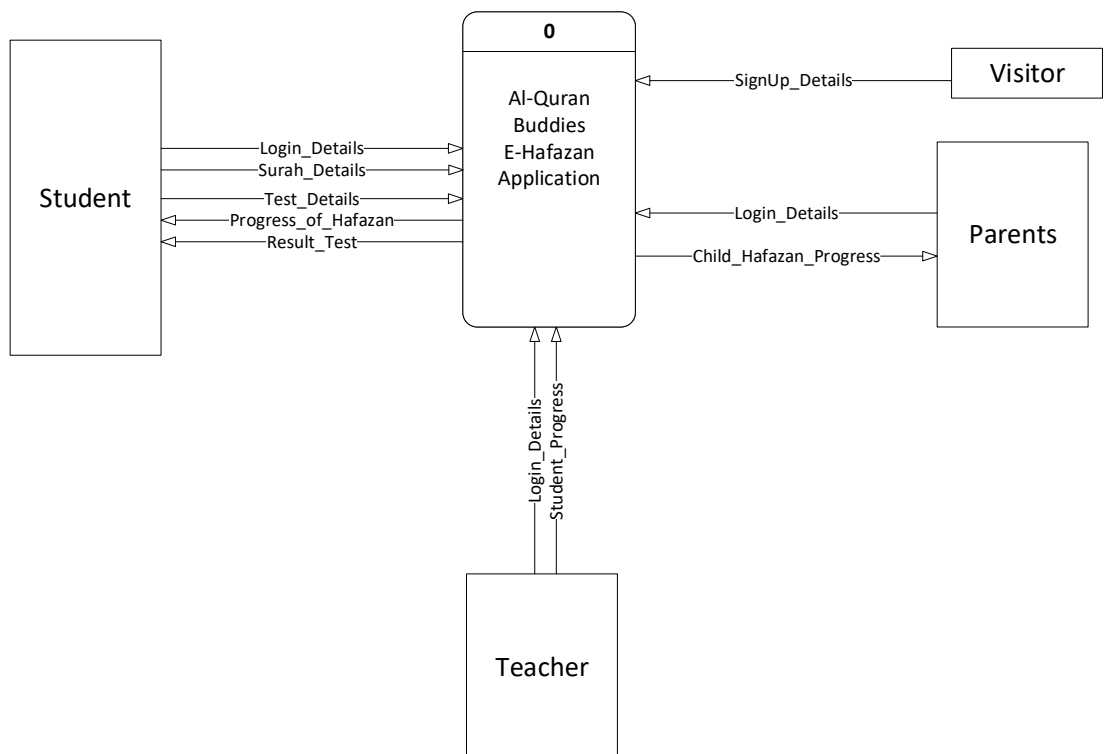


Figure 3.2 Context diagram – al-Quran Buddies E-Hafazan Management

3.2.3 Use Case Diagram

Use case diagram involves four users which are visitor, student, teacher and parents. There are seven use cases which are manage sign up, manage login, view surah, manage hafazan, manage progress, manage user account and manage feedback. Figure 3.3 show the use case diagram al-Quran Buddies E-Hafazan Management (AQBEM).

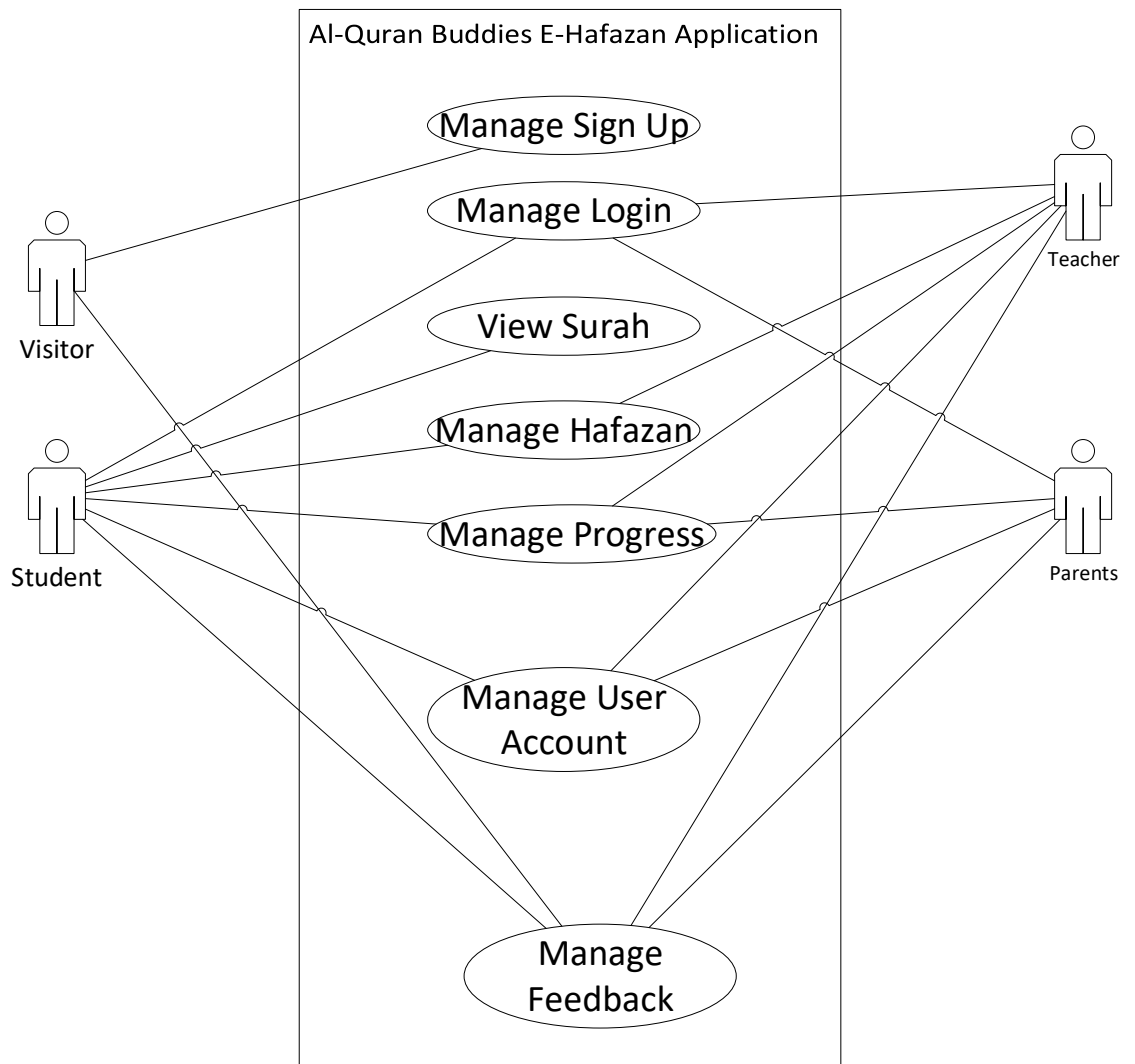


Figure 3.3 Use Case Diagram – al-Quran Buddies E-Hafazan Management

3.2.4 Modules

i. Module 1: Manage Sign Up module

This module is responsible for the sign up module consisting of all sign up or register functions. In the sign up function, the visitor will be able to enter email, IC number, first name, last name, phone, gender and password.

ii. Module 2: Manage Login module

This module is responsible for the login module consisting of all login functions. In the login function, the student, teacher and parents need to enter email and password to login into the system.

iii. Module 3: Manage Surah module

This module is responsible for the surah module which pertains all surah functions. In the surah module, the student will be able to choose surah, play, pause, repeat, next, previous and view. The student will be able to choose which surah they want to view and memorize.

iv. Module 4: Manage Hafazan module

This module is responsible for the hafazan module pertains all test functions. In the Hafazan module, the student will be able to choose surah and test their hafazan. They will key in the input or keyword using Arabic keypad. They can also test their hafazan by recording audio and then it will be evaluated by the teacher.

v. Module 5: Manage Progress module

This module is responsible for the progress module in which the users can view. In the progress module, the student will be able to view their hafazan progress. The teacher will be able to view all students' progress and parents can view their child progress.

vi. Module 6: Manage User Account module

This module is responsible for the account module in which pertains all accounts methods like edit and view. In the account module, the student, teacher and parents will be able to manage their account like change personal details.

vii. Module 7: Manage Feedback module

This module is responsible for the feedback module in which pertains all feedback methods. In the feedback module, the visitor, student, teacher and parents is allowed to make feedback while system admin is allowed to take appropriate action when received feedback report.

3.2.5 Activity Diagram

The Figure 3.4 shows an activity diagram for al-Quran Buddies E-Hafazan Management. An activity diagram is a technique used to represent a process model. It

portrays the behaviour of a system by delineating the sequencing of occasions through work process. They represent what occurs in work process, what activities should be possible in parallel and whether there are elective ways through the work process.

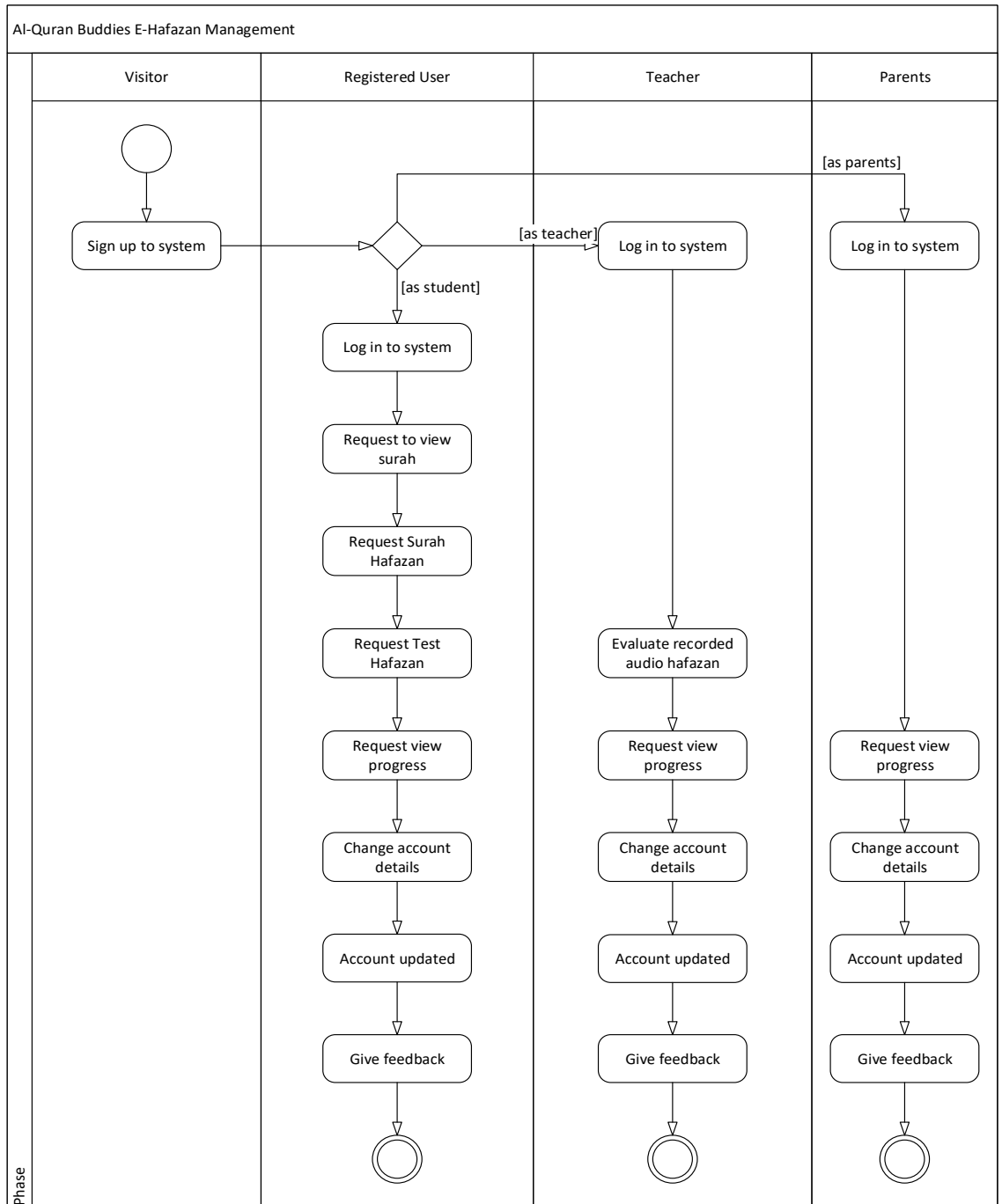


Figure 3.4 Activity Diagram – al-Quran Buddies E-Hafazan Management

3.2.6 Entity Relationship Diagram

Figure 3.5 shown entity-relationship diagram for al-Quran Buddies E-Hafazan Management. Entity-relationship diagram is a chart that visually represents the relationship between database entities.

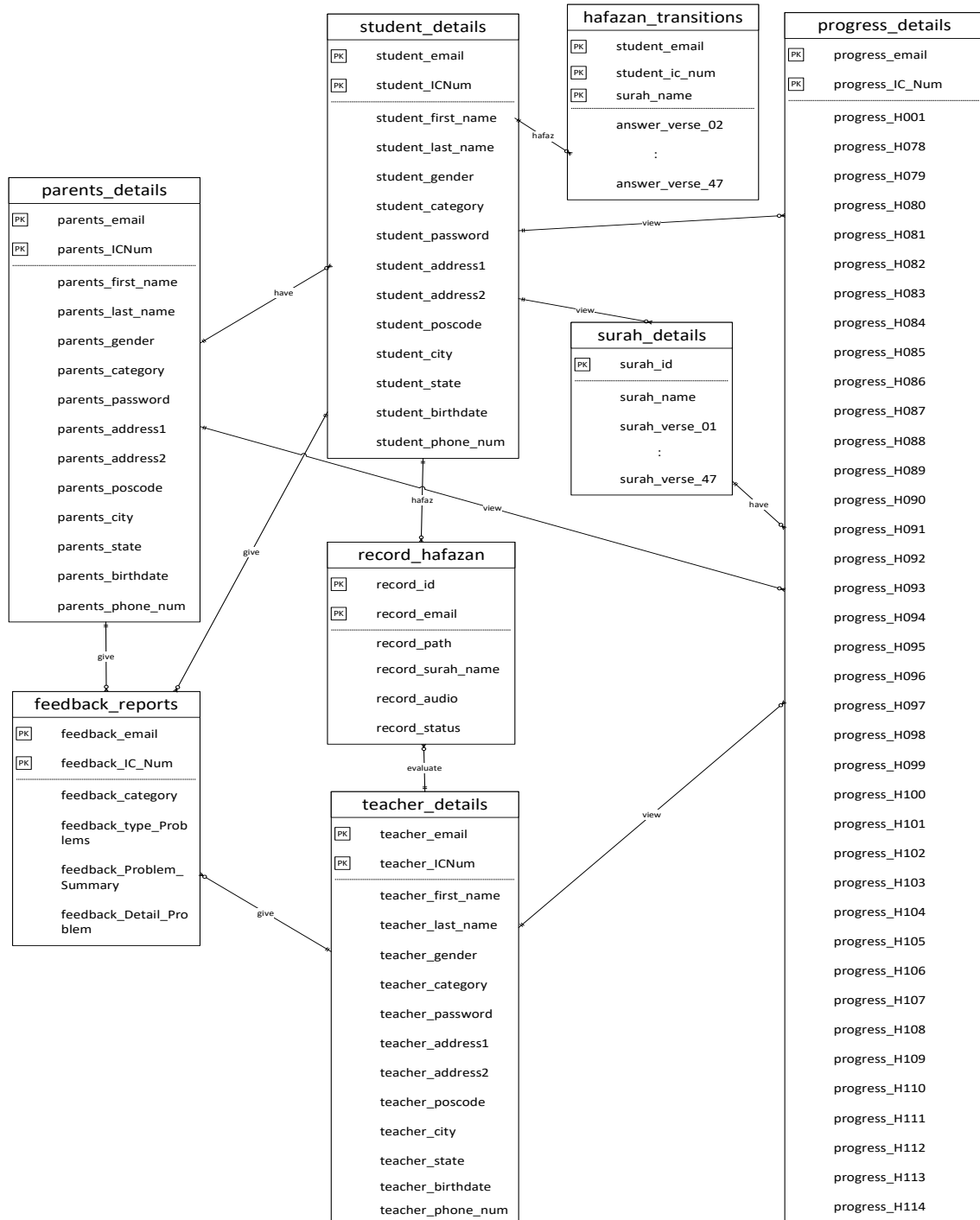


Figure 3.5 Entity Relationship Diagram – al-Quran Buddies E-Hafazan Management

3.3 GANTT CHART

This project is planned to be conducted in two period of time which is PSM 1 and PSM 2. The distribution of work using Rapid Application Development(RAD) methodologies is planning, analysis and design phase that required is done in PSM 1 while for PSM 2 is development, testing and deployment phase. The project starts from 01/06/2018 and finished on 30/04/2019. The detail of the Gantt chart can be found in Figure 3.6.

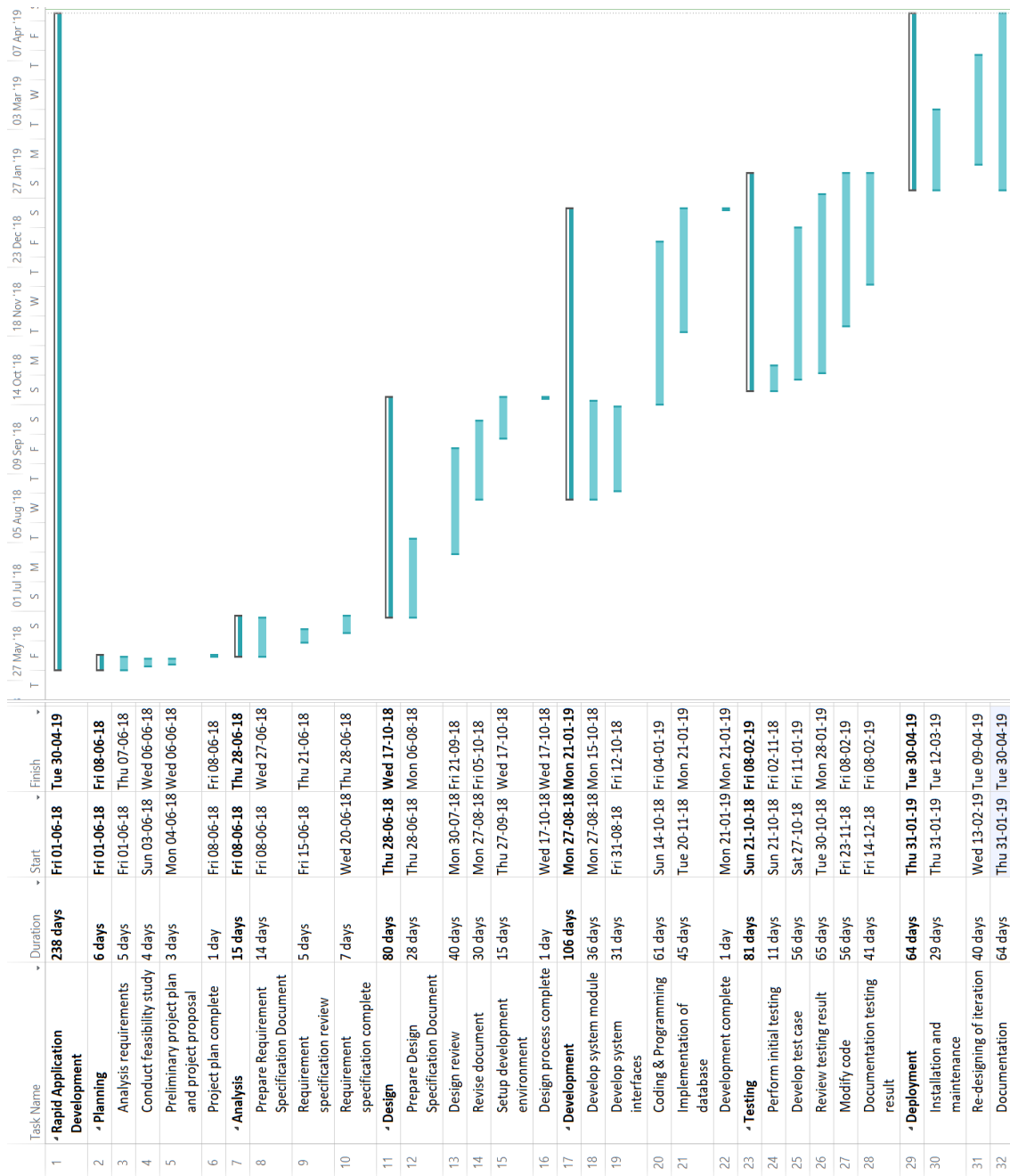


Figure 3.6 Gantt Chart – Al-Quran Buddies E-Hafazan Management

3.4 CONCLUSION

This methodology chapter was basically explaining the methods used in development and the development process design and implement in hafazan, management system. This chapter also discuss the system overview, development requirement, describe techniques, development tool and instrument that will be used in the project.

CHAPTER 4

RESULTS AND DISCUSSION

4.1 INTRODUCTION

This chapter will discuss the result from this project Al-Quran Buddies E-Hafazan Management system. The implementation of this project can be referred more on the Software Requirement Specification (SRS) and Software Design Document (SDD) attached at the Appendix B and C respectively. Testing is carried out as well to ensure that the system is free from bugs and complies to user expectations.

4.2 TESTING AND RESULT DISCUSSION

This project will undergo functionality test and user acceptance test (UAT). The purpose of using functionality test is to verify system performs and functions correctly and according to the design specification by providing a set of test data. All the function in this project need to be test and the actual behaviour of the system should be record. Next, user acceptance testing will be carry on by system can handle the required tasks in real world scenario. The owner and employees of the shop will be selected to perform user acceptance testing. The user acceptance test report will be collect for further discussion.

4.3 FUNCTIONALITY TEST

Table 4.1 Test Case Sign Up

Test Case ID	AQBEM_TC_01		
Test Functionality	Sign Up		
Test Case Summary	This use case is to allow visitor register as user (student, teacher or parents) in the AQBEM.		
Pre-condition	User not exist in database before		
Execution Steps	<ol style="list-style-type: none"> 1. User fill up all information of sign up 2. User click Sign Up button 		
Test Data	Expected Result	Actual Result	Pass/Fail
{“Email Address” : “athirahmh@gmail.com”, “IC Number” : “961001035372”, “First Name” : “Athirah”, “Last Name” : “Marzuki”, “Phone” : “0199982195”, “Gender” : “Female”, “Password” : “athirah”, “Confirm Password” : “athirah”}	User Sign Up into system successfully.	User Sign Up into system successfully.	Pass
{“Email Address” : “athirahmh@gmail.com”, “IC Number” : “”, “First Name” : “”, “Last Name” : “”, “Phone” : “”, “Gender” : “”, “Password” : “”, “Confirm Password” : “”}	System pop up error message.	System pop up error message.	Pass

Table 4.2 Test Case Login

Test Case ID	AQBEM_TC_02		
Test Functionality	Login		
Test Case Summary	This use case is to let student, teacher and parents to login into AQBEM.		
Pre-condition	The user account of student, teacher and parents must exist in the database.		
Execution Steps	<ol style="list-style-type: none"> 1. User fill up all information of login 2. User click Login button 		
Test Data	Expected Result	Actual Result	Pass/Fail
{“Email Address” : “athirahmh@gmail.com”, “Password” : “athirah”}	User login into system successfully.	User login into system successfully.	Pass
{“Email Address” : “amh@gmail.com”, “Password” : “”}	System pop up error message.	System pop up error message.	Pass

Table 4.3 Test Case View Surah

Test Case ID	AQBEM_TC_03
Test Functionality	View Surah
Test Case Summary	This use case is the way how student can view and read surah available in system. Student can select surah and memorize it where user can play and repeat audio of the surah along with the verse.

Pre-condition	The user must be registered and be logged into AQBEM as student.		
Execution Steps	1. User click selected surah image button		
Test Data	Expected Result	Actual Result	Pass/Fail
{“surah name” : “Al-Fatihah”}	System redirected to selected surah page	System redirected to selected surah page	Pass
{“surah name” : “”}	System not redirected to any page	System not redirected to any page	Pass

Table 4.4 Test Case Hafazan (Text)

Test Case ID	AQBEM_TC_04		
Test Functionality	Hafazan (Text)		
Test Case Summary	This use case is to let student to test their hafazan or memorized surah		
Pre-condition	The user must be registered and be logged into AQBEM as student.		
Execution Steps	1. User fill up all verses of hafazan 2. User click Check button		
Test Data	Expected Result	Actual Result	Pass/Fail

{“Verse 02”: “الْحَمْدُ لِلَّهِ رَبِّ الْعَالَمِينَ”, “Verse 03” : “الرَّحْمَنُ الرَّحِيمُ”}	System check answers and display results	System check answers and display results	Pass
{“Verse 02” : “”, “Verse 03” : “”}	System pop up error message.	System pop up error message.	Pass

Table 4.5 Test Case Hafazan (Speech)

Test Case ID	AQBEM_TC_05		
Test Functionality	Hafazan (Speech)		
Test Case Summary	This use case is to let student to test their hafazan or memorized surah		
Pre-condition	The user must be registered and be logged into AQBEM as student.		
Execution Steps	<ol style="list-style-type: none"> 1. User record audio of hafazan 2. User click Record button 3. User click upload button 		
Test Data	Expected Result	Actual Result	Pass/Fail
{“Audio” : “al-fatihah.mp3”}	Audio is upload into system.	Audio is upload into system.	Pass
{“Audio” : “”}	System pop up error message.	System pop up error message.	Pass

Table 4.6 Test Case View Progress

Test Case ID	AQBEM_TC_06		
Test Functionality	View Progress		
Test Case Summary	This use case is to allow student to view their hafazan progress, allow teacher to view all student progress and parents to view their child progress.		
Pre-condition	The user must be registered and be logged into AQBEM.		
Execution Steps	1. User click progress button		
Test Data	Expected Result	Actual Result	Pass/Fail
{“email address” : “athirahmh@gmail.com”}	System redirected to progress page	System redirected to progress page	Pass
{“ email address” : “”}	System not display any progress	System not display any progress	Pass

Table 4.7 Test Case Update Details

Test Case ID	AQBEM_TC_07
Test Functionality	Update Details
Test Case Summary	This use case is to let student, teacher and parents to update their details.
Pre-condition	The user must be registered and be logged into AQBEM.

Execution Steps	1. User fill up information of details which want to update 2. User click update button		
Test Data	Expected Result	Actual Result	Pass/Fail
{“Phone” : “0179370832”}	Details update successful	Details update successful	Pass
{“Phone” : “”}	System pop up error message.	System pop up error message.	Pass

Table 4.8 Test Case Feedback

Test Case ID	AQBEM_TC_08		
Test Functionality	Feedback		
Test Case Summary	This use case is to allow student, teacher and parents to make feedback.		
Pre-condition	The users can access to system		
Execution Steps	1. User fill up all information of feedback 2. User click Submit feedback button		
Test Data	Expected Result	Actual Result	Pass/Fail
{“ Type Problems” : “Hafaz”, “Problem Summary” : “Can’t select surah”, “Detail Problem” : “Can’t select Surah Al-Fatihah”}	User give feedback into system successfully.	User give feedback into system successfully.	Pass

{“ Type Problems” : “”, “Problem Summary” : “”, “Detail Problem” : “”}	System pop up error message.	System pop up error message.	Pass
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Functionality testing is performed to verify that a software application performs and functions correctly according to design specifications. During functionality testing, the core application functions is checked, including text input, menu functions and installation and setup on localized machines. Features are tested by entering input and examining the output. Functional testing ensures that the requirements are properly satisfied by the application. This type of testing is not concerned with how processing occurs, but rather, with the results of processing. Table 4.1 until Table 4.8 shows the functionality test case.

4.4 USER ACCEPTANCE TEST

Before the software is deployed, the system must undergo acceptance testing. The goal is to access its functionality for the intended use. Acceptance testing is performed in the acceptance environment of the client, where they can comprehend or in which they are directly involved with the system. This system also undergoes User Acceptance Test (UAT). Appendix E show the sample of User Acceptance Test.

4.5 USER MANUAL

Refer Appendix D.

CHAPTER 5

CONCLUSION

5.1 INTRODUCTION

This al-Quran Buddies E-Hafazan Management is develop to help user to learn and memorize the al-Quran in an easy and convenience way. This system will ease the user to manage their hafazan progress. The user of this system is student, teacher and parents. User can use the system to manage their hafazan by memorizing surah al-Quran. User also view all surah available in the system.

5.2 PROJECT CONSTRAINT

There are some constraints in implementing this project. The constraints for this project are as follows:

- i. Time constraint – More time is needed in order to build and developed the system.
- ii. Setup constraint – Difficulties occur while configuring port of the localhost to make the server running properly.
- iii. Platform – The system can only run on web browser. It is not compatible with mobile devices.
- iv. Language – The system runs in simple English as requested by the owner so that users are able to understand on how to use the system easily.

5.3 FUTURE WORK

There have several enhancements that can be carry out for future improvement of AQBEM:

- i. Develop the AQBEM on many different platforms to increase the degree of deliverance and reaching wider user that uses many different platforms like android, iOS, etc.
- ii. Add Manage Translation Module. User can view surah and translate into any languages.
- iii. Add synchronization between audio and verses in al-Quran. Where the audio will sync with the highlighted verses.

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APPENDIX B

SOFTWARE REQUIREMENT SPECIFICATION (SRS)

For

Al-Quran Buddies E-Hafazan Management

(AQBEM)

Generated by:

Nurul Athirah binti Mohd Marzuki Hussin

CB15111

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1.0 PRODUCT DESCRIPTION

1.1 User Characteristics

Table 1.1 User characteristics – al-Quran Buddies E-Hafazan Management

User	Characteristics
Visitor	<ul style="list-style-type: none">• They must know English language and achieved at least beginner level.• They must know how to use a laptop or computer and achieved at least beginner level.
Registered User	<ul style="list-style-type: none">• They must know English language and achieved at least beginner level.• They must know how to use a laptop or computer and achieved at least beginner level.• They must know how to read al-Quran and achieved at least beginner level.
Teacher	<ul style="list-style-type: none">• They must know English language and achieved at least intermediate level.• They must know how to use a laptop or computer and achieved at least beginner level.• They must know how to read al-Quran and achieved at least professional level.
Parents	<ul style="list-style-type: none">• They must know English language and achieved at least beginner level.• They must know how to use a laptop or computer and achieved at least beginner level.

1.2 Constraints

Below is a list of constraints for al-Quran Buddies E-Hafazan Management:

1. The system shall provide use of icons and toolbars on user interface and shall not contain symbols or graphic abusive for any culture.
2. The system shall support up to 1,000 concurrently connected users.
3. The database shall design to handle up to 100,000 users.
4. The authentication process during login session should not excess 2 seconds.
5. The time for list of surah loading should not excess 2 seconds.
6. The version of windows operating system should be Windows 7 and above.

2.0 INTERFACES REQUIREMENTS

2.1 User Interfaces

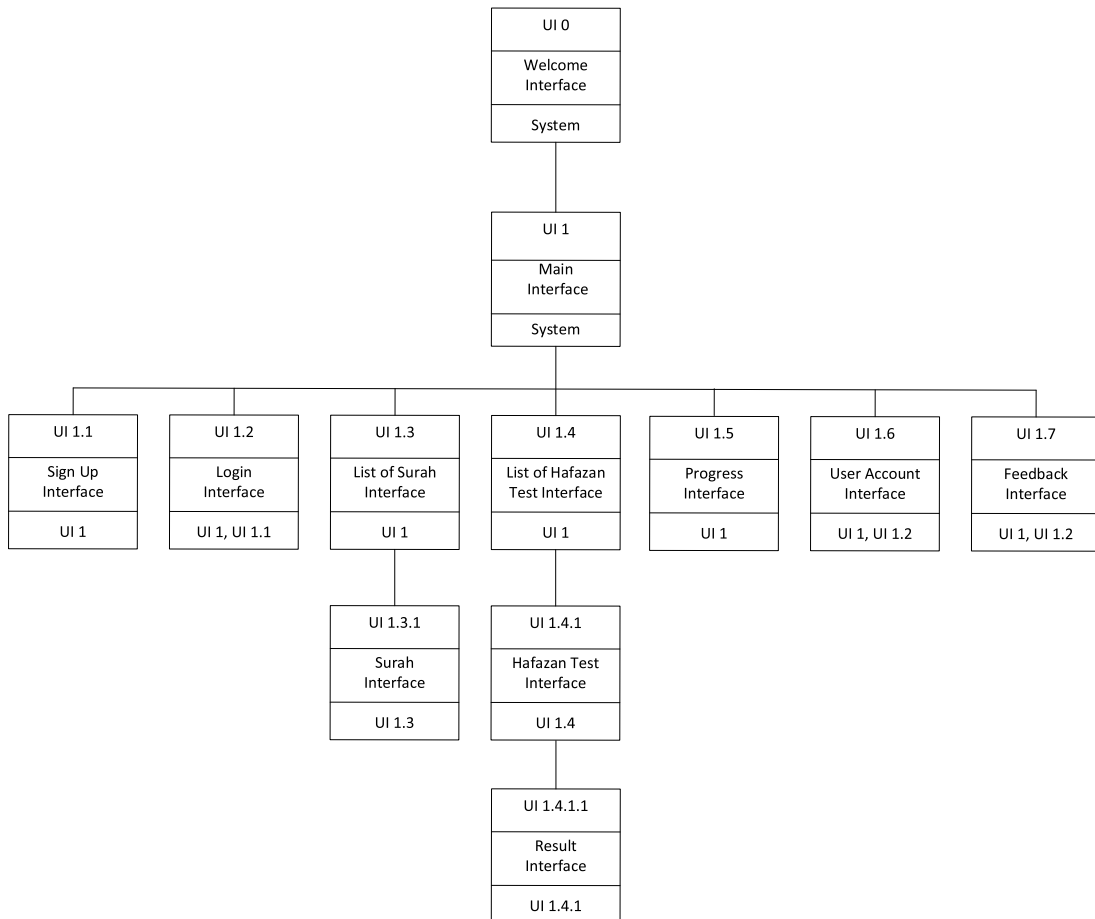


Figure 2.1 Dialogue Diagram

Table 2.1 User Interfaces Description

User Interface Name	Description	User Interface Layout
Welcome Interface	This is a welcoming page	Refer Appendix B-2.1
Main Interface	User able to redirect to login, sign up, surah, hafazan test, progress and user account interface	Refer Appendix B-2.2
Sign Up Interface	User enter name, email address, password , category and gender to sign up as a user	Refer Appendix B-2.3
Login Interface	User enter the email address, category and password to login into system	Refer Appendix B-2.4
List of Surah Interface	User select one of the surah that have been listed or displayed	Refer Appendix B-2.5
Surah Interface	User get the overview of the selected surah	Refer Appendix B-2.6
List of Hafazan Interface	User select one of the surah that have been listed or displayed to test their memorization	Refer Appendix B-2.7
Hafazan Test Interface	User get the overview of the selected surah to memorize	Refer Appendix B-2.8
Result Interface	User get the result of the hafazan test	Refer Appendix B-2.9
Progress Interface	User can check progress of surah that have been memorized	Refer Appendix B-2.10
User Account Interface	User edit password and gender to update personal details	Refer Appendix B-2.11
Feedback Management Interface	User give feedback and proper action will be taken to encounter the problem	Refer Appendix B-2.12

2.2 Hardware Interfaces

Since this system is using based on website, the only hardware used is Laptop for development.

2.3 Software Interfaces

Table 2.2 Software Interface

Software	Function
Microsoft Word 2016	Documentation and proposal preparation
Microsoft Project 2013	Preparation for planning, Schedule, and Gantt Chart
Microsoft Visio 2013	Design the use case diagram, context diagram, component diagram, and sequence diagram
Google Chrome	Browse the relative website and research for literature review.
Microsoft Windows Operating System- Window 10	Operating system used to develop, compile, and run system

3.0 SOFTWARE PRODUCT FEATURES

3.1 Manage Sign Up

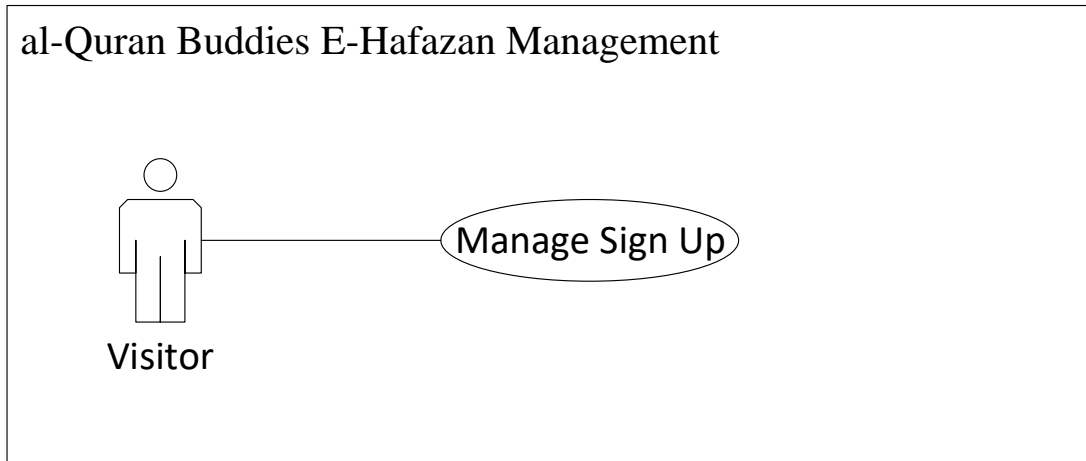


Figure 3.1 Manage Sign Up – Diagram

Table 3.1 Manage Sign Up

Use Case Id	AQBEM-UC01
Use Case Name	Manage Sign Up
Brief Description	This use case is to allow visitor register as user (student, teacher or parents) in the AQBEM.
Actor	Visitor
Pre-Conditions	Visitor need to be connected to the Internet
Basic Flow	<ol style="list-style-type: none">1. This use case begins when the user selects the <<Sign Up>> [SRS- AQBEM -UC01-01] option.2. The visitor selects the <<Sign Up>> [SRS-AQBEM-UC01-02] option.3. The visitor is required to enter his full name, email address, IC number, phone, password and gender.4. System validate whether the visitor fill in the mandatory field and the correct data type and length. [E1: The details filled in by the visitor did not fulfill the

	<p>requirements]</p> <p>5. System send the details of registration into database and create a new profile for the visitor.</p> <p>The use case ends.</p>
Alternative Flow	None
Exception Flow	<p>[E1: The details filled in by the visitor did not fulfill the requirements]</p> <p>1. The wrong part will be highlighted.</p> <p>2. The visitor has to reenter the part that need to do correction.</p> <p>Continue with step 5 in basic flow.</p>
Post-Conditions	1. Visitor is able to login into the AQBEM as a user.
Rules	1. The user in this use case is visitor. The password created by the visitor must contain numerical and alphabet letters with the length of 8 characters and above.
Constraints	None
Sequence Diagram	Refer Appendix B-1.1

3.2 Manage Login

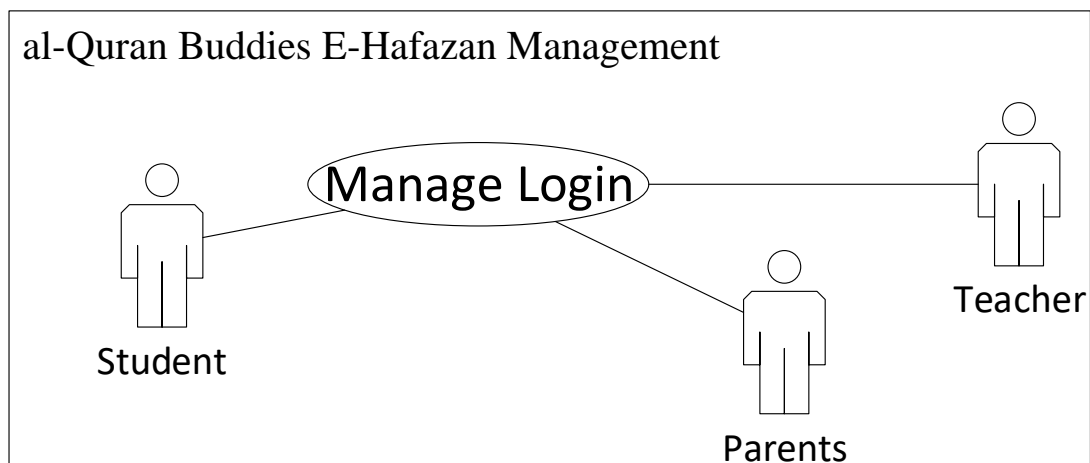


Figure 3.2 Manage Login – Diagram

Table 3.2 Manage Login

Use Case Id	AQBEM-UC02
Use Case Name	Manage Login
Brief Description	This use case is to let student, teacher and parents to login into AQBEM.
Actor	Student, teacher and parents
Pre-Conditions	<ol style="list-style-type: none"> 1. The student, teacher and parents must be connected to the Internet. 2. The user account of student, teacher and parents must exist in the database.
Basic Flow	<ol style="list-style-type: none"> 1. The use case begins when the user selects the <<Login>> [SRS-AQBEM-UC02-01] option. 2. The system request the user to enter his email address, and password which email address acts as the username. 3. The system will validate the email address and password entered by the user whether it matches with the one in the database. [E1: The email address and password entered are not match with the record in database] [E2: Only the password entered is not match with the record in the database] 4. The user logins successfully. 5. User will be displayed with the main interface. [A1: The user is teacher] [A2: The user is parents] 6. The use case ends.
Alternative Flow	<p>[A1: The user is teacher]</p> <ol style="list-style-type: none"> 1. Teacher will be displayed with the Teacher interface. 2. Continue with step 6 in basic flow. <p>[A2: The user is parents]</p> <ol style="list-style-type: none"> 1. Parents will be displayed with the Parents interface. 2. Continue with step 6 in basic flow.
Exception Flow	<p>[E1: The email address and password entered is not match with the record in database]</p> <ol style="list-style-type: none"> 1. The system display “Account is not registered”.

	2. The system display “Redirecting to Sign Up interface”. 3. The sign up interface is shown. [E2: Only the password entered is not match with the record in the database] 1. The system displays the “Invalid email address and password entered”. 2. Continue with step 2 in basic flow.
Post-Conditions	1. User can perform action based on their privilege in the system.
Rules	None
Constraints	None
Sequence Diagram	Refer Appendix B-1.2

3.3 View Surah

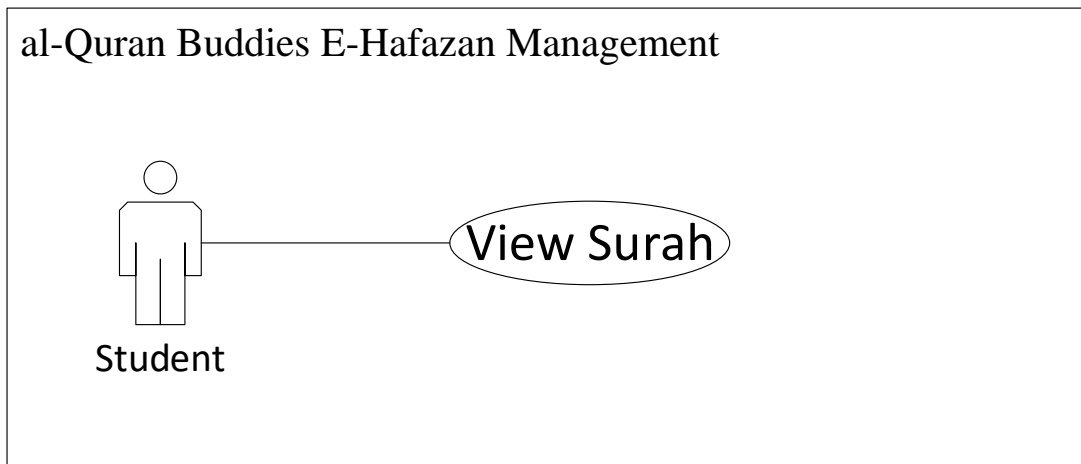


Figure 3.3 View Surah – Diagram

Table 3.3 View Surah

Use Case Id	AQBEM-UC03
Use Case Name	View Surah
Brief Description	This use case is the way how student can view and read surah available in system. Student can select surah and

	memorize it where user can play and repeat audio of the surah along with the verse.
Actor	Student
Pre-Conditions	<ol style="list-style-type: none"> 1. The user must be registered. 2. The user must be logged into AQBEM.
Basic Flow	<ol style="list-style-type: none"> 1. The use case begins when the student selects the <<Surah>> [SRS-AQBEM-UC03-01] option. 2. System displays 'List of Surah Interface' with the surah available for the option chosen in Step 1. 3. Student can choose any available surah and will be redirected to selected surah. 4. The system will validate the selected surah chosen by the student in the database. 5. Student will be displayed with the surah interface that consists of verses and audio. 6. Student can click play, pause, next, previous and option. 7. The use case ends.
Alternative Flow	None
Exception Flow	None
Post-Conditions	The audio surah is able to be play, pause, next, previous and repeat by student.
Rules	None
Constraints	None
Sequence Diagram	Refer Appendix B-1.3

3.4 Manage Hafazan

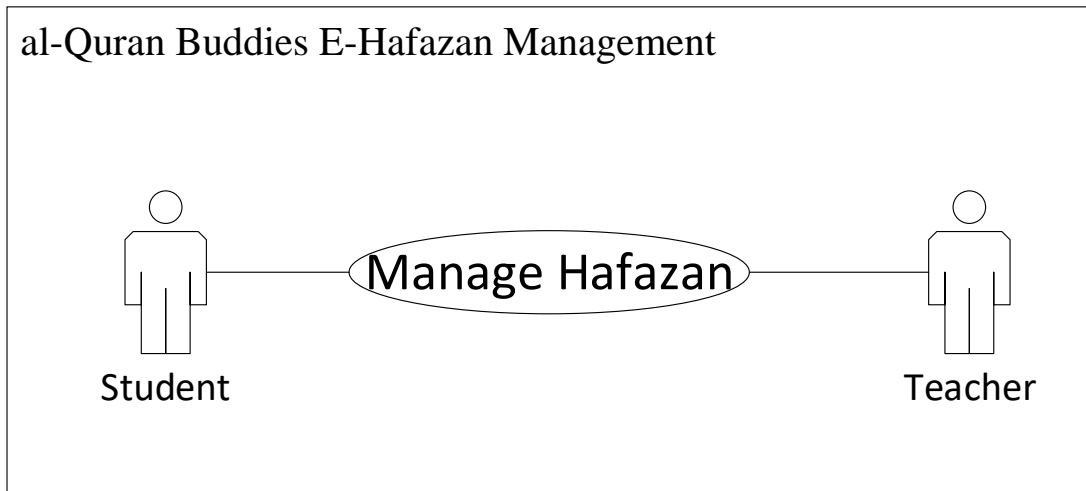


Figure 3.4 Mänge Hafazan – Diagram

Table 3.4 Manage Hafazan

Use Case Id	AQBEM-UC04
Use Case Name	Manage Hafazan
Brief Description	This use case is to let student to test their hafazan or memorized surah and let teacher evaluate students' hafazan based on the recorded audio.
Actor	Student and teacher
Pre-Conditions	<ol style="list-style-type: none"> 1. The user must be registered. 2. The user must be logged into AQBEM.
Basic Flow	<ol style="list-style-type: none"> 1. The use case begins when the user selects the <<Hafazan>> [SRS-AQBEM-UC04-01] option. 2. The system request the user to select one of the available surah in the list. 3. The system will validate the selected surah chosen by the user in the database. 4. User will be displayed with the hafazan test interface. 5. In the test interface, user need to key in the input or keyword using Arabic keypad.

	<p>6. The system will validate the answer entered by the user whether it matches with the one in the database. [E1: The answers entered are not match with the record in database] [E2: The test is not fully answered by user]</p> <p>7. The user answers is check successfully.</p> <p>8. User will be displayed with the result interface.</p> <p>9. The use case ends.</p>
Alternative Flow	None
Exception Flow	<p>[E1: The answers entered is not match with the record in database]</p> <p>1. The user answers is check successfully.</p> <p>2. User will be displayed with the result interface.</p> <p>3. The system display “The answers entered is wrong”.</p> <p>[E2: The test is not fully answered by user]</p> <p>1. The system displays the “Fill in the answers”.</p> <p>2. Continue with step 2 in basic flow.</p>
Post-Conditions	None
Rules	None
Constraints	None
Sequence Diagram	Refer Appendix B-1.4

3.5 Manage Progress

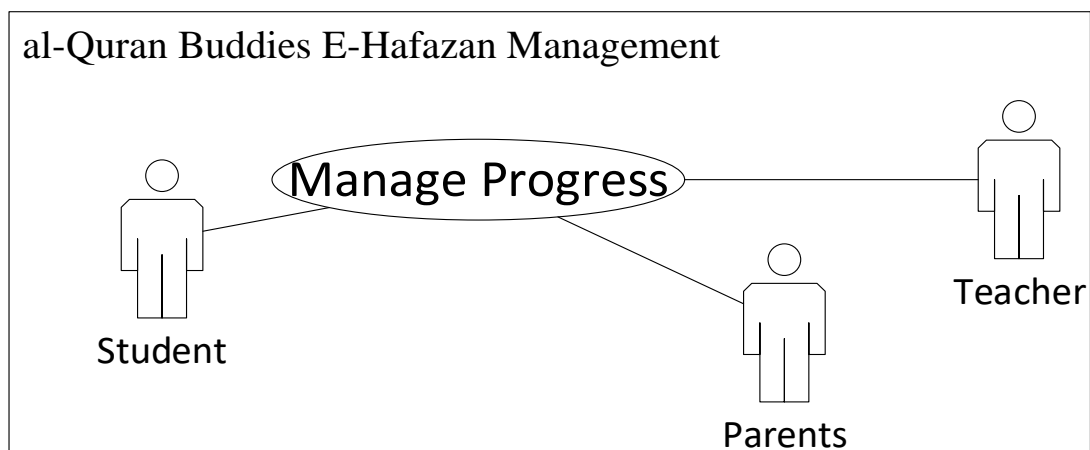


Figure 3.5 Manage Progress – Diagram

Table 3.5 Manage Progress

Use Case Id	AQBEM-UC05
Use Case Name	Manage Progress
Brief Description	This use case is to allow student to view their hafazan progress, allow teacher to view all student progress and parents to view their child progress.
Actor	Student, teacher and parents
Pre-Conditions	<ol style="list-style-type: none"> 1. The user must be registered. 2. The user must be logged into AQBEM.
Basic Flow	<ol style="list-style-type: none"> 1. The use case begins when the user selects the <<Progress>> [SRS-AQBEM-UC05-01] option. 2. System displays the hafazan progress of surah for the option chosen in Step 1. 3. User can view the progress of memorized surah. 5. The use case ends.
Alternative Flow	None
Exception Flow	None
Post-Conditions	None
Rules	None
Constraints	None
Sequence Diagram	Refer Appendix B-1.5

3.6 Manage User Account

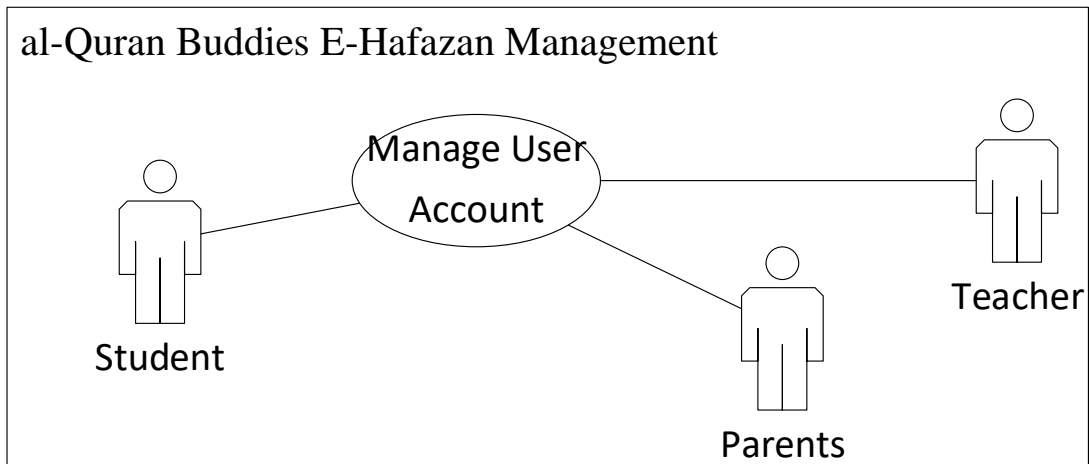


Figure 3.6 Manage User Account – Diagram

Table 3.6 Manage User Account

Use Case Id	AQBEM-UC06
Use Case Name	Manage User Account
Brief Description	This use case is to let student, teacher and parents to manage their account.
Actor	Student, teacher and parents
Pre-Conditions	<ol style="list-style-type: none"> 1. The users must be registered. 2. The users must be logged into AQBEM.
Basic Flow	<ol style="list-style-type: none"> 1. The use case begins when the user selects the <<User Account>> [SRS-AQBEM-UC06-01] option. 2. System displays 'User Account Screen' for the option chosen in Step 1. 3. User can tap on option to update their details. 4. System validate whether the user fill in the mandatory field and the correct data type and length. [E1: The details filled in by the user did not fulfill the requirements] 5. System send the details of changes into database and

	<p>update profile for the changes.</p> <p>6. System will display “The profile is updated”.</p> <p>7. The use case ends.</p>
Alternative Flow	None
Exception Flow	<p>[E1: The details filled in by the user did not fulfill the requirements]</p> <p>1. The wrong part will be highlighted.</p> <p>2. The user has to reenter the part that need to do correction.</p> <p>3. Continue with step 7 in basic flow.</p>
Post-Conditions	1. User is able to update personal details in AQBEM.
Rules	<p>1. The user in this use case is student, teacher and parents.</p> <p>The password created by the user must contain numerical and alphabet letters with the length of 8 characters and above.</p>
Constraints	None
Sequence Diagram	Refer Appendix B-1.6

3.7 Manage Feedback

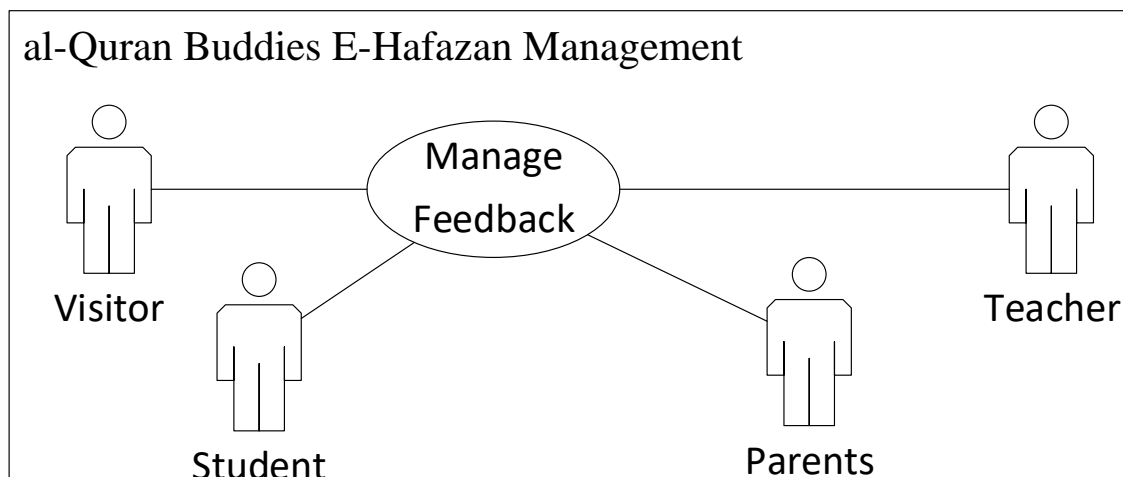


Figure 3.7 Manage Feedback – Diagram

Table 3.7 Manage Feedback

Use Case Id	AQBEM-UC07
Use Case Name	Manage Feedback
Brief Description	This use case is to allow student, teacher and parents to make feedback.
Actor	Student, teacher and parents
Pre-Conditions	1. The users can access into AQBEM.
Basic Flow	<ol style="list-style-type: none"> 1. The use case begins when the user selects the <<Feedback>> [SRS-AQBEM-UC07-01] option. 2. User selects one of the type of problems which are bug report, surah hafazan, audio and report other inappropriate problem as well as enters the problem summary and details of the problems. 3. User selects Submit option to submit the feedback report and the report will be store in database. 4. The use case ends.
Alternative Flow	None
Exception Flow	None
Extension	None
Post-Conditions	The feedback report will send to the people who are in charge to fix the issue and they will take the appropriate action to resolve the problem.
Rules	1. All users is allowed to make feedback.
Constraints	None
Sequence Diagram	Refer Appendix B-1.7

4.0 REQUIREMENTS TRACEABILITY

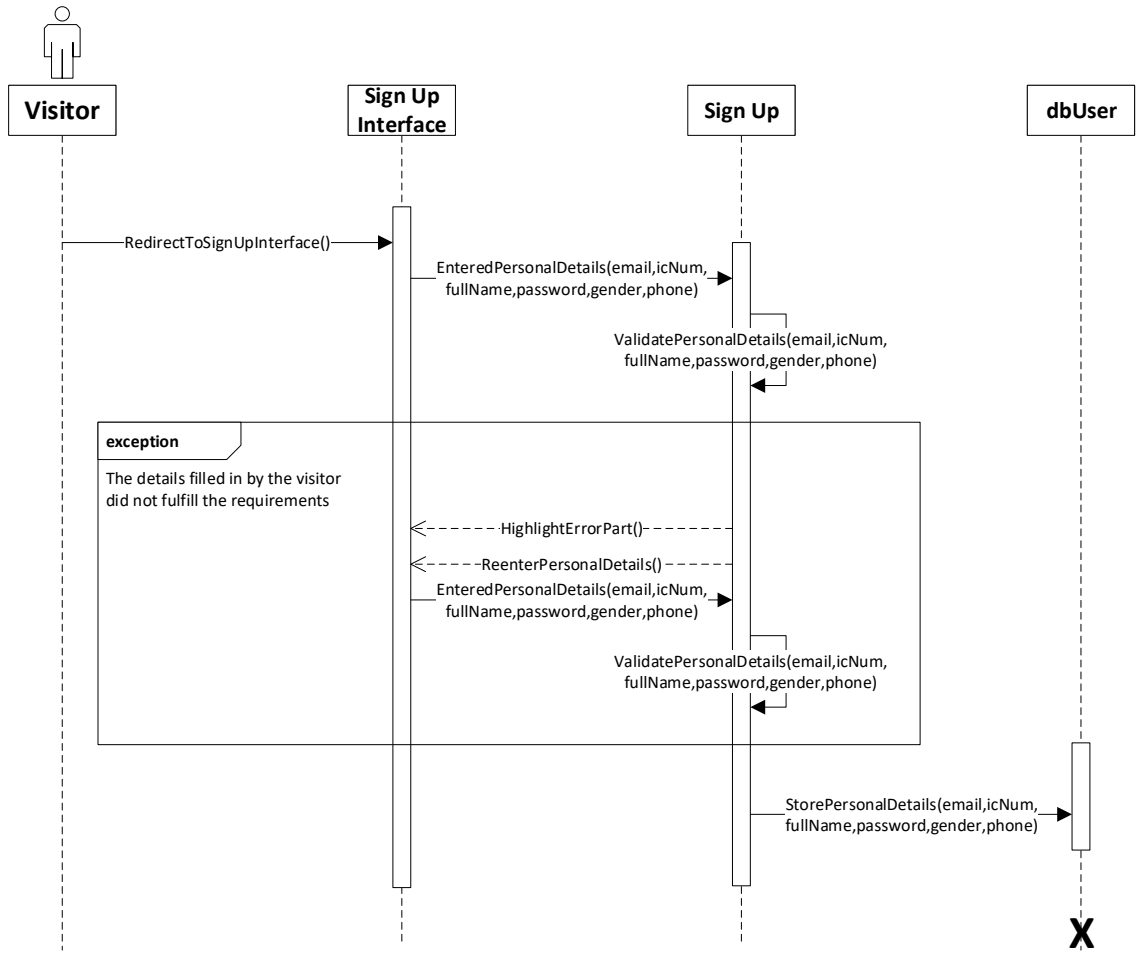
Table 4.1 Requirements Traceability

Requirement ID	Description
SRS-AQBEM-UC01-01	User should be able to click the “Sign Up” option. User will be redirect to sign up interface once they click on it.
SRS-AQBEM-UC01-02	Visitor should be able to click the “Sign Up” option. Visitor are required to enter the personal details to register.
SRS-AQBEM-UC02-01	User should able to click the “Login” option. User will be redirect to login interface once they click on it.
SRS-AQBEM-UC03-01	User should able to click the “Surah” option. User will be redirect to list of surah interface once they click on it.
SRS-AQBEM-UC04-01	User should able to click the “Hafazan” option. User will be redirect to hafazan test interface once they click on it.
SRS-AQBEM-UC05-01	User should able to click the “Progress” option. User will be redirect to progress interface once they click on it.
SRS-AQBEM-UC06-01	User should able to click the “User Account” option. User will be redirect to user account interface once they click on it.
SRS-AQBEM-UC07-01	User should able to click the “Feedback” option. User will be redirect to manage feedback interface once they click on it.

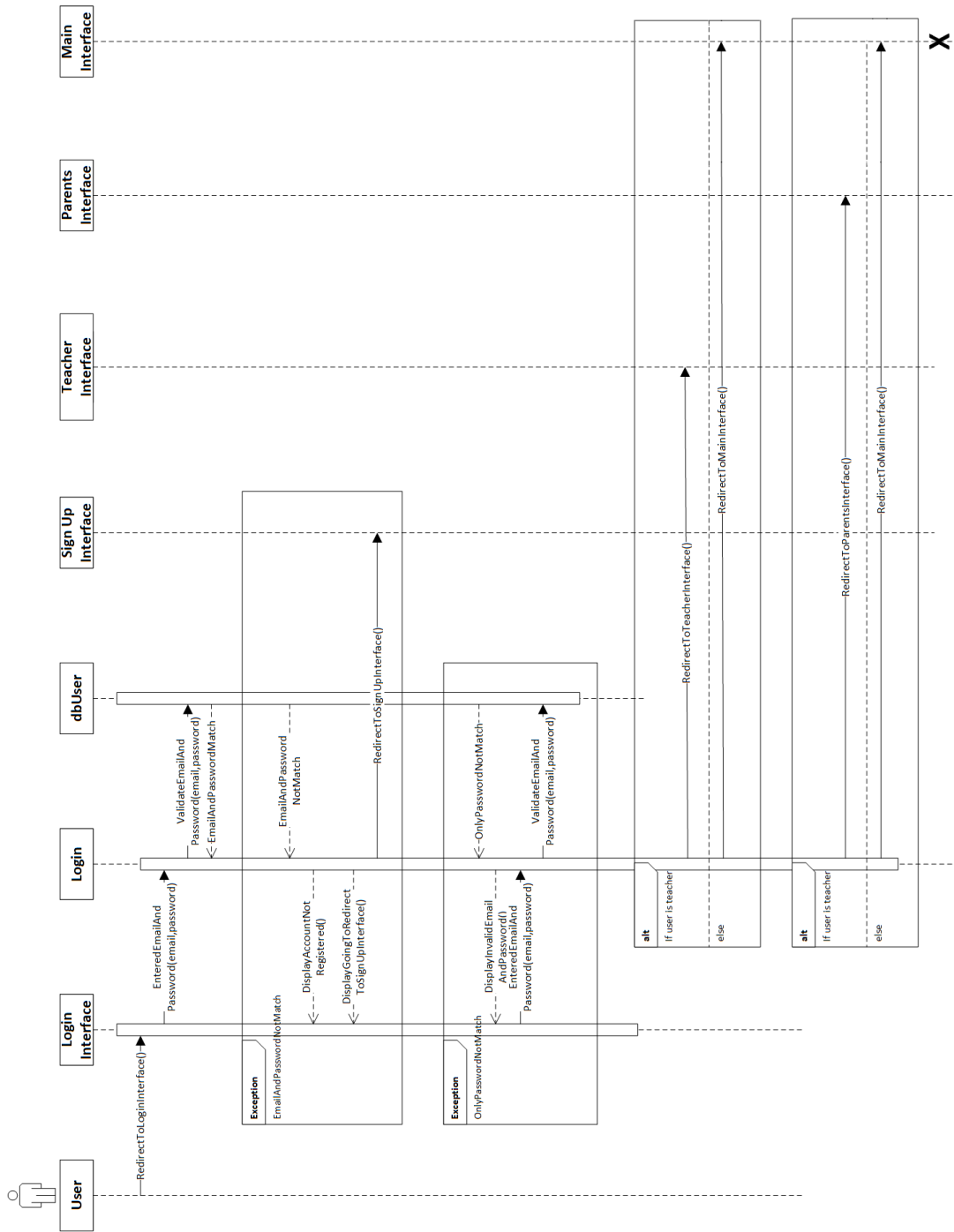
5.0 SYSTEM REQUIREMENTS APPROVAL

	Name	Date
Verified by: _____ Developer		
Approved by: _____ Client		

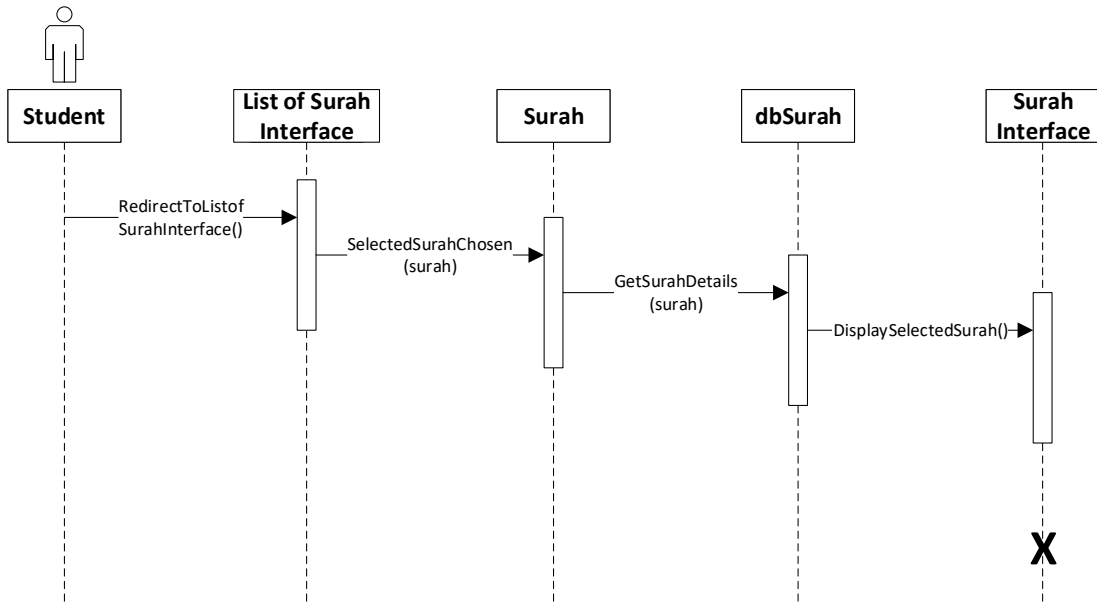
APPENDIX B-1
SEQUENCE DIAGRAM



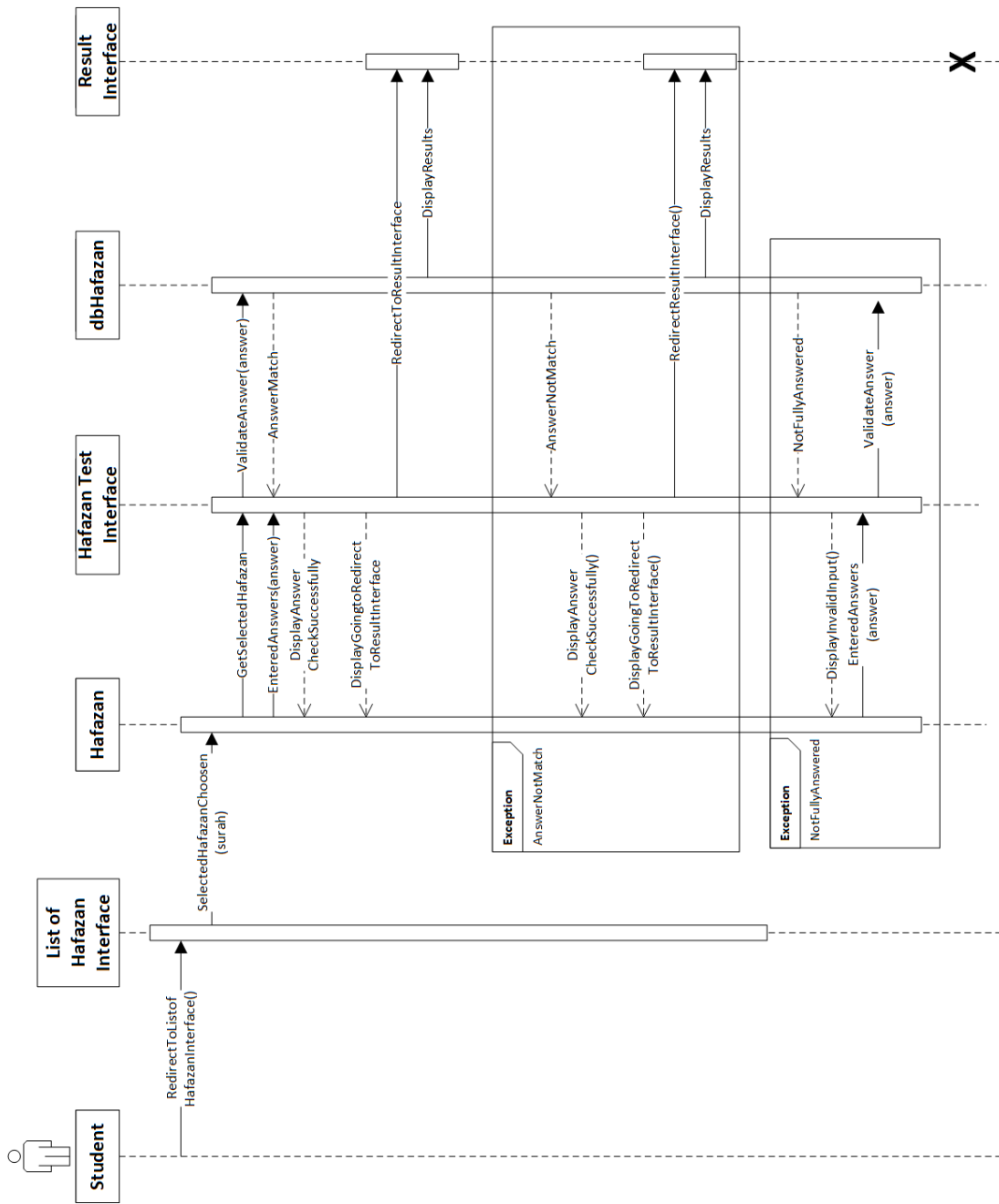
Appendix B-1.1 Manage Sign Up Sequence Diagram



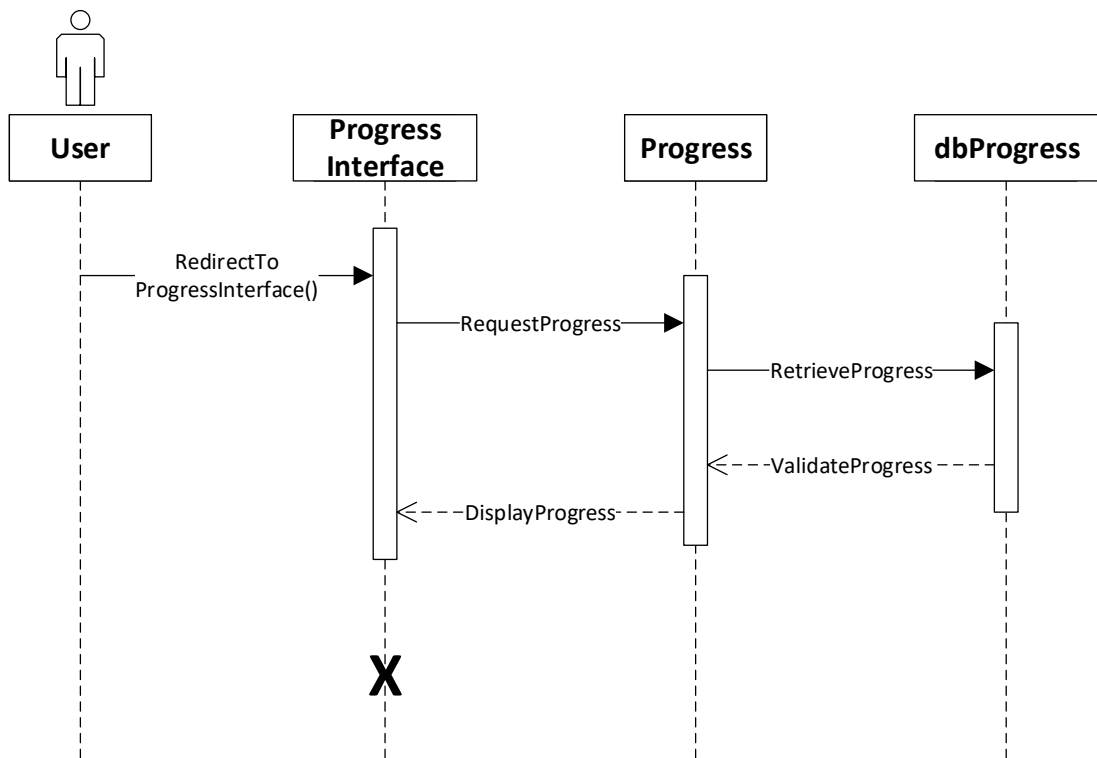
Appendix B-1.2 Manage Login Sequence Diagram



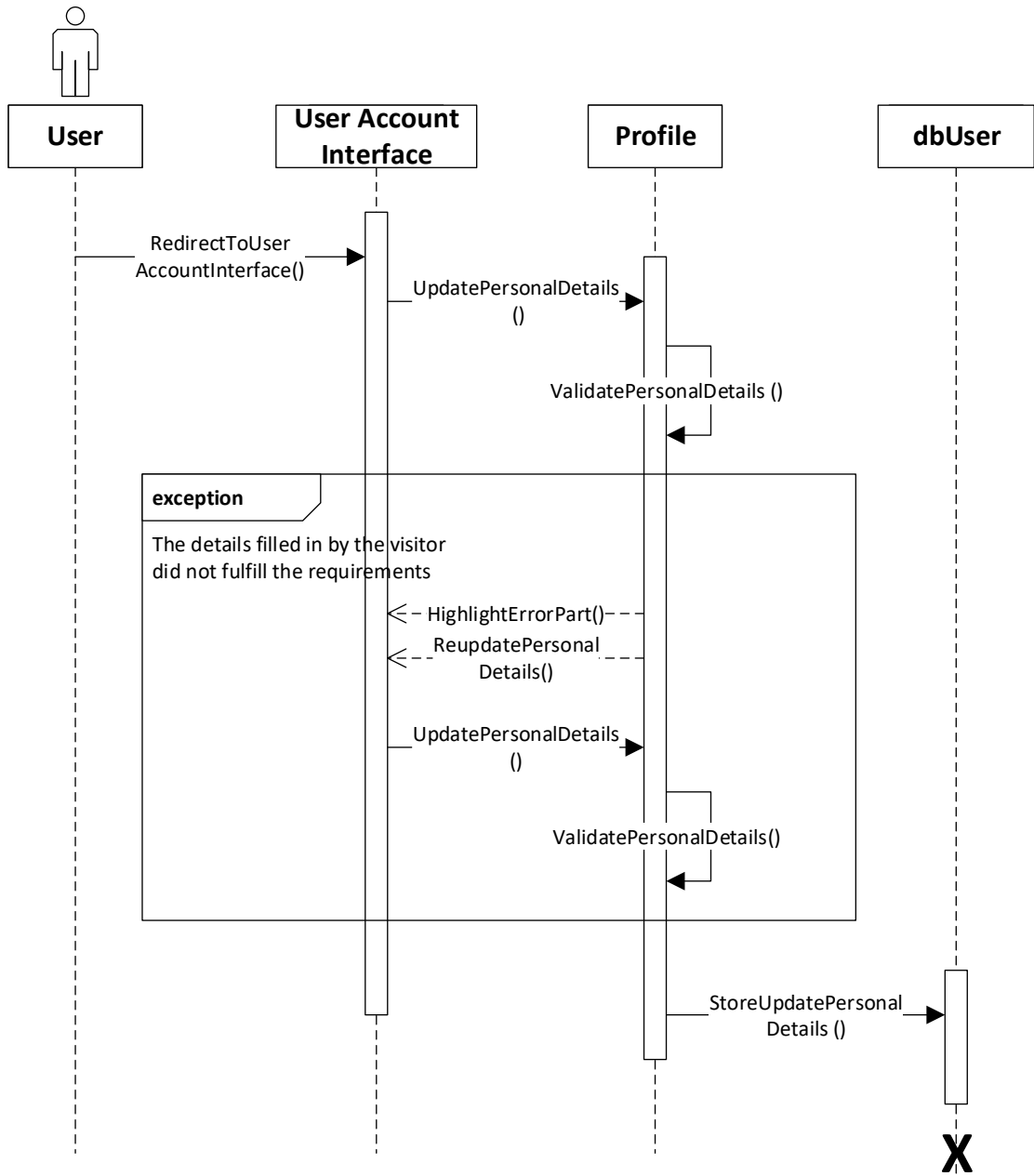
Appendix B-1.3 View Surah Sequence Diagram



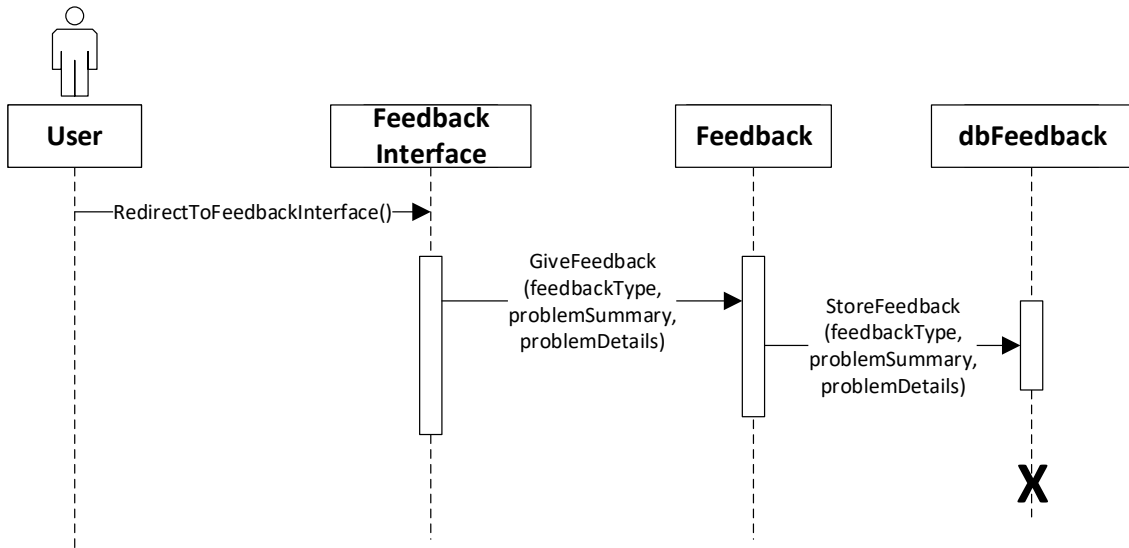
Appendix B-1.4 Manage Hafazan Sequence Diagram



Appendix B-1.5 Manage Progress Sequence Diagram

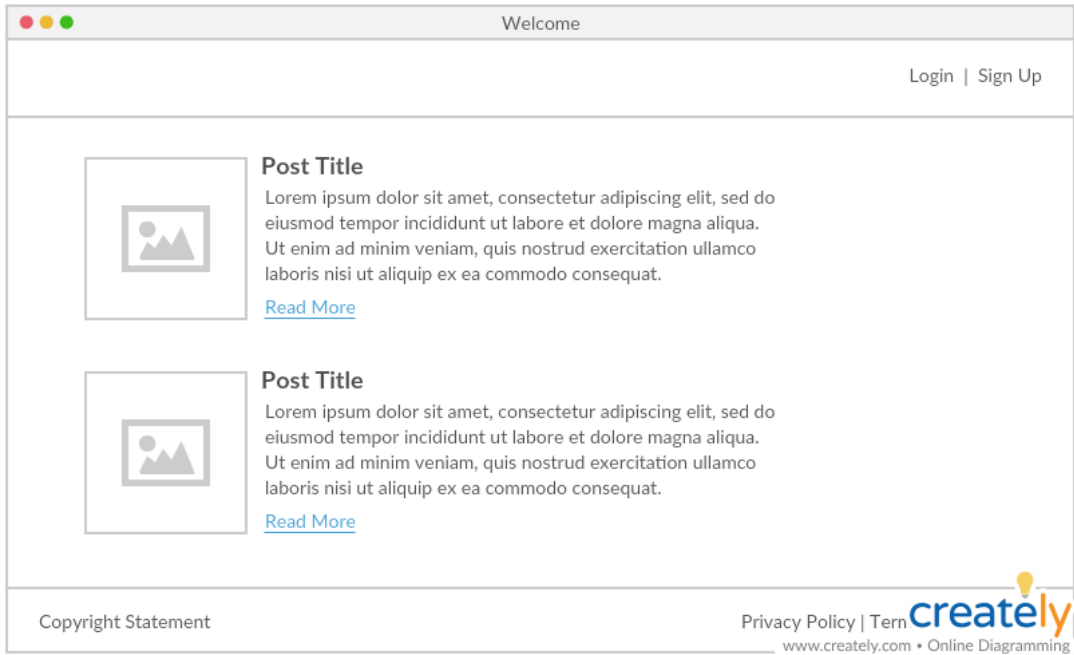


Appendix B-1.6 Manage User Account Sequence Diagram

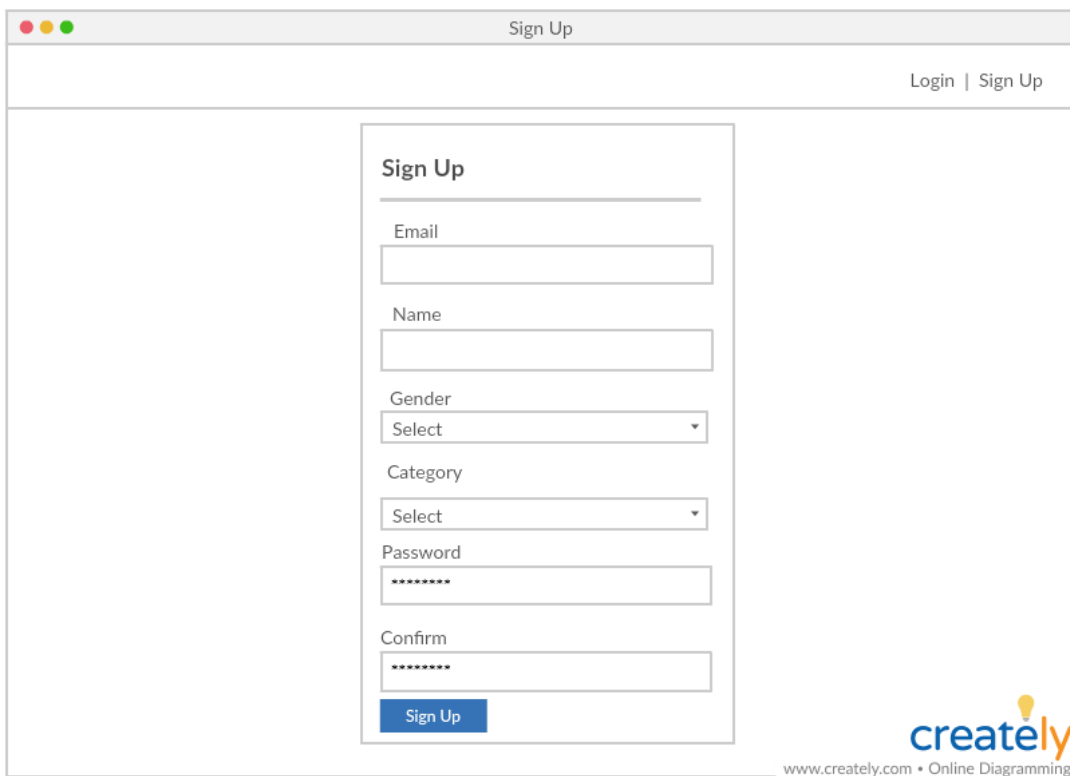


Appendix B-1.7 Manage Feedback Sequence Diagram

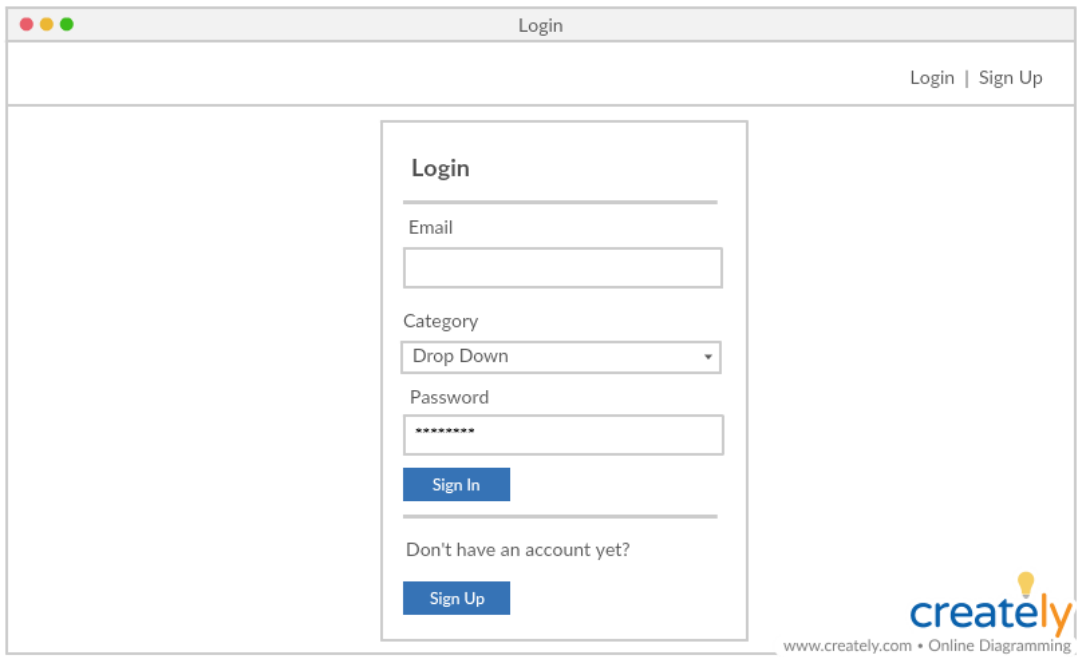
APPENDIX B-2
INTERFACE



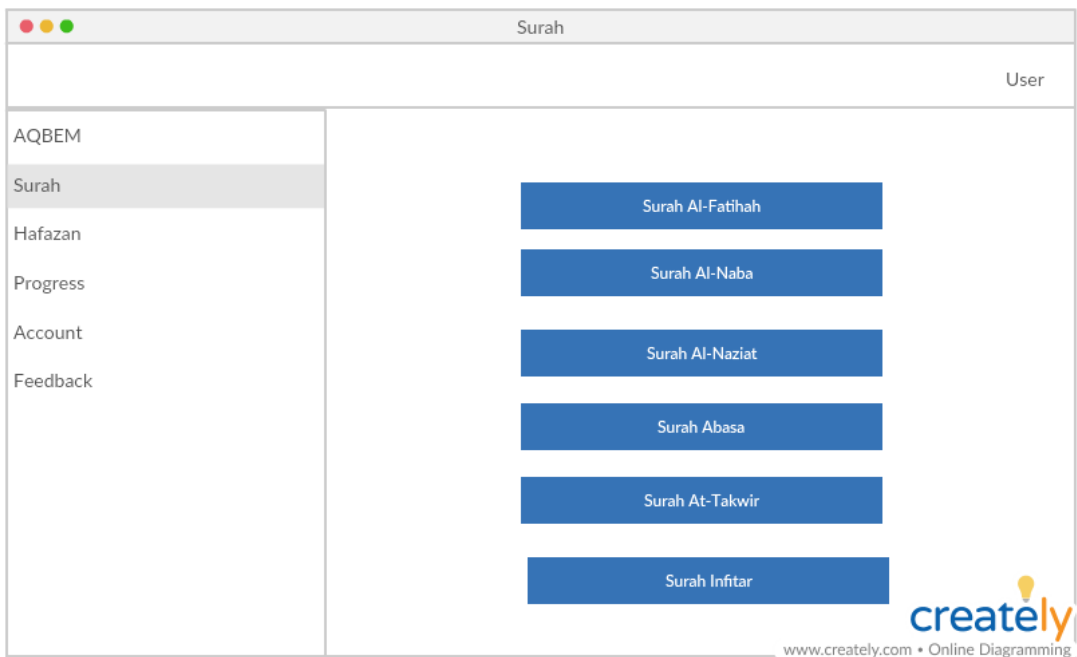
Appendix B-2.1 Welcome Interface



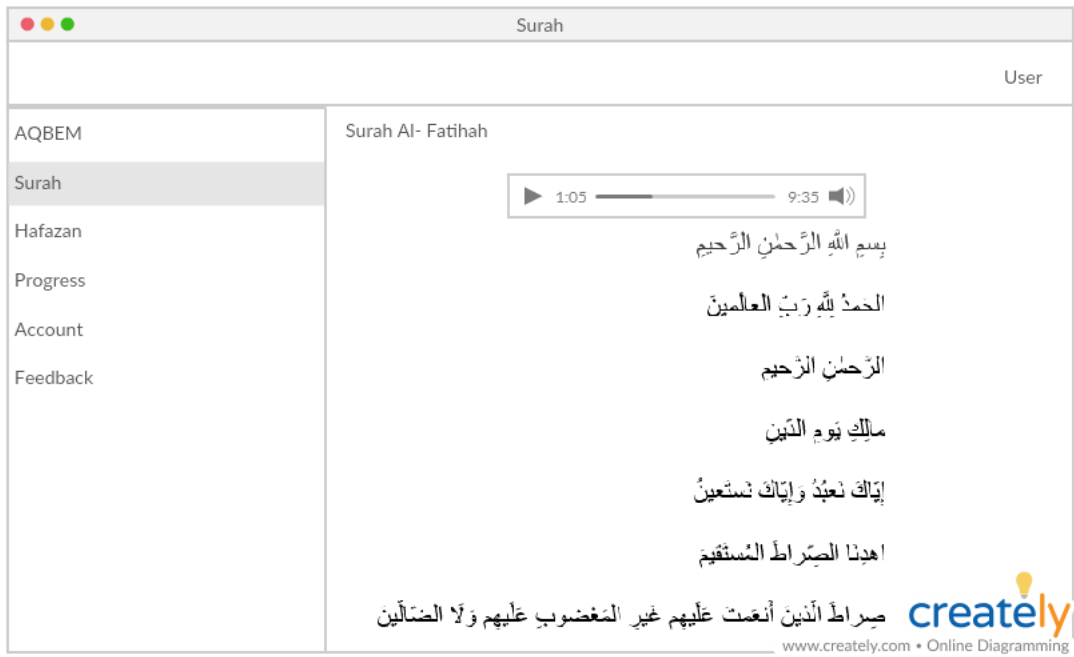
Appendix B-2.2 Sign Up Interface



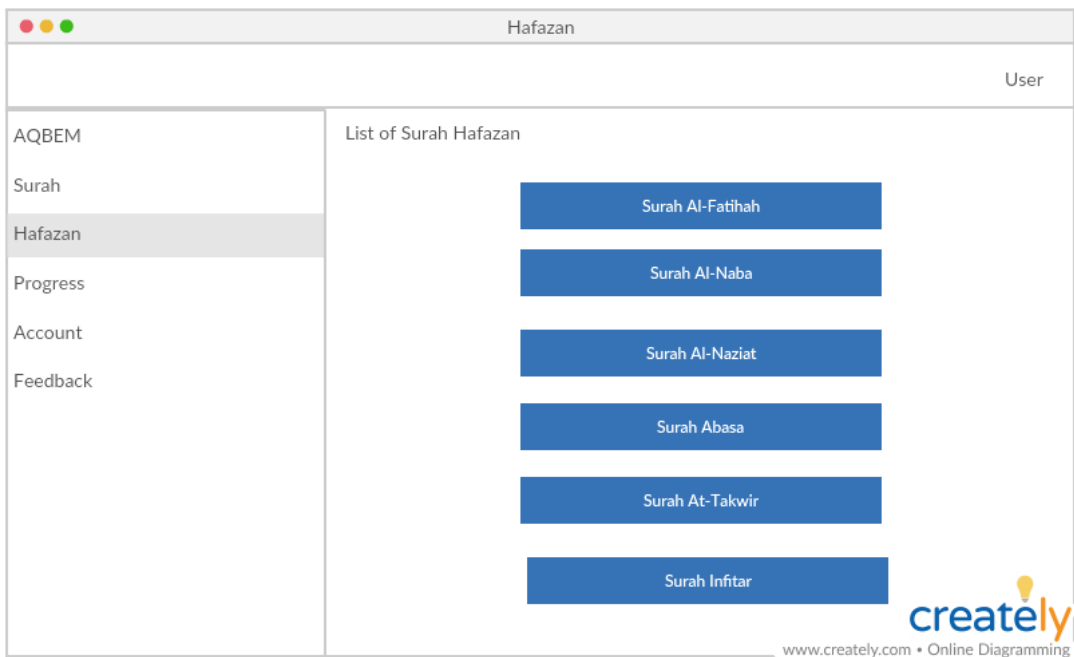
Appendix B-2.3 Login Interface



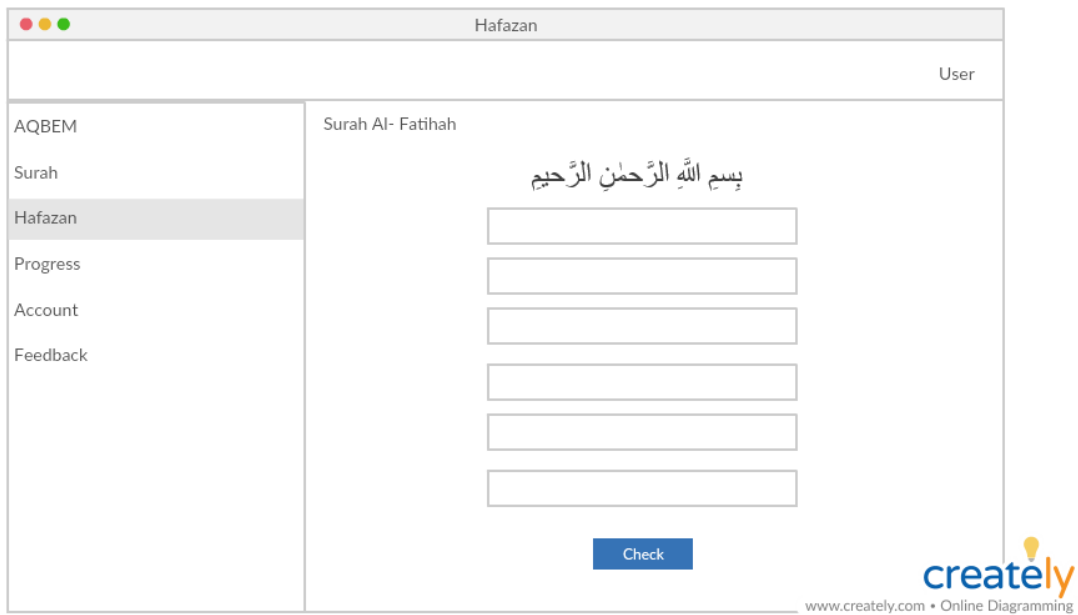
Appendix B-2.4 List of Surah Interface



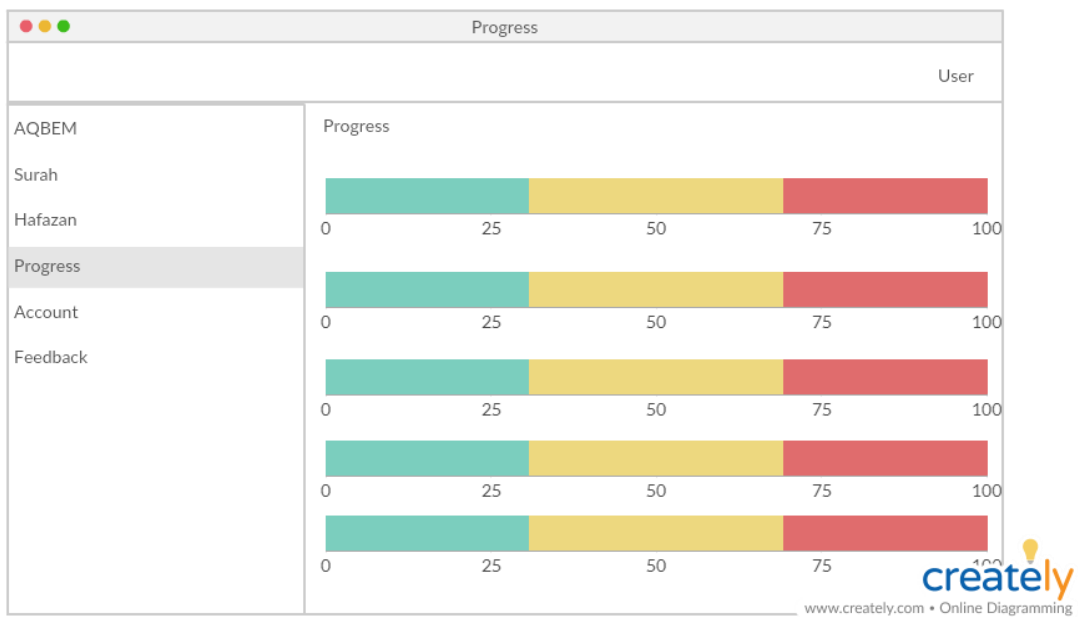
Appendix B-2.5 Surah Interface



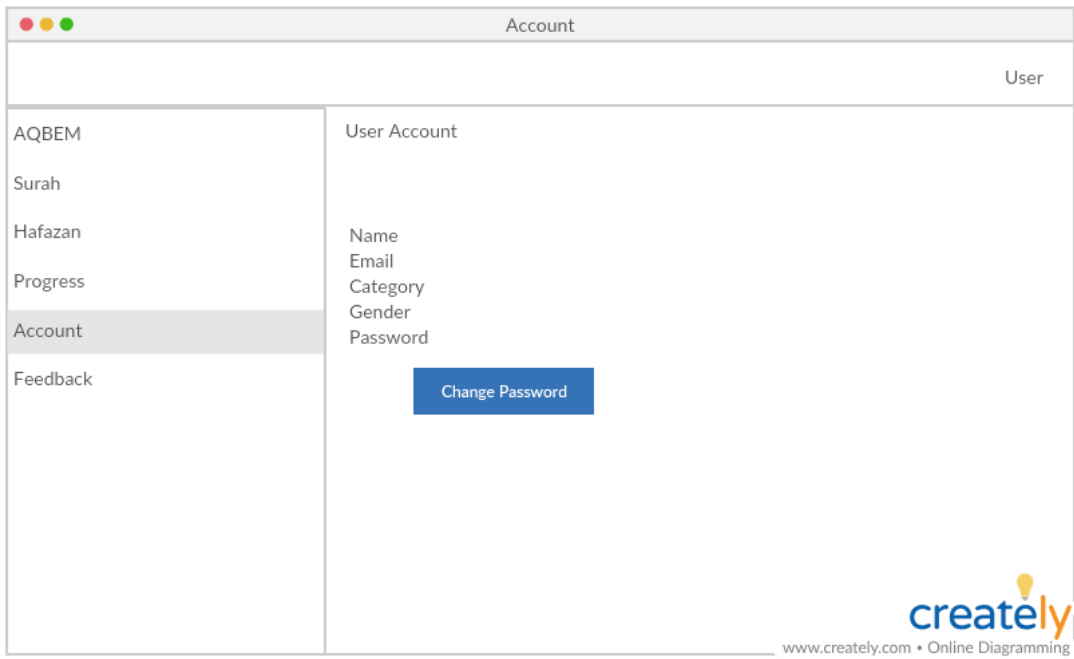
Appendix B-2.6 List of Hafazan Test Interface



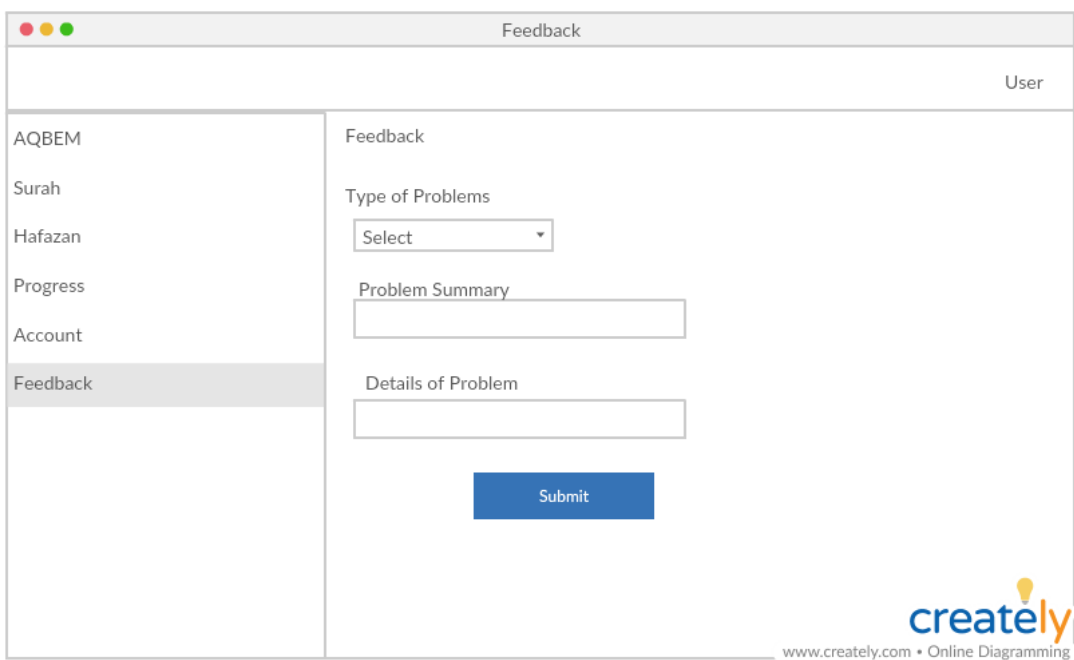
Appendix B-2.7 Hafazan Test Interface



Appendix B-2.8 Progress Interface



Appendix B-2.9 User Account Interface



Appendix B-2.10 Feedback Interface

APPENDIX C

SOFTWARE DESIGN DOCUMENT (SRS)

For

Al-Quran Buddies E-Hafazan Management

(AQBEM)

Generated by:

Nurul Athirah binti Mohd Marzuki Hussin

CB15111

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1.0 DATA DICTIONARY

1.1 Manage Sign Up

Table 1.1 Manage Sign Up Data Dictionary

Field Name	Description	Data Type	Constraint
STUDENT_EMAIL	Student Email	VARCHAR(100)	PK
STUDENT_IC_NUM	Student IC	VARCHAR(15)	PK
STUDENT_NAME	Student Name	VARCHAR(100)	
STUDENT_GENDER	Student Gender	VARCHAR(15)	
STUDENT_PASSWORD	Student Password	VARCHAR(50)	
STUDENT_PHONE	Student Phone	VARCHAR(11)	
TEACHER_EMAIL	Teacher Email	VARCHAR(100)	PK
TEACHER_IC_NUM	Teacher IC	VARCHAR(15)	PK
TEACHER_NAME	Teacher Name	VARCHAR(100)	
TEACHER_GENDER	Teacher Gender	VARCHAR(15)	
TEACHER_PASSWORD	Teacher Password	VARCHAR(50)	
TEACHER_PHONE	Teacher Phone	VARCHAR(11)	
PARENTS_EMAIL	Parents Email	VARCHAR(100)	PK
PARENTS_IC_NUM	Parents IC	VARCHAR(15)	PK
PARENTS_NAME	Parents Name	VARCHAR(100)	
PARENTS_GENDER	Parents Gender	VARCHAR(15)	
PARENTS_PASSWORD	Parents Password	VARCHAR(50)	
PARENTS_PHONE	Parents Phone	VARCHAR(11)	

1.2 Manage Login

Table 1.2 Manage Login Data Dictionary

Field Name	Description	Data Type	Constraint
STUDENT_EMAIL	Student Email	VARCHAR(100)	PK
STUDENT_PASSWORD	Student Password	VARCHAR(50)	

TEACHER_EMAIL	Teacher Email	VARCHAR(100)	PK
TEACHER_PASSWORD	Teacher Password	VARCHAR(50)	
PARENTS_EMAIL	Parents Email	VARCHAR(100)	PK
PARENTS_PASSWORD	Parents Password	VARCHAR(50)	

1.3 View Surah

Table 1.3 View Surah Data Dictionary

Field Name	Description	Data Type	Constraint
SURAH_ID	Surah Id	VARCHAR(50)	PK
SURAH_NAME	Surah Name	VARCHAR(30)	
SURAH_VERSE	Surah Verse	VARCHAR(100)	

1.4 Manage Hafazan

Table 1.4 Manage Hafazan Data Dictionary

Field Name	Description	Data Type	Constraint
HAFAZAN_ID	Hafazan Id	VARCHAR(50)	PK
HAFAZAN_EMAIL	User Email	VARCHAR(100)	FK
SURAH_ID	Surah Id	VARCHAR(50)	
SURAH_NAME	Surah Name	VARCHAR(30)	
HAFAZAN_AUDIO	Hafazan Audio	BLOB	
HAFAZAN_VERSE	Hafazan Verse	VARCHAR(100)	

1.5 Manage Progress

Table 1.5 Manage Progress Data Dictionary

Field Name	Description	Data Type	Constraint
PROGRESS_ID	Progress Id	VARCHAR(50)	PK
STUDENT_EMAIL	User Email	VARCHAR(50)	PK
SURAH_ID	Surah Id	VARCHAR(50)	

PROGRESS_SURAH_NAME	Progress Surah Name	VARCHAR(30)	
---------------------	------------------------	-------------	--

1.6 Manage User Account

Table 1.6 Manage User Account Data Dictionary

Field Name	Description	Data Type	Constraint
STUDENT_EMAIL	Student Email	VARCHAR(100)	PK
STUDENT_IC_NUM	Student IC	VARCHAR(15)	PK
STUDENT_NAME	Student Name	VARCHAR(100)	
STUDENT_GENDER	Student Gender	VARCHAR(15)	
STUDENT_PASSWORD	Student Password	VARCHAR(50)	
STUDENT_ADDRESS1	Student Address 1	VARCHAR(100)	
STUDENT_ADDRESS2	Student Address 2	VARCHAR(100)	
STUDENT_POSCODE	Student Poscode	VARCHAR(6)	
STUDENT_CITY	Student City	VARCHAR(50)	
STUDENT_STATE	Student State	VARCHAR(50)	
STUDENT_PHONE	Student Phone	VARCHAR(11)	
TEACHER_EMAIL	Teacher Email	VARCHAR(100)	PK
TEACHER_IC_NUM	Teacher IC	VARCHAR(15)	PK
TEACHER_NAME	Teacher Name	VARCHAR(100)	
TEACHER_GENDER	Teacher Gender	VARCHAR(15)	
TEACHER_PASSWORD	Teacher Password	VARCHAR(50)	
TEACHER_ADDRESS1	Teacher Address 1	VARCHAR(100)	
TEACHER_ADDRESS2	Teacher Address 2	VARCHAR(100)	
TEACHER_POSCODE	Teacher Poscode	VARCHAR(6)	
TEACHER_CITY	Teacher City	VARCHAR(50)	
TEACHER_STATE	Teacher State	VARCHAR(50)	
TEACHER_PHONE	Teacher Phone	VARCHAR(11)	
PARENTS_EMAIL	Parents Email	VARCHAR(100)	PK
PARENTS_IC_NUM	Parents IC	VARCHAR(15)	PK
PARENTS_NAME	Parents Name	VARCHAR(100)	

PARENTS_GENDER	Parents Gender	VARCHAR(15)	
PARENTS_PASSWORD	Parents Password	VARCHAR(50)	
PARENTS_ADDRESS1	Parents Address 1	VARCHAR(100)	
PARENTS_ADDRESS2	Parents Address 2	VARCHAR(100)	
PARENTS_POSCODE	Parents Poscode	VARCHAR(6)	
PARENTS_CITY	Parents City	VARCHAR(50)	
PARENTS_STATE	Parents State	VARCHAR(50)	
PARENTS_PHONE	Parents Phone	VARCHAR(11)	

1.7 Manage Feedback

Table 1.7 Manage Feedback Data Dictionary

Field Name	Description	Data Type	Constraint
FEEDBACK_TYPE	Feedback Type	VARCHAR(30)	
FEEDBACK_PROBLEM _SUMMARY	Problem Summary	VARCHAR(100)	
FEEDBACK_PROBLEM _DETAILS	Problem Details	VARCHAR(100)	

2.0 SYSTEM ARCHITECTURE

This section identifies the internal organizational structure of the al-Quran Buddies E-Hafazan Management (AQBEM). The relationship among system subsystem will be described.

2.1 Static Organization

Figure 2.1 shows the static organization for the al-Quran Buddies E-Hafazan Management (AQBEM). It consists of

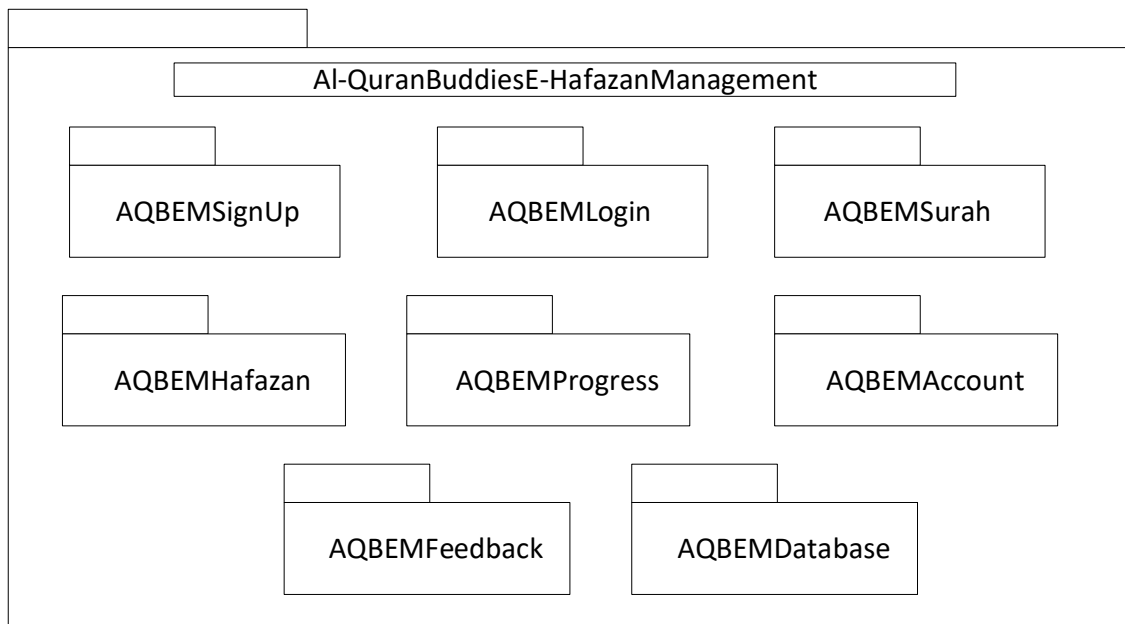


Figure 2.1 Static Organization of AQBEM

This part describes the detail for each subsystem/package.

1. AQBEMSignUp

This package is responsible to control the sign up of visitor in al-Quran Buddies E-Hafazan Management.

- a) signup Class

2. AQBEMLogin

This package is responsible to control the login of student, teacher and parents in al-Quran Buddies E-Hafazan Management.

- a) login Class

3. AQBEMSurah

This package is responsible to control the surah available in al-Quran Buddies E-Hafazan Management.

- a) surah Class

4. AQBEMHafazan

This package is responsible to control the hafazan of surah in al-Quran Buddies E-Hafazan Management.

a) hafazan Class

5. AQBEMProgress

This package is responsible to control the progress of hafazan in al-Quran Buddies E-Hafazan Management.

a) progress Class

6. AQBEMAccount

This package is responsible to control the information about users in al-Quran Buddies E-Hafazan Management.

a) account Class

7. AQBEMFeedback

This package is responsible to control the feedback in al-Quran Buddies E-Hafazan Management.

a) feedback Class

8. AQBEMDatabase

The package does not contain any classes. This package just acts as reuse database that consist many table.

2.2 Dynamic Organization

Figure 2.2 shows the components and their relationship between each other in the system.

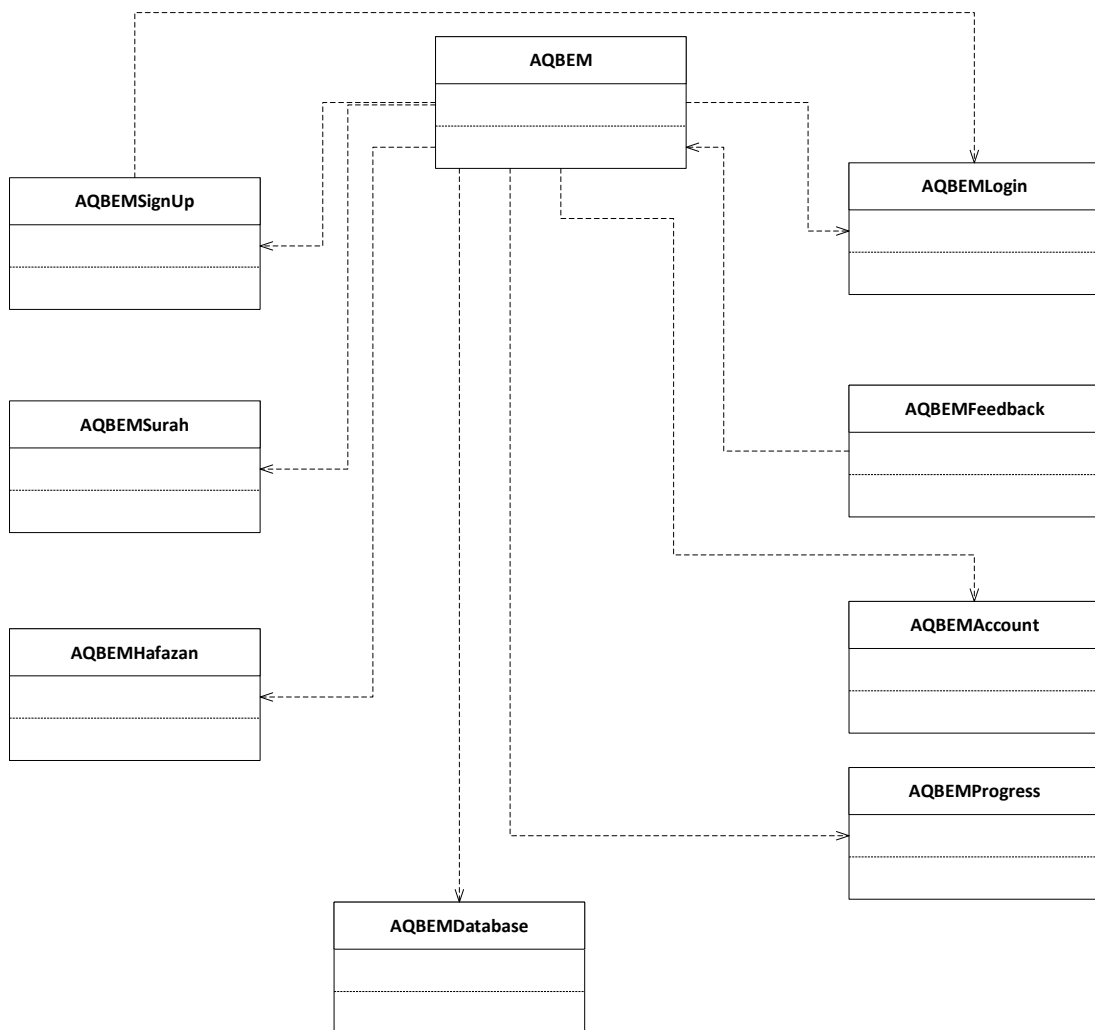


Figure 2.2 Component Diagram of al-Quran Buddies E-Hafazan Management

3.0 DETAILED DESIGN

3.1 AQBEMSignUp



Figure 3.1 AQBEMSignUp

3.1.1 signUp.class

Class Type	:	Entity class
Responsibility	:	To manage all sign up info in database
Attribute	:	studentName : varchar studentEmail : varchar studentGender : varchar studentpassword : varchar teacherName : varchar teacherEmail : varchar teacherGender : varchar teacherpassword : varchar parentsName : varchar parentsEmail : varchar parentsGender : varchar parentspassword : varchar
Method	:	void AddSignUp : To add new users sign up records public dbAdapter : To connect database with system (Connection db)

3.2 AQBEMLogin



Figure 3.2 AQBEMLogin

3.2.1 login.class

Class Type	:	Entity class
Responsibility	:	To manage all login info in database
Attribute	:	studentEmail : varchar studentpassword : varchar teacherEmail : varchar teacherpassword : varchar parentsEmail : varchar parentspassword : varchar
Method	:	void login : To login user into system public dbAdapter : To connect database with (Connection db) system

3.3 AQBEMSurah



Figure 3.3 AQBEMSurah

3.3.1 surah.class

Class Type	:	Entity class
Responsibility	:	To display surah retrieve from database
Attribute	:	surahId : varchar surahName : varchar surahVerse : varchar
Method	:	void surah : To return a list of surah public dbAdapter : To connect database with (Connection db) system

3.4 QBEMHafazan



Figure 3.4 QBEMHafazan

3.4.1 hafazan.class

Class Type	:	Entity class
Responsibility	:	To manage all hafazan info in database
Attribute	:	hafazanId : varchar studentEmail : varchar surahId : varchar surahName : varchar hafazanAudio : varchar hafazanVerse : varchar
Method	:	void hafazan : To display list of hafazan public dbAdapter : To connect database with (Connection db) system

3.5 AQBEMProgress



Figure 3.5 AQBEMProgress

3.5.1 progress.class

Class Type	:	Entity class
Responsibility	:	To manage all progress of hafazan in database
Attribute	:	progressId : varchar surahId : varchar surahName : varchar
Method	:	void progress : To return a list of progress public dbAdapter : To connect database with (Connection db) system

3.6 AQBEMAccount



Figure 3.6 AQBEMAccount

3.6.1 account.class

Class Type	:	Entity class
Responsibility	:	To manage all account info in database

Attribute	:	studentEmail	:	varchar
		studentpassword	:	varchar
		teacherEmail	:	varchar
		teacherpassword	:	varchar
		parentsEmail	:	varchar
		parentspassword	:	varchar
Method	:	void	:	To update personal info in
		updateAccount	:	account record
		public dbAdapter	:	To connect database with
		(Connection db)	:	system

3.7 AQBEMFeedback



Figure 3.7 AQBEMFeedback

3.7.1 feedback.class

Class Type	:	Entity class
Responsibility	:	To manage all feedback info in database
Attribute	:	studentEmail : varchar
		teacherEmail : varchar
		parentsEmail : varchar
		feedbackType : varchar
		problemSummary : varchar
		problemDetail : varchar
Method	:	void addFeedback : To add new feedback record
		public dbAdapter : To connect database with
		(Connection db) system

4.0 SYSTEM DESIGN APPROVAL

	Name	Date
Verified by: _____ Developer		
Approved by: _____ Client		

APPENDIX D
USER MANUAL

For

Al-Quran Buddies E-Hafazan Application
(AQBEM)

Generated by:

Nurul Athirah binti Mohd Marzuki Hussin

CB15111

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1.2	Organization of the Manual	1
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1.0 GENERAL INFORMATION

1.1 System Overview

Al-Quran Buddies E-Hafazan Management is a website system that helps user to memorize al-Quran. User are able to choose any surah available from the list and they can view the selected surah. They are able to view the verses of selected surah along with the audio, where they can play, pause, repeat and stop the audio. User also are able to test their memorization by speech or text. For text memorization, user need to key in input into provided textbox using Arabic language. For speech memorization, user can record audio for selected surah and then the audio will be evaluated by teacher based on pronunciation and 'tajwid'. User will able to view their hafazan progress after had done the tests.

1.2 Organization of the Manual

This manual contains three topics. First topic shall discuss the general information and overview of the system. Second topic shall discuss the system configuration, user access levels and contingencies and alternate mode of operation of al-Quran Buddies E-Hafazan Management System. Finally, last topic shall discuss the elements in each system interfaces, and step to start and exit the system.

2.0 SYSTEM SUMMARY

2.1 System Configuration

Al-Quran Buddies E-Hafazan Management runs in a web browser. This system is compatible with windows 7 and higher version. User needs to type the localhost address in the web browser in order to use the system. The system then can be used without other configuration.

2.2 User Access Level

This system consists of four users, visitor, student, teacher and parents. Visitor can sign up as a student, teacher or parents and give feedback. Student can view surah, take hafazan test, view hafazan progress, change details and give feedback. While teacher can view all students progress, evaluate recorded audio, change details and give feedback. Lastly, parents can view their child progress, change details and give feedback.

3.0 GETTING STARTED

3.1 Sign Up Page

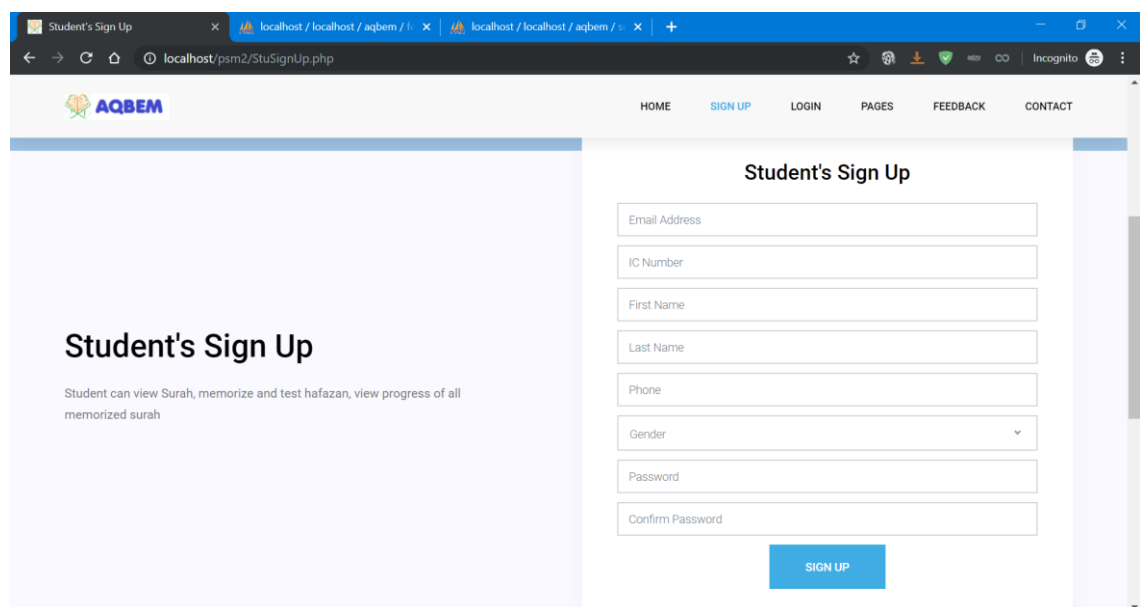


Figure 3.1 Sign Up Page

Feature	Function
Email textbox	: Key in email
IC textbox	: Key in IC number
First Name textbox	: Key in name
Last Name textbox	: Key in name
Phone textbox	: Key in phone number
Gender dropdown list	: Choose gender
Password textbox	: Key in password
Confirm Password textbox	: Key in confirm password
Sign Up button	: Sign up to system

3.2 Login Page

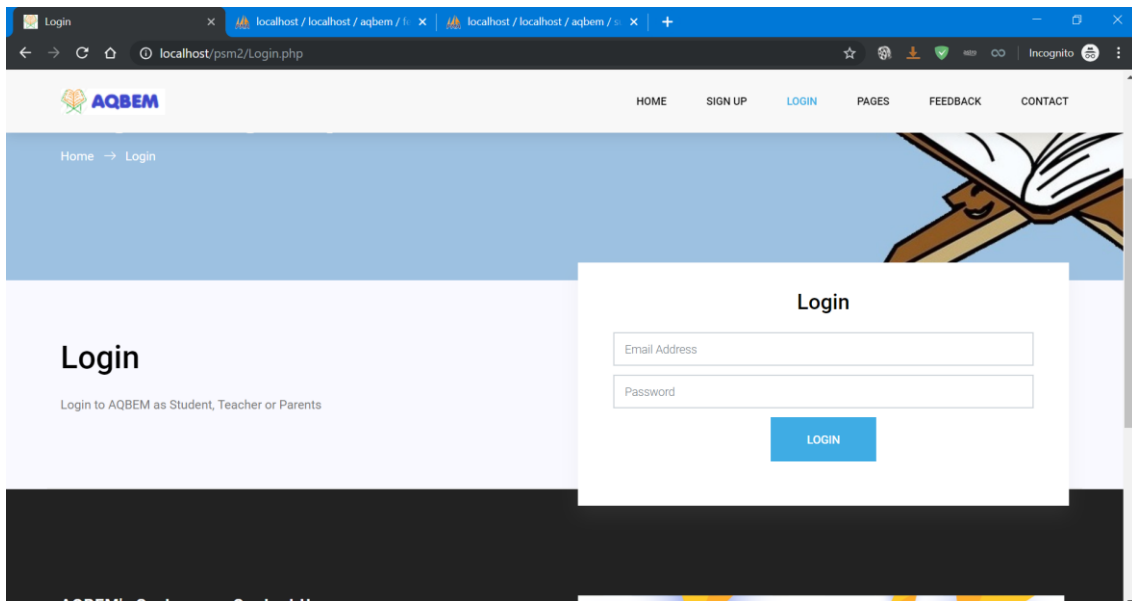


Figure 3.2 Login Page

Feature	Function
Email textbox	: Key in email
Password textbox	: Key in password
Login button	: Login into system

3.3 List of Surah Page

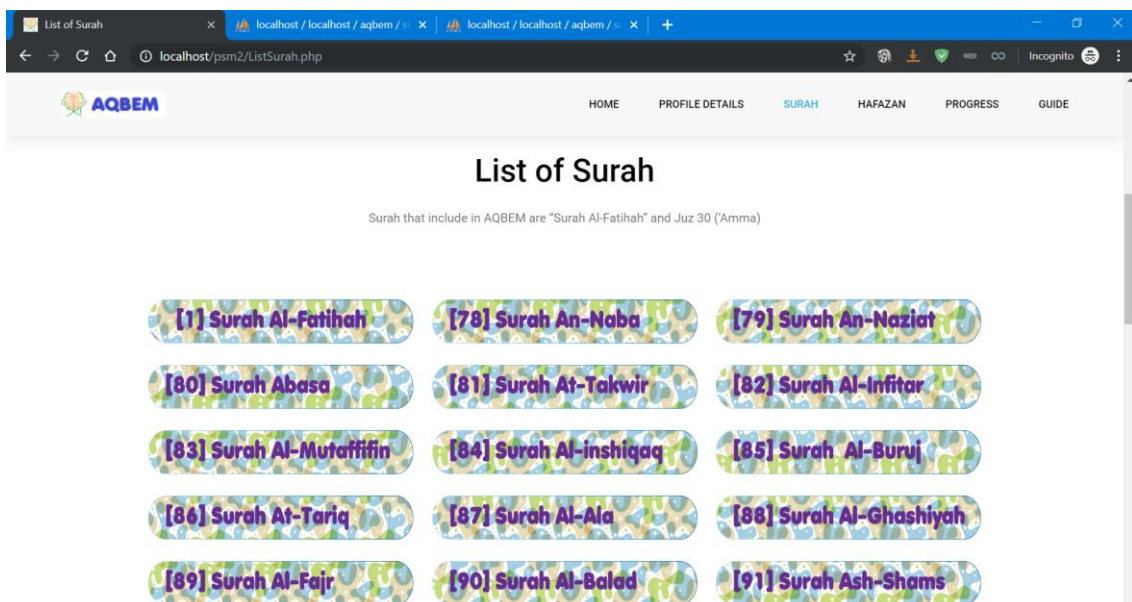


Figure 3.3 List of Surah Page

Feature : Function
 Image button : Redirected to selected surah page

3.4 List of Hafazan Page

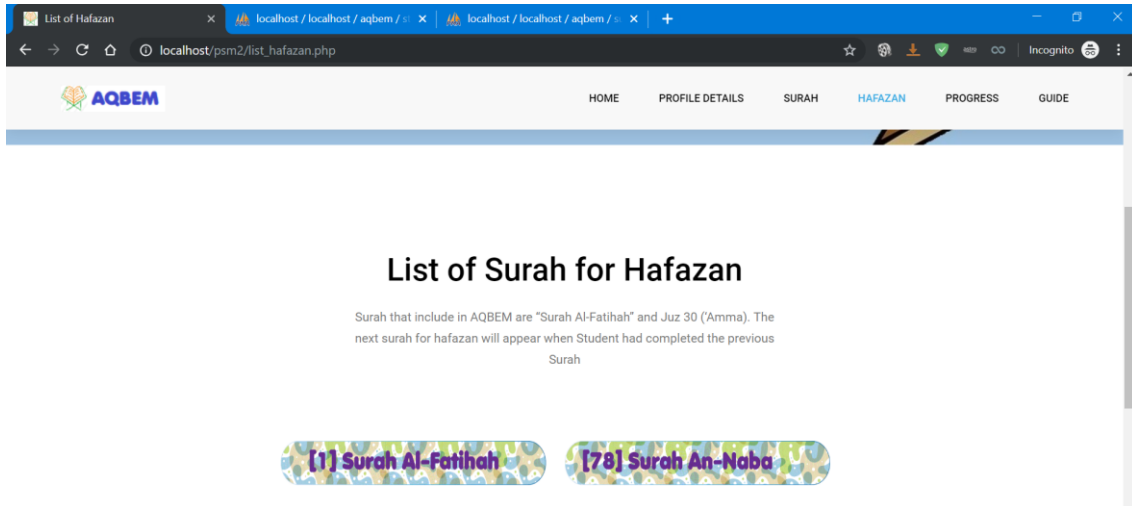


Figure 3.4 List of Hafazan Page

Feature : Function
 Image button : Redirected to selected surah page

3.5 Hafazan Test (Text) Page

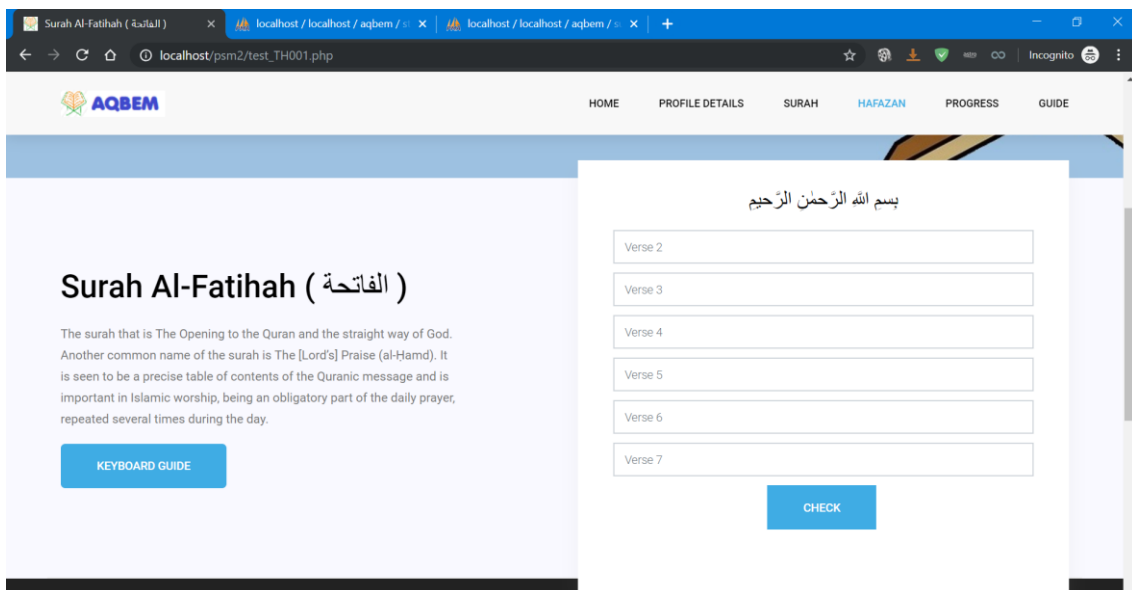


Figure 3.5 Hafazan Test (Text) Page

Feature	Function
Verses textbox	: Key in verses
check button	: Submit and check verses

3.6 Hafazan Test (Speech) Page

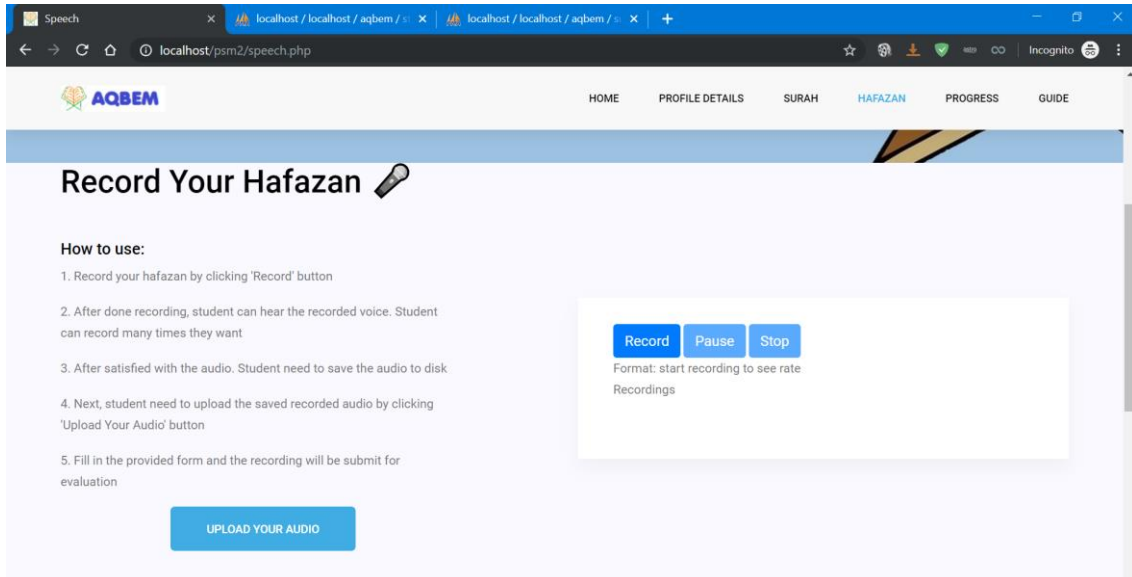


Figure 3.6 Hafazan Test (Speech) Page

Feature	Function
Record button	: Start the recording
Pause button	: Pause the recording
Stop button	: Stop the recording
Upload Your Audio button	: Upload audio to database

3.7 Feedback Page

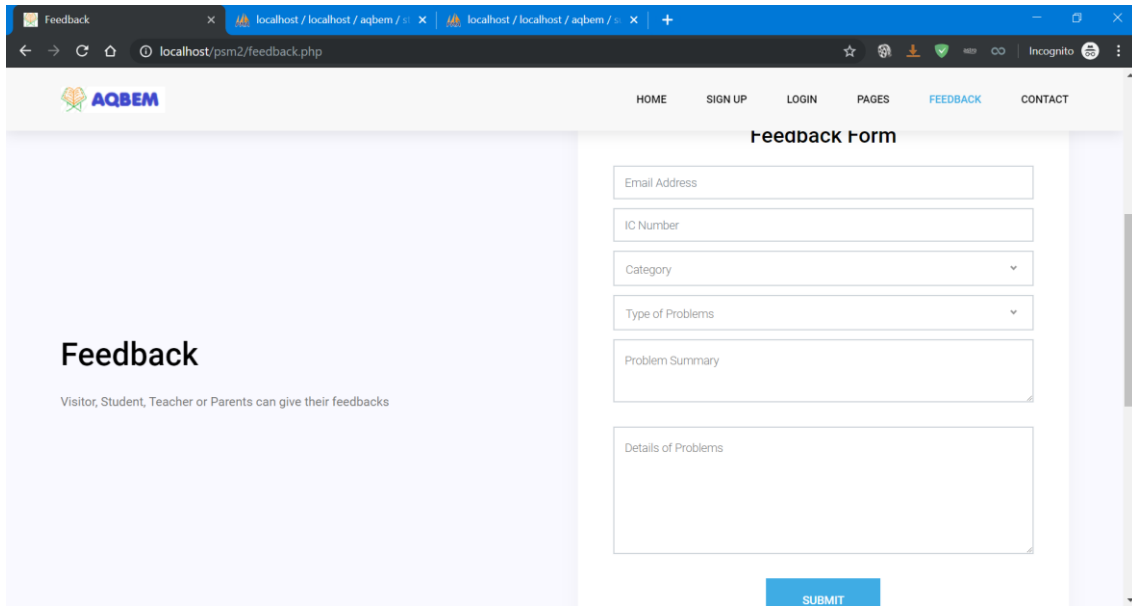


Figure 3.7 Feedback Page

Feature	Function
Email textbox	: Key in email
IC Number textbox	: Key in IC number
Category dropdown menu	: Choose user category
Type of problem dropdown list	: Choose type of problems
Problem summary textbox	: Key in problem summary
Details of problems textbox	: Key in details of problem
Submit button	: Submit to database

3.8 Student Progress Page

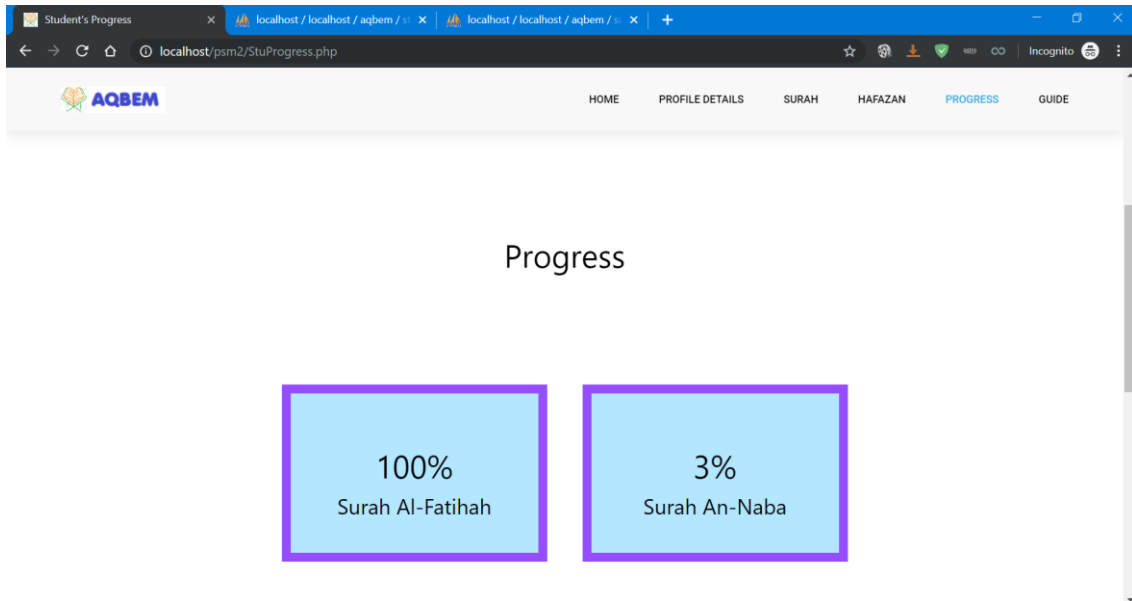


Figure 3.8 Student Progress Page

3.9 Profile Details Page

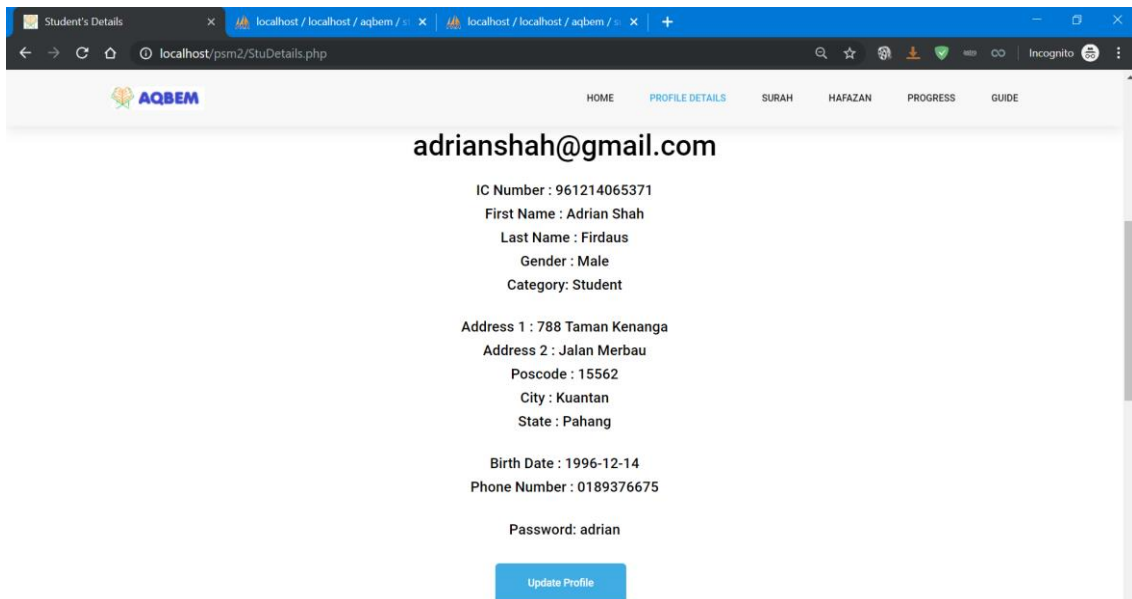


Figure 3.9 Profile Details Page

Feature

Function

Update Profile button

: Redirected to update profile page

3.10 Update Profile Page

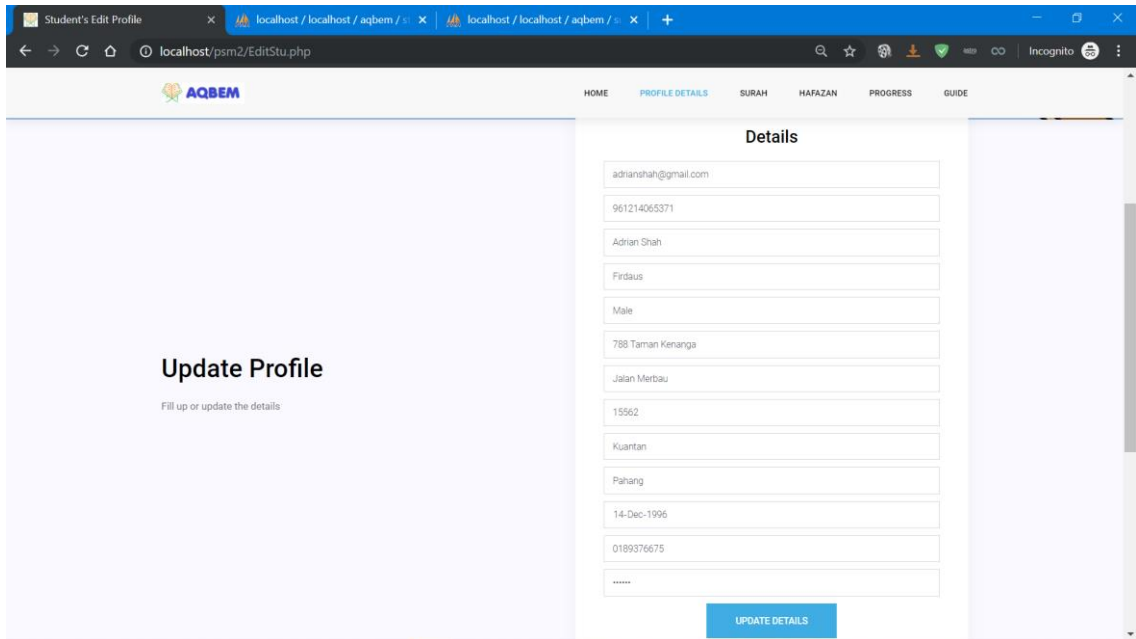


Figure 3.10 Update Profile Page

Feature	Function
Email textbox	: Key in email
IC textbox	: Key in IC number
First Name textbox	: Key in name
Last Name textbox	: Key in name
Phone textbox	: Key in phone number
Gender dropdown list	: Choose gender
Address1 textbox	: Key in address 1
Address2 textbox	: Key in address 1
Postcode text	: Key in postcode
City text	: Key in city
State text	: Key in state
Birthdate picker	: Pick birth date
Password textbox	: Key in password
Update details button	: Update details to system

3.11 My Child Progress Page

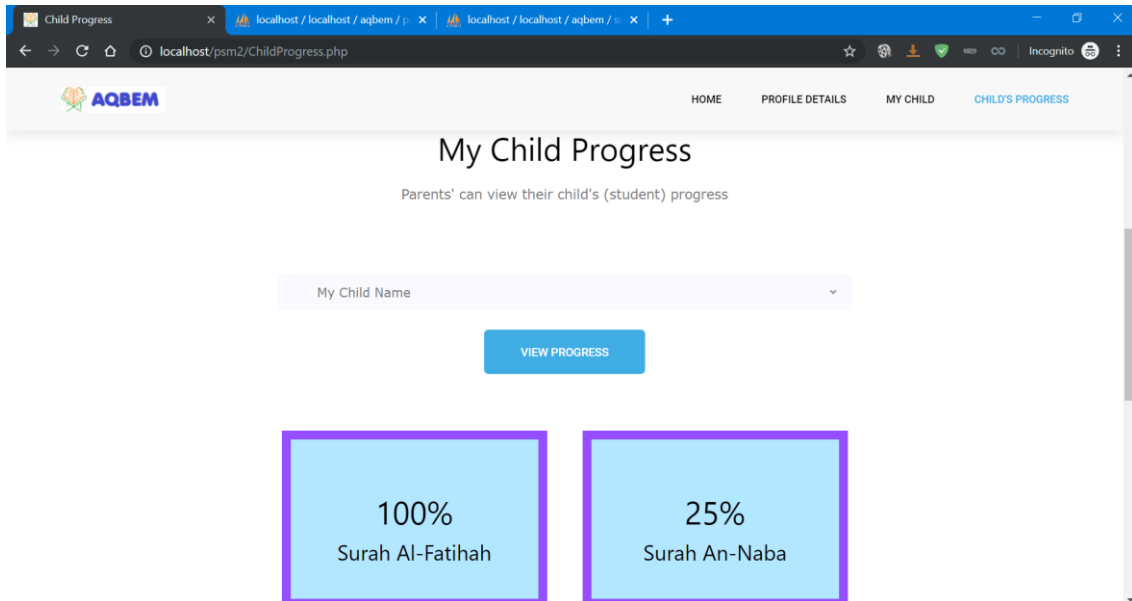


Figure 3.11 My Child Progress Page

Feature	Function
Child Name dropdown list	: Choose child name
View progress button	: Retrieve progress from system

3.12 All Students Progress Page

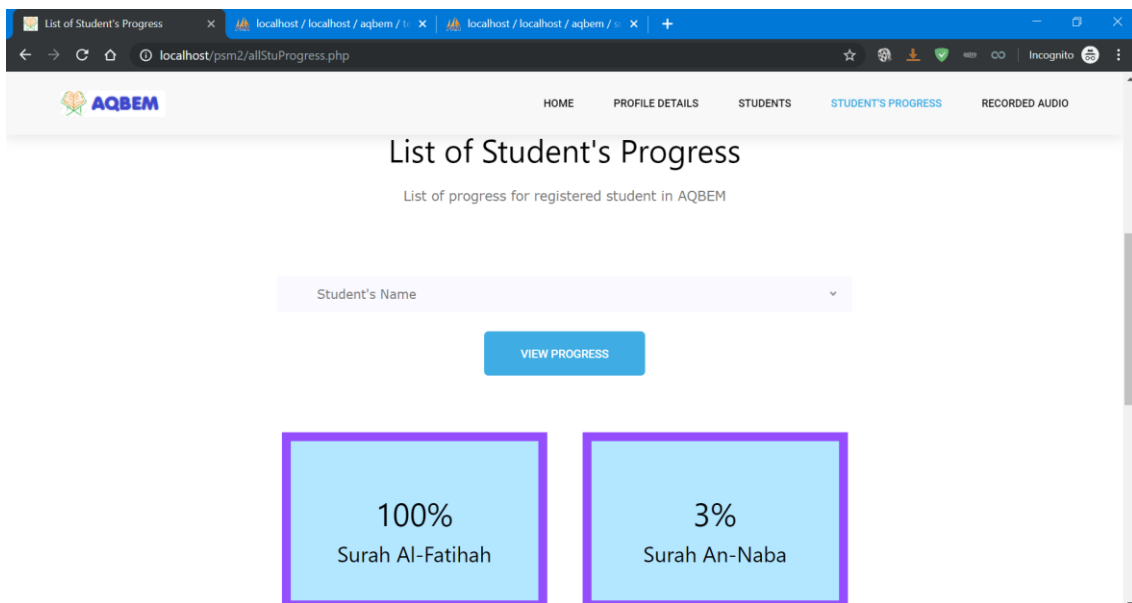


Figure 3.12 All Students Progress Page

Feature	Function
Student Name dropdown list	: Choose student name
View progress button	: Retrieve progress from system

3.13 Recorded Audio of Hafazan Page

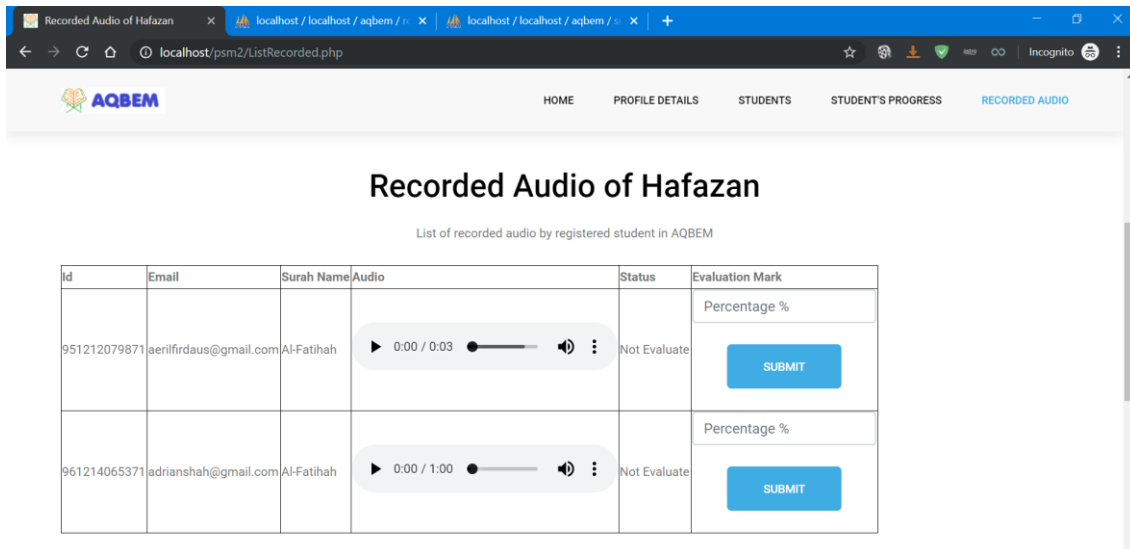


Figure 3.13 Recorded Audio of Hafazan Page

Feature	Function
Percentage textbox	: Key in percentage
Submit button	: Submit data to system

3.14 Selected Surah Page

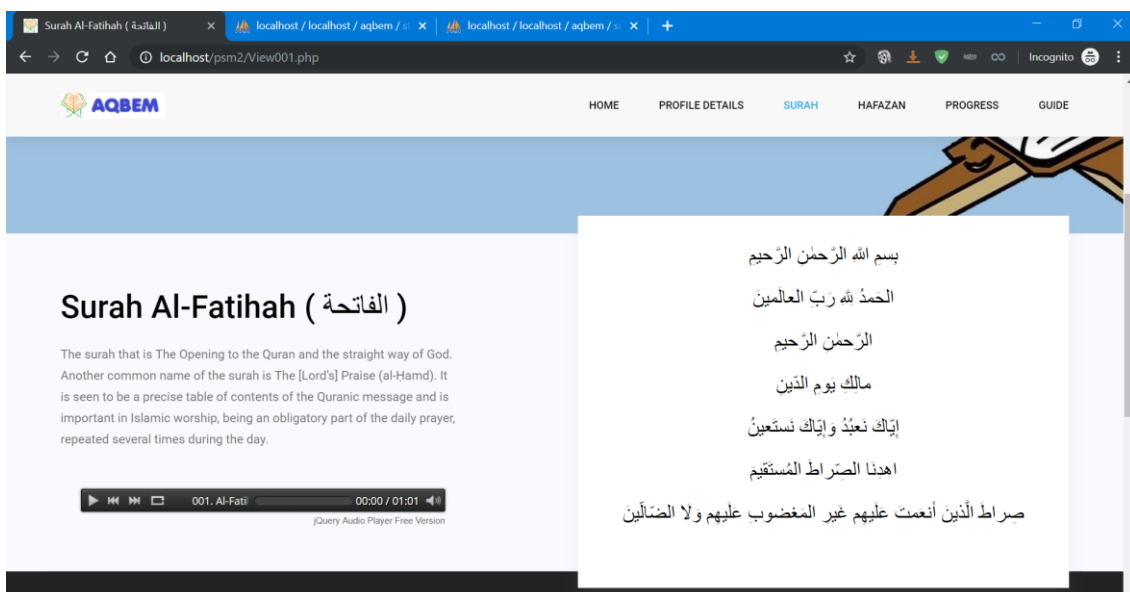


Figure 3.14 Selected Surah Page

3.15 Guide Page

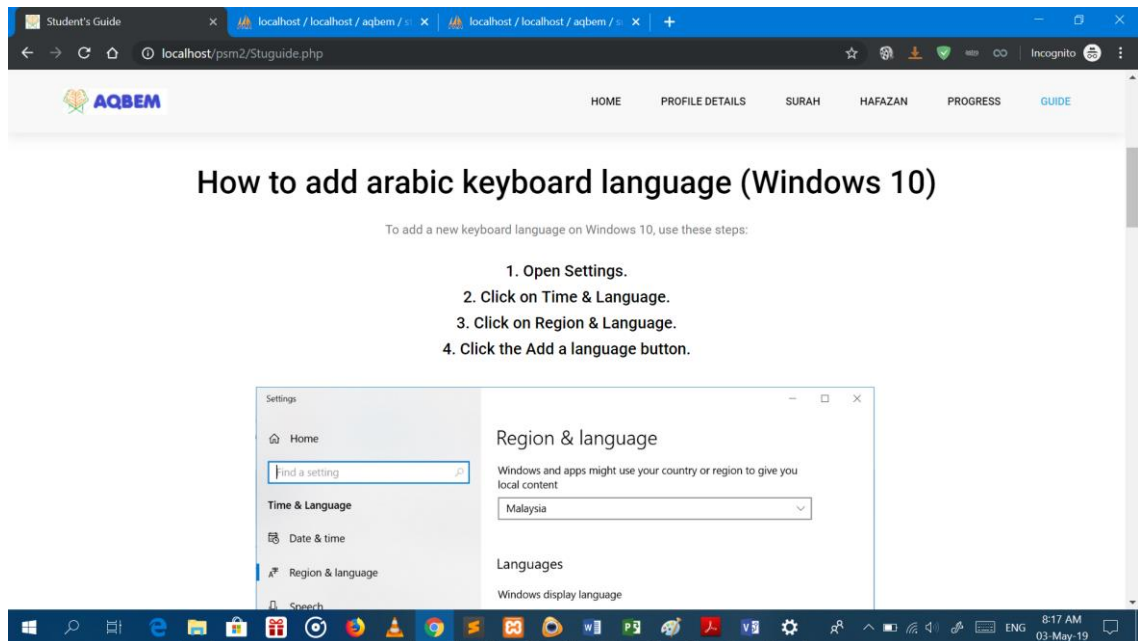


Figure 3.15 Guide Page

APPENDIX E

USER ACCEPTANCE TEST (UAT)

For

Al-Quran Buddies E-Hafazan Application

(AQBEM)

Generated by:

Nurul Athirah binti Mohd Marzuki Hussin

CB15111

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1.0 TESTING REPORT

The purpose of this section is to outline the User Acceptance Testing (UAT) process for the system. Approval of this testing implies that reviewers are confident that following the execution of the test plan, the resulting system will be considered fully-tested and eligible for implementation. The chosen user will go through each of the instructions in the user manual. Any errors or problems found by the user must be noted on this form. The form also need to be assigned by the user after the test is finished.

1.1 Visitor

1.1.1 Use Case Manage Sign Up

Table 1.1 Use Case Manage Sign Up

Event	Test Data	Expected Result	Actual Result	Pass/Fail
Click Sign Up button	Input valid data	User sign up successfully	Sign up successful	✓
Click Sign Up button	Input invalid data	System pop up error message. User sign up into system fail	Show error message	✓

1.1.2 Use Case Manage Feedback

Table 1.1.2 Use Case Manage Feedback

Event	Test Data	Expected Result	Actual Result	Pass/Fail
Click Submit button	Input valid data	User give feedback successfully	Give feedback success	✓
Click Submit button	Input invalid data	System pop up error message. User give feedback into system fail	Show error message	✓

1.2 Student

1.2.1 Use Case Manage Login

Table 1.2.1 Use Case Manage Login

Event	Test Data	Expected Result	Actual Result	Pass/Fail
Click Login button	Input valid data	User login successfully	Login successful	✓
Click Login button	Input invalid data	System pop up error message. User login into system fail	Show error message	✓

1.2.2 Use Case View Surah

Table 1.2.2 Use Case View Surah

Event	Test Data	Expected Result	Actual Result	Pass/Fail
Click button image of surah	Select a surah from lists	System will redirected selected surah	System redirected to selected surah	✓
Click Play button	Play audio	System play audio of surah successfully	Play audio of surah success	✓
Click Pause button	Pause audio	System pause audio of surah successfully	Pause audio of surah success	✓
Click Loop button	Loop audio	System loop audio of surah successfully	Loop audio of surah success	✓

1.2.3 Use Case Manage Hafazan

Table 1.2.3 Use Case Manage Hafazan

Event	Test Data	Expected Result	Actual Result	Pass/Fail
Click Check Button	Input valid data	System will notify user the status of answers whether it is correct or	Show status of answers, percentage and	✓

		wrong, percentage and total correct total correct verse	total correct verse	
Click Check Button	Input invalid data	System pop up error message.	Show error message.	✓
Click Record Button	Record audio	System can record audio, audio recorded can be save, play	Audio can be record, audio recorded can be save, play	✓

1.2.4 Use Case Manage Progress

Table 1.2.4 Use Case Manage Progress

Event	Test Data	Expected Result	Actual Result	Pass/Fail
Click progress option	View Progress	System will redirected to progress pages	Redirected to progress page n show percentage	✓
Click progress option	Progress is based on user email	System will redirected to progress pages	Redirected to user progress page n show percentage	✓

1.2.5 Use Case Manage User Account

Table 1.2.5 Use Case Manage User Account

Event	Test Data	Expected Result	Actual Result	Pass/Fail
Click Update Button	Input valid data	User update details successfully	System update details success	✓
Click Update button	Input invalid data	System pop up error message. User update details into system fail	Show error message	✓

1.2.6 Use Case Manage Feedback

Table 1.2.6 Use Case Manage Feedback

Event	Test Data	Expected Result	Actual Result	Pass/Fail
Click Submit button	Input valid data	User give feedback successfully	Give feedback success	✓
Click Submit button	Input invalid data	System pop up error message. User give feedback into system fail	Show error message	✓

1.3 Teacher

1.3.1 Use Case Manage Login

Table 1.3.1 Use Case Manage Login

Event	Test Data	Expected Result	Actual Result	Pass/Fail
Click Login button	Input valid data	User login successfully	Login successful	✓
Click Login button	Input invalid data	System pop up error message. User login into system fail	Show error message	✓

1.3.2 Use Case Manage Hafazan

Table 1.3.2 Use Case Manage Hafazan

Event	Test Data	Expected Result	Actual Result	Pass/Fail
Click Submit Button	Input valid data	Percentage of mark submit to system	Mark submit to system success	✓
Click Submit Button	Input invalid data	System pop up error message.	Show error message.	✓

1.3.3 Use Case Manage Progress

Table 1.3.3 Use Case Manage Progress

Event	Test Data	Expected Result	Actual Result	Pass/Fail
Click progress option	View Progress	System will redirected to progress pages	Redirected to progress page n show percentage	✓
Click progress option	Progress is based on user email	System will redirected to progress pages	Redirected to user progress page n show percentage	✓

1.3.4 Use Case Manage User Account

Table 1.3.4 Use Case Manage User Account

Event	Test Data	Expected Result	Actual Result	Pass/Fail
Click Update Button	Input valid data	User update details successfully	System update details success	✓
Click Update button	Input invalid data	System pop up error message. User update details into system fail	Show error message	✓

1.3.5 Use Case Manage Feedback

Table 1.3.5 Use Case Manage Feedback

Event	Test Data	Expected Result	Actual Result	Pass/Fail
Click Submit button	Input valid data	User give feedback successfully	Give feedback success	✓
Click Submit button	Input invalid data	System pop up error message. User give feedback into system fail	Show error message	✓

1.4 Parents

1.4.1 Use Case Manage Login

Table 1.4.1 Use Case Manage Login

Event	Test Data	Expected Result	Actual Result	Pass/Fail
Click Login button	Input valid data	User login successfully	Login successful	✓
Click Login button	Input invalid data	System pop up error message. User login into system fail	Show error message	✓

1.4.2 Use Case Manage Progress

Table 1.4.2 Use Case Manage Progress

Event	Test Data	Expected Result	Actual Result	Pass/Fail
Click progress option	View Progress	System will redirected to progress pages	Redirected to progress page n show percentage	✓
Click progress option	Progress is based on user email	System will redirected to progress pages	Redirected to user progress page n show percentage	✓

1.4.3 Use Case Manage User Account

Table 1.4.3 Use Case Manage User Account

Event	Test Data	Expected Result	Actual Result	Pass/Fail
Click Update Button	Input valid data	User update details successfully	System update details success	✓
Click Update button	Input invalid data	System pop up error message. User update details into system fail	Show error message	✓

1.4.4 Use Case Manage Feedback

Table 1.4.4 Use Case Manage Feedback

Event	Test Data	Expected Result	Actual Result	Pass/Fail
Click Submit button	Input valid data	User give feedback successfully	Give feedback success	✓
Click Submit button	Input invalid data	System pop up error message. User give feedback into system fail	Show error message	✓

2.0 SYSTEM TESTING APPROVAL

	Name	Date
Verified by: _____ Developer		
Approved by: _____ Client		