# ONLINE ASSESSMENT SYSTEM FOR PRIMARY SCHOOL

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# ONLINE ASSESSMENT SYSTEM FOR PRIMARY SCHOOL

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Thesis submitted in fulfillment of the requirements for the award of the degree of Bachelor of Computer Science

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## ABSTRAK

Sistem penilaian adalah kaedah atau alat yang digunakan oleh pendidik untuk menilai prestasi pelajar dalam pembelajaran. Melalui sistem penilaian berorientasikan peperiksaan, penilaian peperiksaan pelajar akan direkodkan. Pendidik akan mengetahui prestasi pelajar berdasarkan penilaian yang direkodkan. Dengan Sistem Penilaian Dalam Talian, pendidik boleh memasukkan penilaian mengesahkan ke pangkalan data dan juga melihat maklumat pelajar dan juga prestasi mereka sepanjang tahun sekolah. Objektif projek ini ialah mengkaji sistem penilaian sekolah untuk sekolah rendah. Kedua, untuk membangunkan Sistem Penilaian Sekolah Dalam Talian untuk sekolah rendah. Terakhir, untuk menguji fungsi Sistem Penilaian Sekolah Dalam Talian. Dalam projek ini, metodologi yang digunakan ialah Metodologi Air Terjun. Terdapat lima fasa dalam Metodologi Air Terjun iaitu fasa perancangan, yang kedua adalah analisis di mana maklumat itu dikumpulkan, yang ketiga adalah merancang antara muka laman web, yang keempat adalah pelaksanaan di mana kod tersebut akan dilaksanakan ke laman web dan Fasa terakhir ialah ujian. Ujian telah dijalankan untuk memastikan semua kerja berfungsi mengikut keperluan tanpa sebarang kesilapan. Ia juga memastikan bahawa sistem telah mencapai matlamat dan dapat menyelesaikan masalah yang berlaku sebelum ini.

## ABSTRACT

Assessment system is a method or tools that are used by the educator to evaluate student performance in learning. Through the exam-oriented assessment system, the student's exam evaluation will be recorded. The educator will know the performance of the student based on the recorded assessment. With Online Assessment System, the educator can input the assessment validate into database and also view student info and also their performance throughout the year of the school. The objective to this project is to study the school assessment system for primary school. Second, to develop the Online School Assessment System for primary school. Lastly, to test the functionality of Online School Assessment System. In this project, the methodology that was used is Waterfall Methodology. There is five phase in Waterfall methodology that is the planning phase, the second is the analysis where the information was gathers, the third is designing the interface of the website, the fourth is the implementation where the code will be implement to the website and the last phase is the testing. The testing were conducted to ensure all the function work according to the requirement without any error. It also to ensure that the system have achieve the objective and can solve the problem that happen before.

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# CHAPTER 1

# INTRODUCTION

## 1.1 Introduction

Assessment in education is referring to the wide variety method or tools that are used by educator to evaluate measure and document in learning progress, skill acquisition, or educational needs of students. In Malaysia, there is four issue and concern related to the assessment in Malaysia Primary school by (Choo, 2014). First is the exam-oriented system where there are different types of level of examination at the end of each level of schooling. In the first level of schooling that is the Primary School level at the end of the six year of primary education, Student will be seated to Primary School Achievement Test (UPSR). The second level is the Lower Secondary Examination (PMR) that was soon changed into FORM 3 Assessment (PT3) at the end of three years' schooling. A slight difference from PMR where student is tested based on the multiple choices and less on the critical thinking, according to muhyiddin yassin the minister of education in The Star Online article, Pt3 is where the Student would be assessed via written and oral test for Bahasa Melayu and English, written test for Science, Mathematics, Islamic Studies, Living Skills, Other Language while History and Geography would be assessed via assignment , practical test, projects, case studies and field study (Chen, 2014). The third level is Malaysia Certificate of Education (SPM) where it is the biggest exam for students throughout eleven years of schooling. The last public examination is the Malaysia Higher School Certificate Examination (STPM) or the Higher Malaysian Certificate for Religious Education (STAM) at the end of thirteen years' schooling.

The second issue is the School-based Assessment that is introduced as a part of the national Transformation Programme to produce the word-class human capital. According to (Choo, 2014), School-based assessment is a global approach in

assessment which assesses the cognitive, affective, and psychomotor domains encompassing intellectual, emotional, spiritual and physical aspects. It cover both academic and non-academic fields, thus it is tandem with the Primary School Standard Curriculum and National Educational Philosophy. The third issue is the cognitive level of assessment where it consists of Bloom's Taxonomy of Cognitive Levels that is Knowledge, Comprehension, Application, Analysis, Synthesis and Evaluation. According to (Bloom, 1956) knowledge is refer to the remembering of previous learned material, comprehension is an ability to grasp the meaning of material, meanwhile application is the ability to use the learned material in a situations. Furthermore, analysis is the ability to break down material into components part for the organizational structure easy to be understands. Synthesis is the ability to combine parts together to form a new whole and evaluation is the ability to judge the value of the material for a purpose.

Lastly, the fourth issues are the alternative assessment where the procedure is differs from the notions and practice of test with format, performance and implementation. The alternative assessment is more into the writing assessment because rather than a single impromptu evaluation, alternative assessment needs to provide continuous assessment for the student. One of example is direct test and group project can be consider as an alternative assessment where it involve student to interact with other student and learned from each other. Besides, continuous, longitudinal assessment will give student easy to remember the material that they have studies with a continuous practice rather than one-shot test in the traditional assessment.

With the assessment that is used by the education, one must record the progress or evaluation of the student to determine what is lacked by the students to keep on improving oneself for each of subject that they learned in each level of schooling. One of the methods is the School Assessment System where the achievement of the student throughout the examination will be recorded. The recorded evaluation can also be used for the teacher as a reference for improvement of the student and school record.

## 1.2 Problem statement

In order to analysis and evaluate the progress of the student's exam result, the teacher is ought to record the marks of exam for each subject and level of classes. Most of school especially in the rural area, they still using the traditional method of recording data that is by using paper or Microsoft excel in storing the data of student. Thus, this will lead to paper waste and the data that is store in the computer can be easily destroyed if something happen to the computer that contains the data. Beside, storing too much data in computer can cause the teacher to have a hard time in searching for the data and it can become too unorganized.

Furthermore, most of the public school will send the student's education info to Kementerian Pendidikan Malaysia where the entire student's education info will be saved and parents also can view the examination marks info using Sistem Analisis Peperiksaan Sekolah (saps) website. Because of that, most of the public school does not have their own website for assessment evaluation special for their own school. Most of the class activity would be recorded into the Teacher Management book where the teachers would write their academic plan for the week in the book. Thus, making class activity's analysis and evaluate for the student and school will take some time.

## 1.3 Objective

a) To study the school assessment system for primary school.
b) To develop the Online School Assessment System for primary school.
c) To test the functionality of Online School Assessment System.

## 1.4 Scope

a) The system focusing on the Classroom teacher and Subject Teacher, student registrations, viewing the student information, examination score for subject and student evaluation.
b) The system is a web-based system.
c) The user for the system is: Teachers

## 1.5 Thesis Organization

In this thesis, there consists five chapter overall. The first chapter shall discuss on introduction of the project, problem statement, objective and also scope. In the second chapter, there will be literature review to briefly explain the similar existing application or case study. For the third chapter, there will explaining the methodology that is use in this project and also the storyboard. In the fourth chapter there will explain the design and implementation of the project. Lastly, the fifth chapter is the conclusion of the project.

# CHAPTER 2

# LITERATURE REVIEW

## 2.1 Introduction

This chapter is discussing on the assessment in Malaysia Primary school, examination system in primary school and research of the same existing application of school assessment system.

## 2.2 Assessment in Malaysia Primary School

School-based Assessment (SBA) is an assessment for learning that has been implemented in Malaysia school since 2011. It is an attempt to achieve the aspiration of national philosophy of education towards developing learner's emotional, physical, intellectual abilities and spiritual, evaluate learners' learning progress and reduce exam-oriented learning. Minister of Education introduce the SBA along with Standard-based Primary School Curriculum (KSSR) in year 2011. There are three domains that it is measuring; cognitive, effective and psychomotor.

Malaysia SBA consists of two main components, which is academic component where it focuses on the school and central assessment. Meanwhile, the other one is the non-academic component where it contains sport, physical activities, psychometric assessment and co-curriculum assessment. The subject teacher will plan, administer, score and record the assessment according to the guidelines from the Malaysia Examination Syndicate (Lembaga Peperiksaan Malaysia). By practicing both the assessment for learning and assessment of learning concept, SBA can assessing the process and product of each and every student in formative and summative way. Monitoring the individual's development and also helping them increasing their potential in the studies.

According to (Md Ghazali, 2016), the context evaluation focuses on the environment where the changes happen involving two factors that is school type and school category. There are three dimensions of evaluation such as input evaluation where it focuses on material and personal needs in SBA, appropriateness of personal qualifications and suitability of physical infrastructure and ICT. The second is process evaluation that includes twelve first-order factors that is feeling, believe, understanding, courses, readiness, administration, in-house training, moderation, challenge, role, monitoring and importance of SBA. The last is the product evaluation that include student's knowledge, attitude and motivational toward learning.

## 2.3 **The Star platform**

The Star platform is an online assessment system which provide the student and the teacher of report and assessment analysis. Based on the students need and learning progress, the teacher would conduct a necessary assessment based on student performance. The feature of the STAR platform is included a web based central assessment item bank, computerised in marking and reports on student's performance, and also Online assessment for student.

Based on (Hong Kong Education City , 2018), Star is used as an upgrade of Hong Kong Assessment Authority (HKEAA)'s 'Student Assessment' system starting from 2016/2017. The new program is compatibility with the new technology such as Tablet, notebooks and desktops. The teacher also can follow-up the progress of the student performance.

Figure 2.1 STAR's result detail.

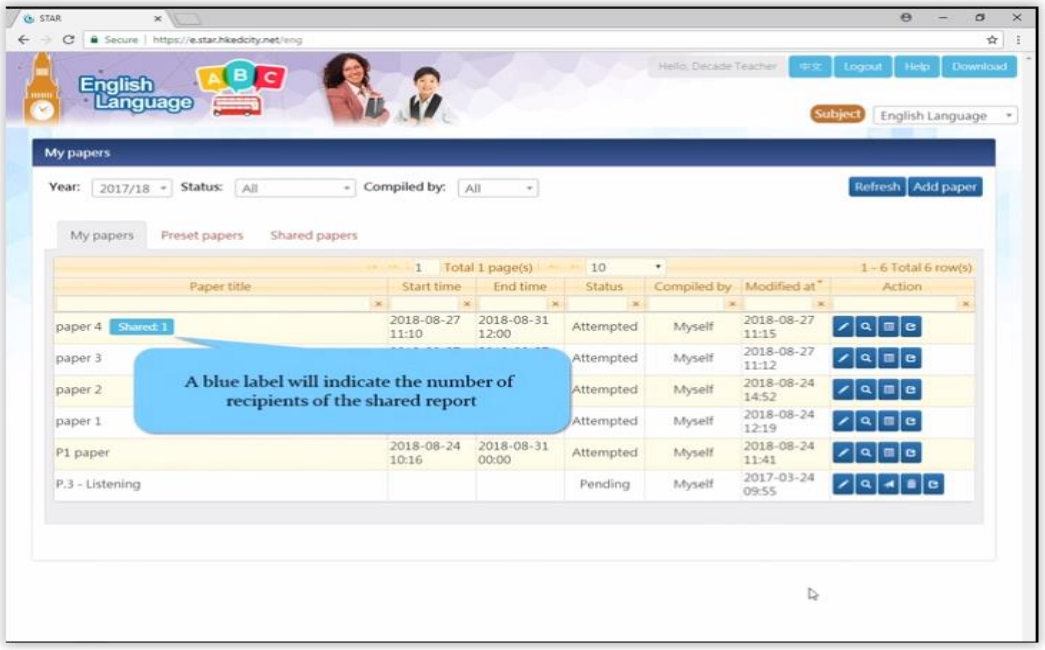



Figure 2.2: Sharing paper with other teacher

STAR platform allow the teacher to share their material paper with other teachers. STAR also has different kind of question that the student can work online such as multiple question, fill-in-the-blank question, mathching question, inline question, and others different question.

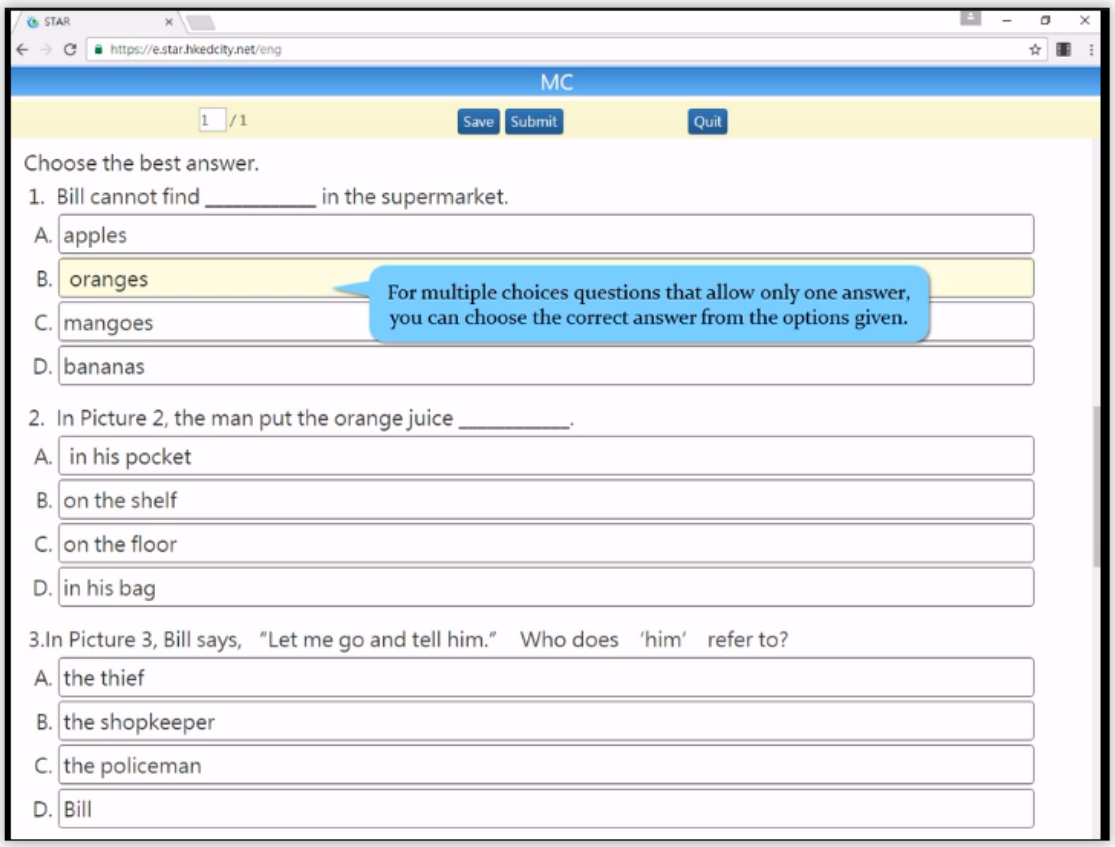



Figure 2.3: Example of the multiple question that the STAR provide for the student.

## 2.4 **Classroom Monitor**

Classroom monitor is a United Kingdom (UK)'s Online Assessment System (© Prime Principle 2018, 2018). The teacher and school leaders can less their workload with using the Classroom monitor in monitoring the progress of the student in class. The classroom monitor tracking the performance of student's Live in the class.

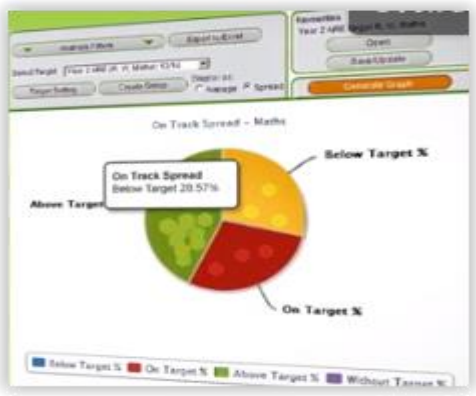



Figure 2.4: The progress of the student in Classroom Monitor

Figure 2.5: the teacher can get daily updates on any Cohor Groups.

## 2.5 **Sistem Analisis peperiksaan sekolah (SAPS)**

Sistem Analisis Peperiksaan Sekolah(SAPS) for parents is a system that allow the parents to view their child achievement throughout the exam anytime and anywhere. It contains the student from primary school level 1 to secondary school form 5. They need to visit https://sapsnkra.moe.gov.my/ibubapa2/index.php and input the student's IC number or Birth certificate, country, State, and the school name.

Figure 2.6 Screenshot of the student Information according to the year.

The subject will be shown with the teacher's name according to the subject at the left side of the page. The parents can choose to view the slip or just simply view the exam result.

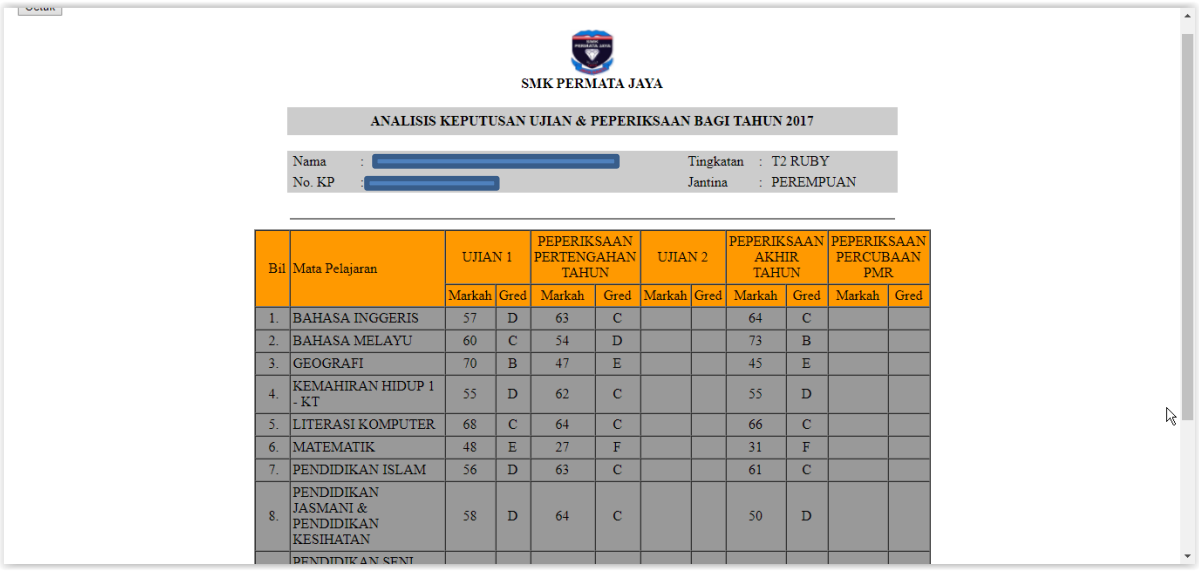



Figure 2.7 Screenshot of the exam result

- **SAPS for Teacher**

Beside from the SAPS for parents, there is also SAPS for teacher that is a Sistem analisis peperiksaan sekolah. A system for the teacher to key in the mark of the student to the Kementerian pendidikan Malaysia. Each teacher has their own specific ID and password that has been assign by SAPS official.

Figure 2.8 SAPS for teachers

## 2.6 Comparison between existing Online Assessment System

Table 2.1 show the comparison between the existing system of THE STAR Platform, The Classroom Monitor, and System Analysis of School Examination (SAPS).

Table 2.1 Comparison between existing online Assessment System

| | **The STAR platform** | **The Classroom Monitor** | **Sistem Analisis Peperiksaan Sekolah( SAPS)** |
|---|---|---|---|
| **Platform** | Website | System/tablet | website |
| **Purpose** | For the teacher and student to do assessment by using the STAR platform while the teacher can monitor the student's progress | The teacher can monitor the student progress by Online even in class | The parent can view their children progress in schools. |
| **User** | Student and Teachers | Teachers | Teacher , student, and Parents/ guardian |
| **Functionality** | Record and view the progress of the student. Also give online task for the student | Record and view the Student progress along the class. | View the progress of the student grade for the examination. |

Table 2.1 shows the comparison between the three existing systems of Online Assessment systems. First, both the STAR and Sistem Analisis Peperiksaan Sekolah (SAPS)'s platform is for website, while The Classroom Monitor has their own tablet and system that they use in school. Furthermore, the purpose of the STAR is monitoring the progress of the students' and the giving the assessment through the STAR. The Classroom Monitor's purpose is for the teacher to monitor the student's progress and class activity by online in class. The SAPS's purpose is to view the student's examination progress for the parents

Most of the users for all the three systems are mostly from the student and teacher and the SAPS has additional for the parents that want to view their children's exam result.

# CHAPTER 3

# METHODOLOGY

## 3.1 Introduction

This chapter shall discuss about the methodology used in Online School Assessment System that has been selected including the phase that is involved. The system is a web-based where it involves HTML, PHP, MySQL and also JavaScript. The detail of the system's flow will be explained inside this chapter.

## 3.2 Methodology

The method of development use in this project is Waterfall methodology. Waterfall is a traditional methodology that commonly used in system development to develop and maintaining the system. In Waterfall, most of the phase is related to each other. Each phase must be completed before moving on to the next phase. The phase of Waterfall are planning, Analysis, Design, Implementation, and Testing.

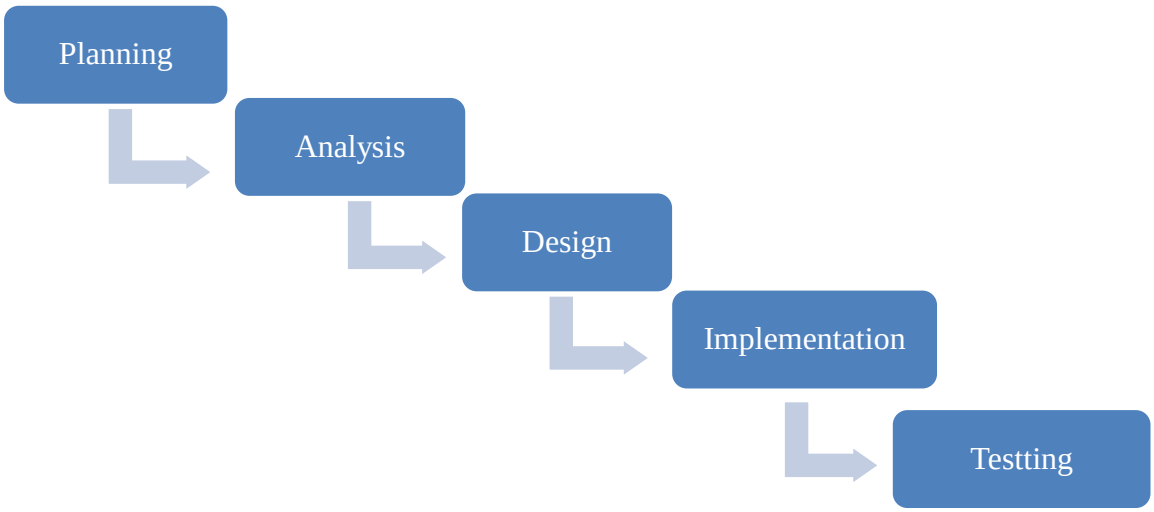



Figure 3.1: Waterfall methodology

In Waterfall, there is (5) phase that is involved in the development of the software. The phase that involved is planning, analysis, design, implementation, and lastly maintenance of the software.

Table 3.1: Waterfall Methodology's Phase and Description

| Phase | Description |
|---|---|
| **Planning** | The first phase of Software Development Life Cycle is plan. Planning the objective and the scope of the project. |
| **Analysis** | The second phase is where developer would analysis the problem solving of the project. Analysing the requirement in making the system. Analysing the previous similar existing systems. |
| **Design** | In the third phase, developers need to design the flow of the project. Designing the webpage for the system. The flow of the system and webpages. |
| **Implementation** | The fourth is implementation phase where the function and the source code would be implementing in the system. |
| **Testing** | Testing will be conducted for the project. The Test Case would be used to testing the system. |

## 3.3 Development phase

### 3.3.1 Planning

In this phase, the project will be using the Waterfall's first phase, planning. The project needs to plan on what objective of the project that needs to have and also in how to start the project. After that, determine the objective of the project that is to study the school assessment system for primary school and also to develop the online school assessment system for primary school and to test the functionality of the Online Assessment System. Gantt chart is used in making planning for the project to run without any problem and finish due time. Gantt chart is in APPENDIX A as shown.

### 3.3.2 Analysis

After confirming the objective of the project, analysis needs to be work on to know the requirement that need to have in the system. The requirement can be obtains based on the client information. Furthermore, requirement can also be obtain by studying the previous similar system or based on survey for the random user. Moreover, the hardware and software that need to be used is also analyse to develop the system.

Based on figure 3.2, the system start when the user login into the webpage. Then the user would be directed to the homepage. The user can open both the homeroom page and also the subject page. For the homeroom page, there is student list where the user can view the student information. Second is the class performance where the user can view the class performance based on exam's terms. The user also can register new students. For the subject page, the user can view the student progression in the subject performance. The user also can edit exam's result in the Subject page. All the data entered would be transferred to the Online Assessment System's database.

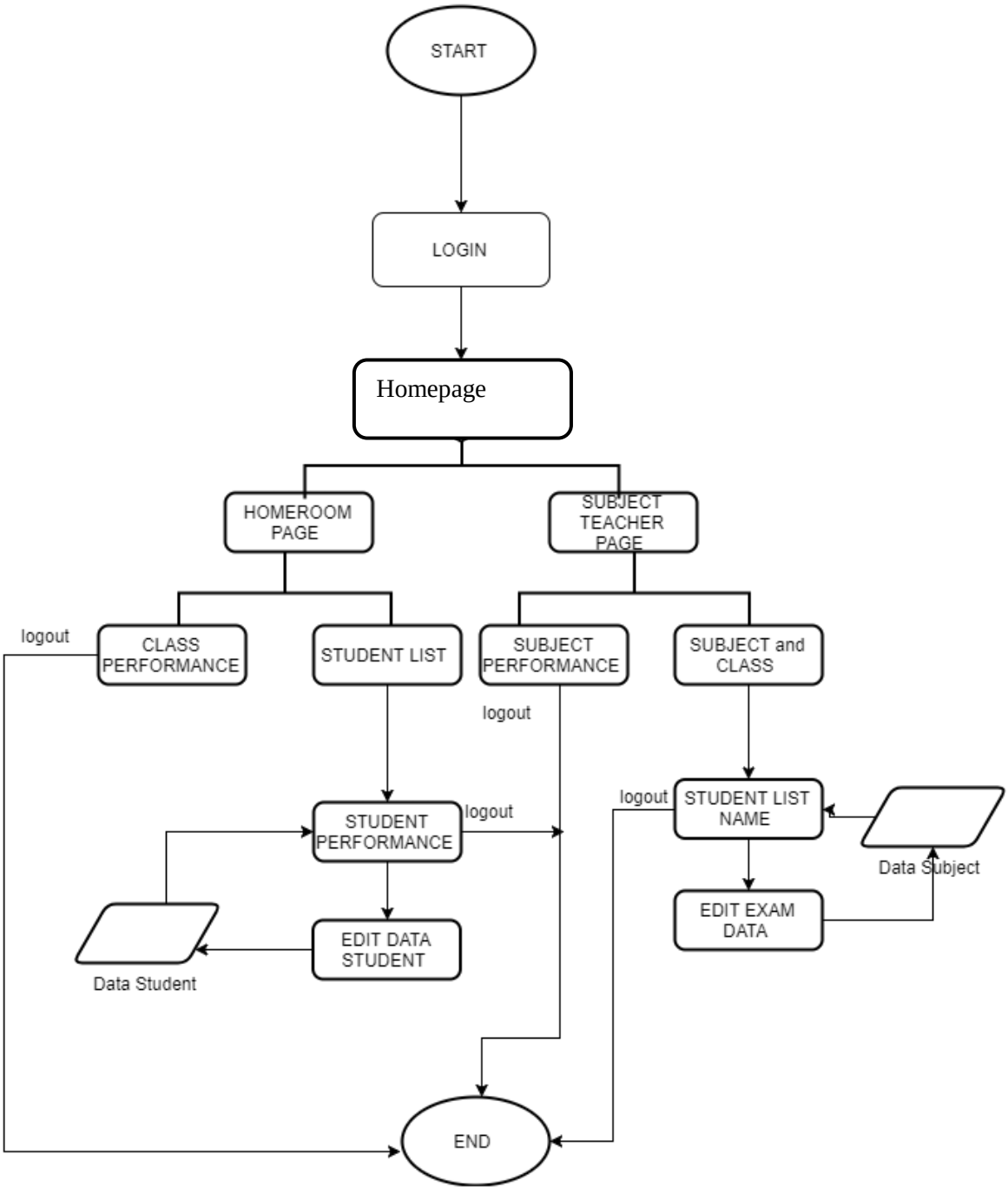



Figure 3.2: Online assessment System's flowchart

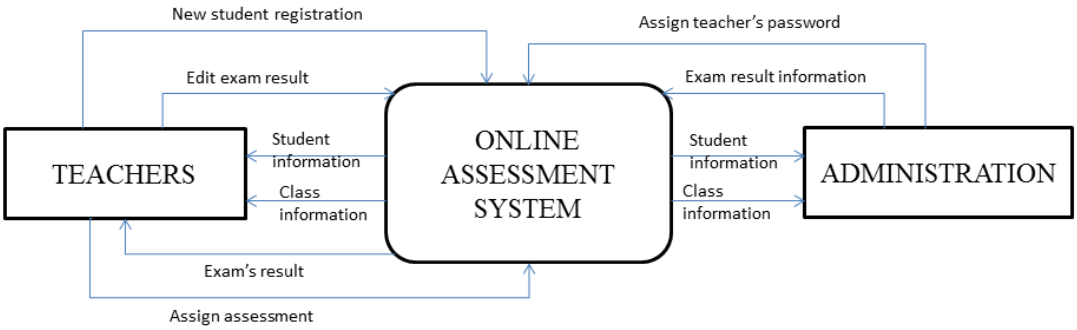



Figure 3.3: Context Diagram for Online Assessment System

Figure 3.3 show the context diagram for the Online Assessment System. The teacher can register new student, editing the examination result and also assigning class assessment for the class. Meanwhile, the administration is assigning the teachers Username and password, and notifies the exam information.

Meanwhile Figure 3.4 below show the Use Case Diagram for Online Assessment System. Use Case diagrams is a representation of the user's interaction with the systems. In Online assessment system, User must login first before proceed to the next page. User can view the homeroom page where the user can view the student information. User also can view the subject page where the user then be used to editing the exam results. User also can register the new students.

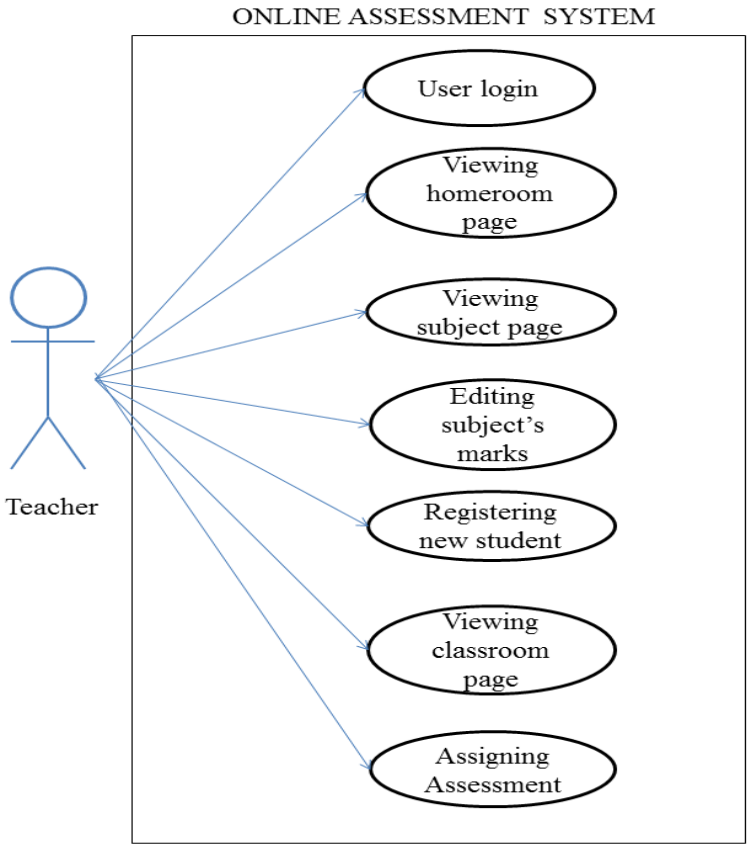



Figure 3.4 Use Case Diagrams for Online Assessment System

### 3.3.3 Design

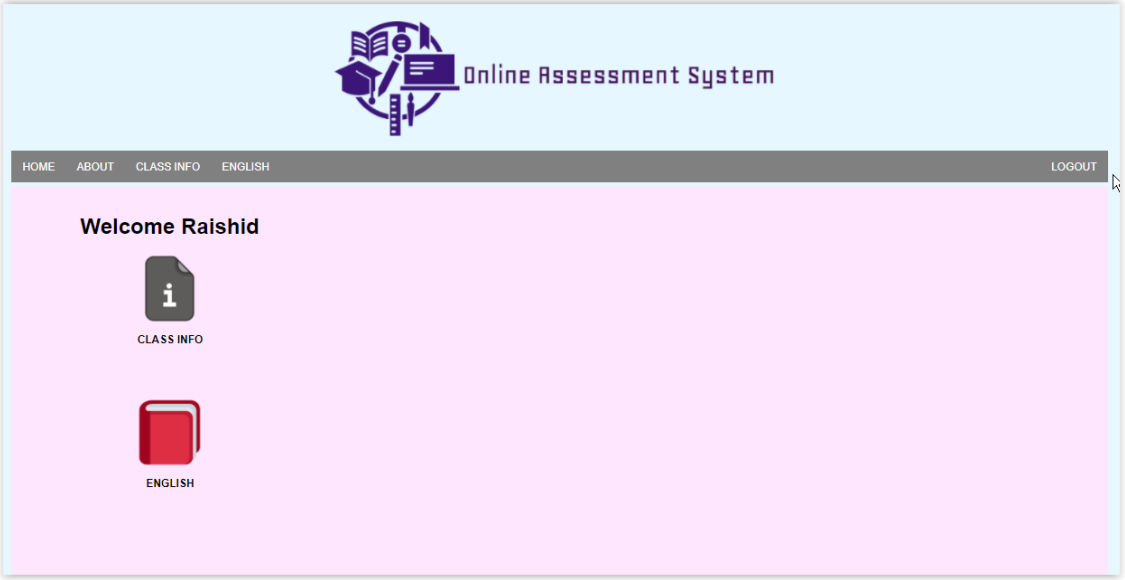
The design phase is the process where the design of the interface will be concluded. The interface design is based on the requirement that has been collected in the analysis phase. In this system, the user has to function as Homeroom teacher and also as Subject teacher. Each user can view the student in their own homeroom class and also can view the student marks exam in subject class. The user can also edit the mark exam in their subject page. Meanwhile the user can only view their homeroom student marks of other subject.

### 3.3.3.1 Storyboard

Screen Title : Login Screen 1 of 6

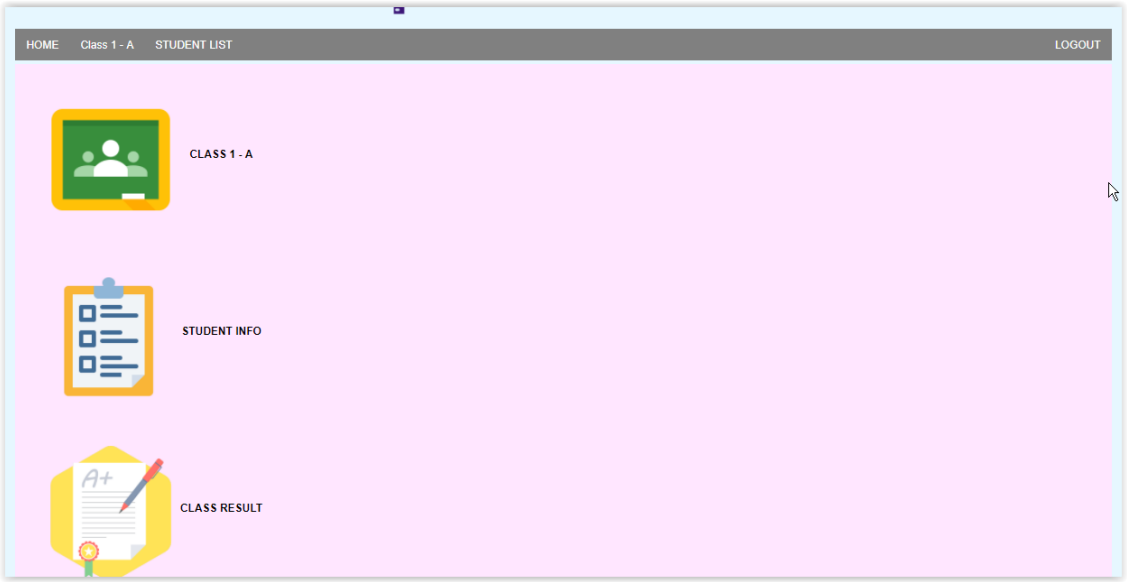
| Navigation: Link to Screen 2<br><br>Graphics : Exactly as shown<br><br>Animation: none<br><br>Audio: none<br><br>Video: none<br><br>Hyperlink: hyperlink to forgot password page. | Screen Description<br><br>■ User is able to log in to the internet.<br><br>■ User can retrieve new password if the user forgot their password. |
|---|---|

Screen Title: Online Assessment System screen 2 of 6



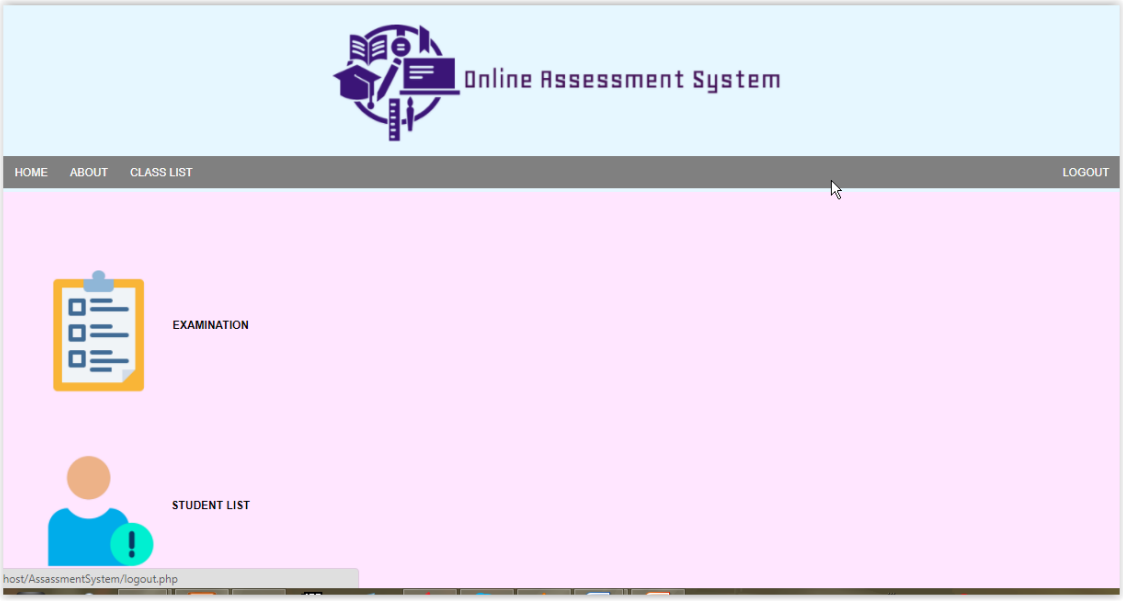

| Navigation : Link to screen | Screen description |
|---|---|
| Graphics: Online Assessment System logo, information icon and Books icon.<br><br>Animation: none<br><br>Audio: none<br><br>Video: none<br><br>Hyperlink: hyperlink to Class info and Subject pages | ■ The user information is on the page.<br>■ User can go to class info page<br>■ User able to go to Subject page |

Screen Title: Class Information Screen 3 of 6



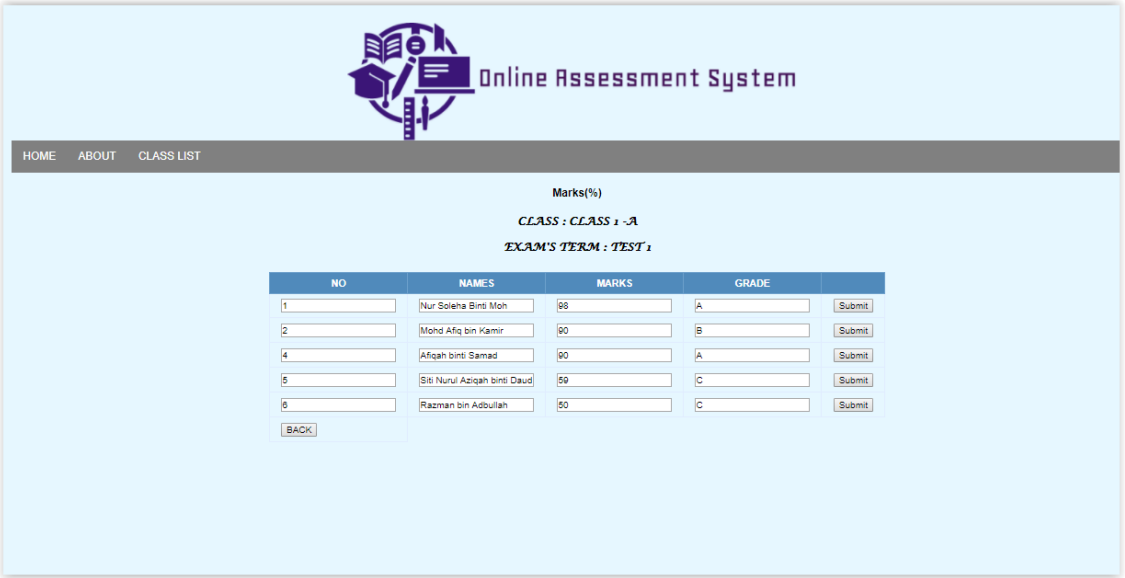

| Navigation : Link to screen | Screen description |
|---|---|
| Graphics: Online Assessment System logo, variety icons.<br><br>Animation: none<br><br>Audio: none<br><br>Video: none<br><br>Hyperlink: hyperlink to Classroom page, Student Information page, and Class Result page. | ■ All the elements should be shown simultaneously.<br><br>■ User is able to go to any link in the screen. |

Screen title: Subject page Screen 4 of 6



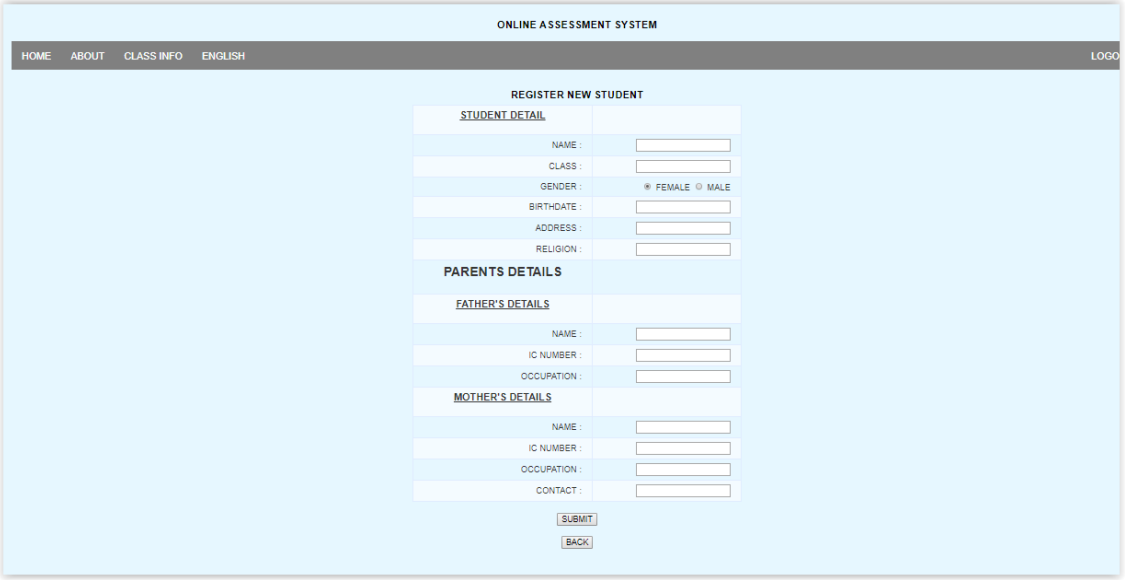

| Navigation : Link to all pages<br><br>Graphics: Online Assessment System logo, variety icons.<br><br>Animation: none<br><br>Audio: none<br><br>Video: none<br><br>Hyperlink: hyperlink to Exam page and Student List page | Screen description<br><br>■ All the elements should be shown simultaneously.<br><br>■ User is able to go to any link in the screen. |
|---|---|

Screen Title: Exam results Edit Screen 5 of 6




| Navigation : Link to all pages<br><br>Graphics: Online Assessment System logo, buttons, and textbox.<br><br>Animation: none<br><br>Audio: none<br><br>Video: none<br><br>Hyperlink: hyperlink to Submit button and Back to previous page. | Screen description<br><br>■ All the elements should be shown simultaneously.<br><br>■ User is able to change the data in the textbox.<br><br>■ User able to send the data<br><br>■ The name should be display. |
|---|---|

Screen Title: New Student Registration Screen 6 of 6




| Navigation : Link to all pages<br><br>Graphics: Online Assessment System logo, text-family: Arial<br><br>Animation: none<br><br>Audio: none<br><br>Video: none<br><br>Hyperlink: hyperlink to screen | Screen description<br><br>■ All the elements should be shown simultaneously.<br><br>■ User is able to input information in the textbox.<br><br>■ User can only choose gender between male or female<br><br>■ Notification that the data has been save in database. |
|---|---|

### 3.3.4 Implementation

Implement is start once the design is finished. All the requirement and design is used to get goal of the project in the implementation. The developer need to take part from the start to know the detail of the project. The implementation is from the design and storyboard designed by the designer.

The implementation phase is where the start of the develop system and the coding of the system. It is also the implement of the function that is needed in the project. In this project, there are two (2) sides that are the homeroom site and also the subject site. For the homeroom site, the user can add new student and also view the student status in exam. While in the subject site, the user can view and edit the mark of the student exam.

### 3.3.5 Testing

Testing is would be conducted to find out if there is any error or flaw in the systems. This is done to prevent any problem for the client during the installation of the software. Based on (LaTonya , 2015), in Software Testing there is four level of testing that need to be completed before it can be cleared for use. The four levels are unit testing, integration testing, system testing, and acceptance testing.

Unit testing is where the program was submitted to assessment focusing on specific component or unit of software to determine whether it is fully functional. Second is integration testing where it is allow the combination units within the program to be tested. This level was designed to find interface defect or error between the function or modules. The third is system testing, this testing is tested as a whole complete application. This test is to evaluate if the system was met with the outline requirement and quality standards. The final level is acceptance test where it is to determine if the system is ready to be release, based on (LaTonya , 2015). Once it has been completed, the program will be delivered to production.

## 3.4 **Tools**

The list of hardware and software that is used in this project is as below as table 3.2 and table 3.3

Table 3.2: Description of the hardware requirement

| **Hardware** | **Description** |
|---|---|
| Personal laptop | HP-PC<br>Intel® Core™i7-4500CPU@1.80GHz 2.40GHz<br>4.00GB RAM<br>64-bit Operating System |

Table 3.3: Description of the Software requirement

| **Software** | **Description** |
|---|---|
| Window 8.1 | Work as the Operation System (OS) for the development system |
| Microsoft Office Words | To create the documentation of the project |
| Notepad++ | To edit the source code |
| Xampp | The plat-form of the Apache HTTP server and MySQL database server |
| MySQL | • Database that is used in the project to store the data. |

# CHAPTER 4

# RESULTS AND DISCUSSION

## 4.1 Introduction

In this chapter, there will be the design on the Online Assessment System webpage and the flow of the system. This chapter will be discussing on the process involving the project development. At the end of the chapter, there would be User Manual of the Online Assessment System.

## 4.2 Database

In this project, database is necessary to storing the data of the user (Teachers) for login into website and also Student's data to view the information of the students. The platform that this project uses is Xammp and PHP. For that case, MySQL database is used in storing the data.

## 4.3 **ER Diagram**

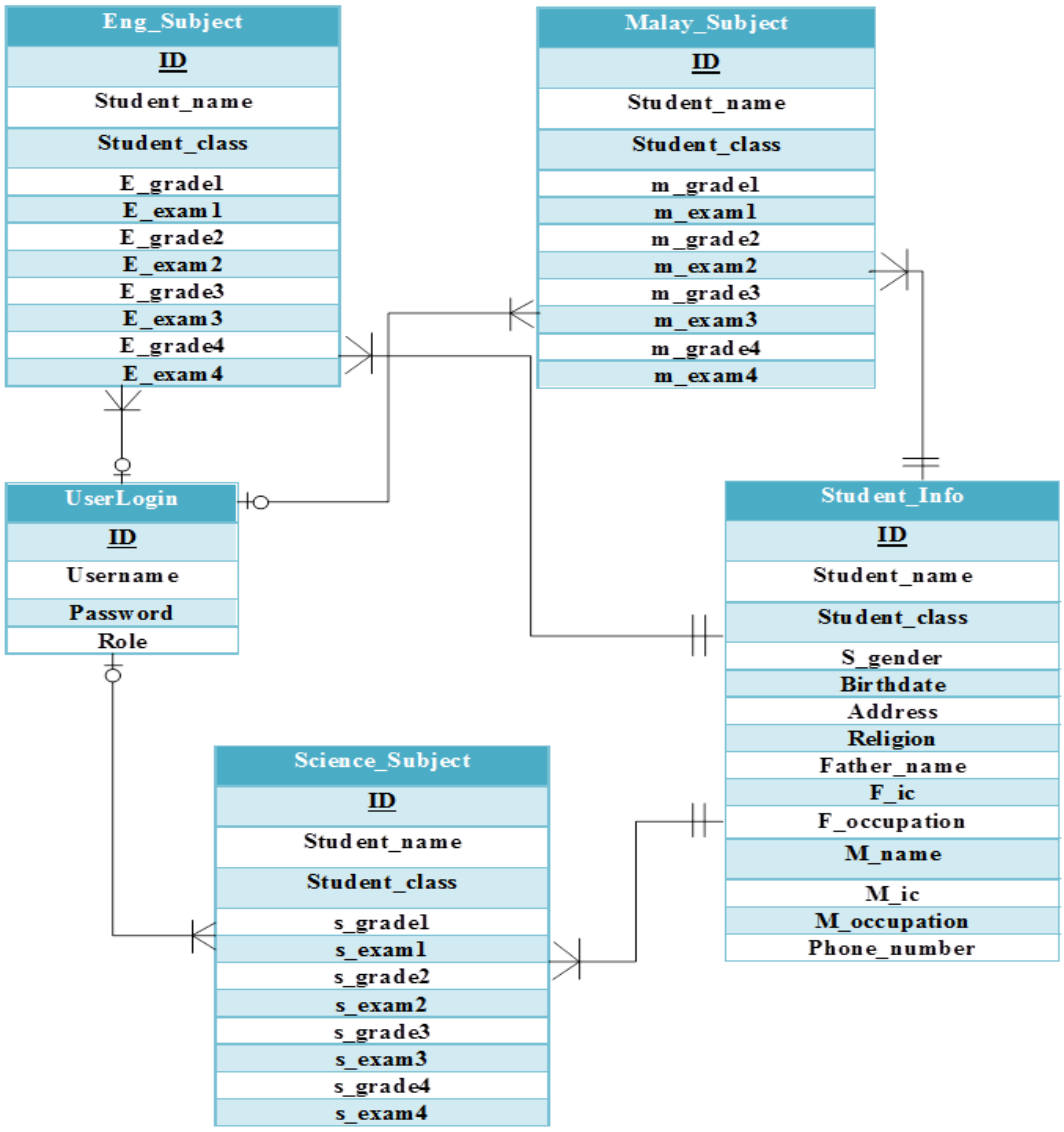



Figure 4.1: ER Diagram for Online Assessment System

Figure 4.1 shows the ER Diagram for Online Assessment System. ER Diagrams is the relationship of elements within entities instead of relationships between entities themselves. ER diagrams are used to model and design relational database. The user login has relationships one to many with all subject. Meanwhile Student info has many to many relationships with all the subjects.

## 4.4 Data Dictionary

Data dictionary is a define set of tables that provides information about the database. The data dictionary is shown below:

### 4.4.1 Login

Table 4.1 Data Dictionary for table User

| Field Name | Description | Data Type | Constraint |
|---|---|---|---|
| **Id** | User ID | Int(11) | Primary Key |
| **username** | Users Username | Varchar(50) | |
| **password** | User's Password | Varchar(50) | |
| **role** | User's position (Subject Teacher or Homeroom Teacher) | Varchar(30) | |

Table 4.1 shows the User data dictionary that is use for the login between the teachers. The data will be prepared by the admistration. The primary key for User is id. While the role will be the determined which page the user will be directed to.

### 4.4.2 Student Information

Table 4.2 Data Dictionary for table student_info

| Field Name | Description | Data Type | Constraint |
|---|---|---|---|
| **Id** | Student ID | Int(11) | Primary Key |
| **student_name** | Student Name | Varchar(100) | |
| **student_class** | Student Class | Varchar(10) | |
| **s_gender** | Student's Gender | text | |
| **Birthdate** | Student's birthdate | Date | |
| **Address** | Student's home address | Text | |
| **Religion** | Student's Religion | Varchar(10) | |
| **Father_name** | Student's Father Name | Varchar(100) | |
| **F_ic** | Student's Father IC number | Varchar(15) | |
| **F_occupation** | Student's Father occupation | Varchar(10) | |
| **M_name** | Student's Mother Name | Varchar(100) | |
| **M_ic** | Student's Monther IC number | Varchar(15) | |
| **M_occupation** | Student's Mother occupation | Varchar(10) | |
| **Phone_number** | Home phone Numbers | Varchar(20) | |

Table 4.2 is shown the student information data dictionary where student's data will be stored based on the attribute table. The Primary key of student information database is id. The student's id is usually used to call the specific data and information. All of the student registration's data will be directed to this table.

### 4.4.3 English subject

Table 4.3 Data Dictionary of eng_sub

| Field Name | Description | Data Type | Constraint |
|---|---|---|---|
| **Id** | Student ID | Int(11) | Primary Key |
| **student_name** | Student Name | Varchar(100) | |
| **student_class** | Student Class | Varchar(50) | |
| **e_exam1** | English first term exam marks | Varchar(5) | |
| **e_grade1** | English first term exam's grade | Varchar(10) | |
| **e_exam2** | English middle term exam marks | Varchar(5) | |
| **e_grade2** | English middle term exam's grade | Varchar(10) | |
| **e_exam3** | English second term exam marks | Varchar(5) | |
| **e_grade3** | English second term exam's grade | Varchar(10) | |
| **e_exam4** | English final term exam marks | Varchar(5) | |
| **e_grade4** | English final term exam's grade | Varchar(10) | |

Table 4.3 is the English subject data dictionary. This table is for input the student's marks of English exam. The primary key of this table is id. The id of this table must be same with the student id. Meanwhile, the student_class is the foreign key where it to be view by the id and student class.

### 4.4.4 Malay Subject

Table 4.4 Data Dictionary of malay_sub

| Field Name | Description | Data Type | Constraint |
|---|---|---|---|
| **Id** | Student ID | Int(11) | Primary Key |
| **student_name** | Student Name | Varchar(100) | |
| **student_class** | Student Class | Varchar(50) | |
| **m_exam1** | English first term exam marks | Varchar(5) | |
| **m_grade1** | English first term exam's grade | Varchar(10) | |
| **m_exam2** | English middle term exam marks | Varchar(5) | |
| **m_grade2** | English middle term exam's grade | Varchar(10) | |
| **m_exam3** | English second term exam marks | Varchar(5) | |
| **m_grade3** | English second term exam's grade | Varchar(10) | |
| **m_exam4** | English final term exam marks | Varchar(5) | |
| **m_grade4** | English final term exam's grade | Varchar(10) | |

Table 4.4 is the Malay subject data dictionary where the marks or evaluation of the exam will be stored. The primary key for the table is id. The foreign key is the student_class attribute.

## 4.5 Development tool

The development tools is a computer program or software that is used to create, develop, debug, maintain and testing to develop different kind of software and application. To develop the online assessment system website, Xampp and Notepad++ is used.

Xampp is an open-source cross-platform web server solution stack package developed by Apache Friends. It is free and easy to install Apache distribution that contains MariaDB, PHP, and Perl. It contain Apache HTTP server, MySQL database and others.

Notepad++ is a Microsoft Windows' text editor and source code editor. To create the website based on PHP programing language, Notepad++ is used as source code editor for this development. Notepad++ has many language that can be used and also commonly and easy to use by many software developers. Several languages that are used is HTML, PHP and CSS source code is develop by using the Notepad++.

## 4.6 Implementation

### 4.6.1 Login

The first page that will be directed to the User is the login page as shown in figure4.1. User need to input the username and password that has been assign by the administration to enter the homepage of the Online Assessment System.

Figure 4.2: the interface of login page

```
if(isset($_POST['login'])){

        $username=$_POST['username'];

        $password = $_POST['password'];

        $q = mysqli_query($conn, "SELECT * FROM user WHERE
username = '$username' AND password = '$password' ");

        $row = mysqli_fetch_array($q);

        $type = $row['role'];

        $isexist = mysqli_query($conn, "SELECT * FROM `user` WHERE
`username` = '$username' AND `password` = '$password'");

if($checkuser == 1){

$_SESSION["type"] = $row['role'];

$_SESSION["username"] = $row['username'];if ($type=="homeroom"){

echo '<script>window.location.replace("homeroompage.php");</script>';}

        elseif ($type=="english"){          echo
'<script>window.location.replace("EngTeachHomepage.php");</script>';}
                    else{     echo
"<script>window.location.replace('engsubHP.php');</script>";     }}

        else{     echo "<h1> invalid username or password!</h1> ";}
```

Figure 4.3: Source code of PHP login function

In figure 4.3, it is shown the source code of the login page. The function will check if the username and the password are the same as the database. The role will be the determined for the user to directed to their own page. If the username or the password is wrong, the user will be unable to enter the page.

### 4.6.2 Homeroom page

After the user is directed to their page, the homepage will have two option between the homeroom page and also the subject page. The user can choose to go to homeroom page or the subject page as shown in figure 4.4.

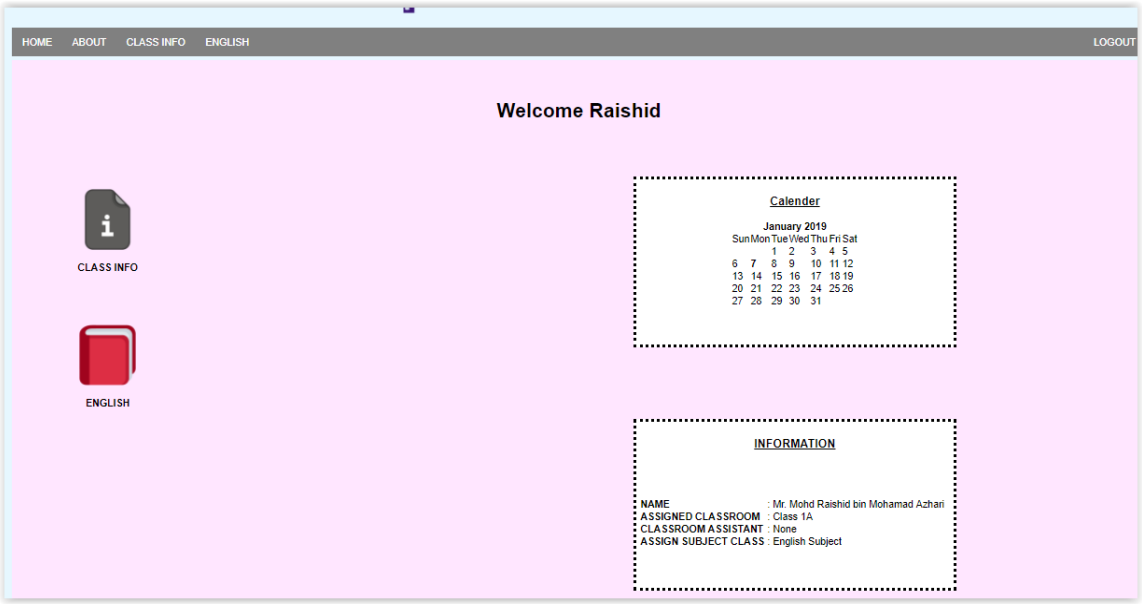



Figure 4.4: Homepage of the Online Assessment System website

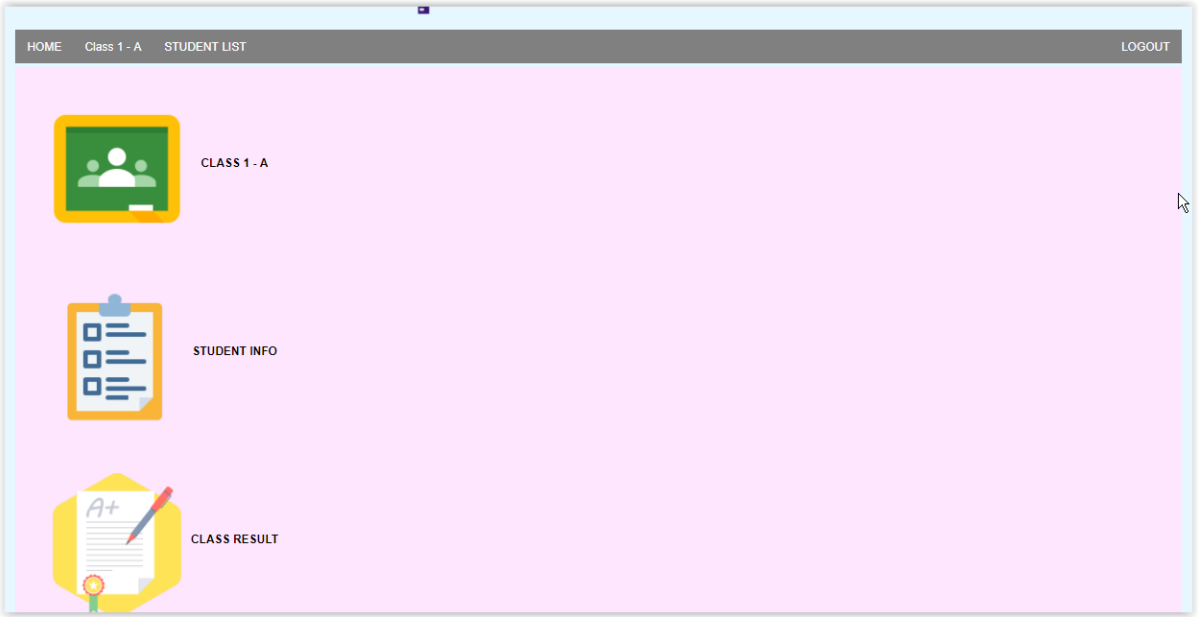



Figure 4.5: the Homeroom teacher page

### 4.6.3 Student Registration

The user can add new students into the system. The data then will be stored to the database and can be view by the other teacher.

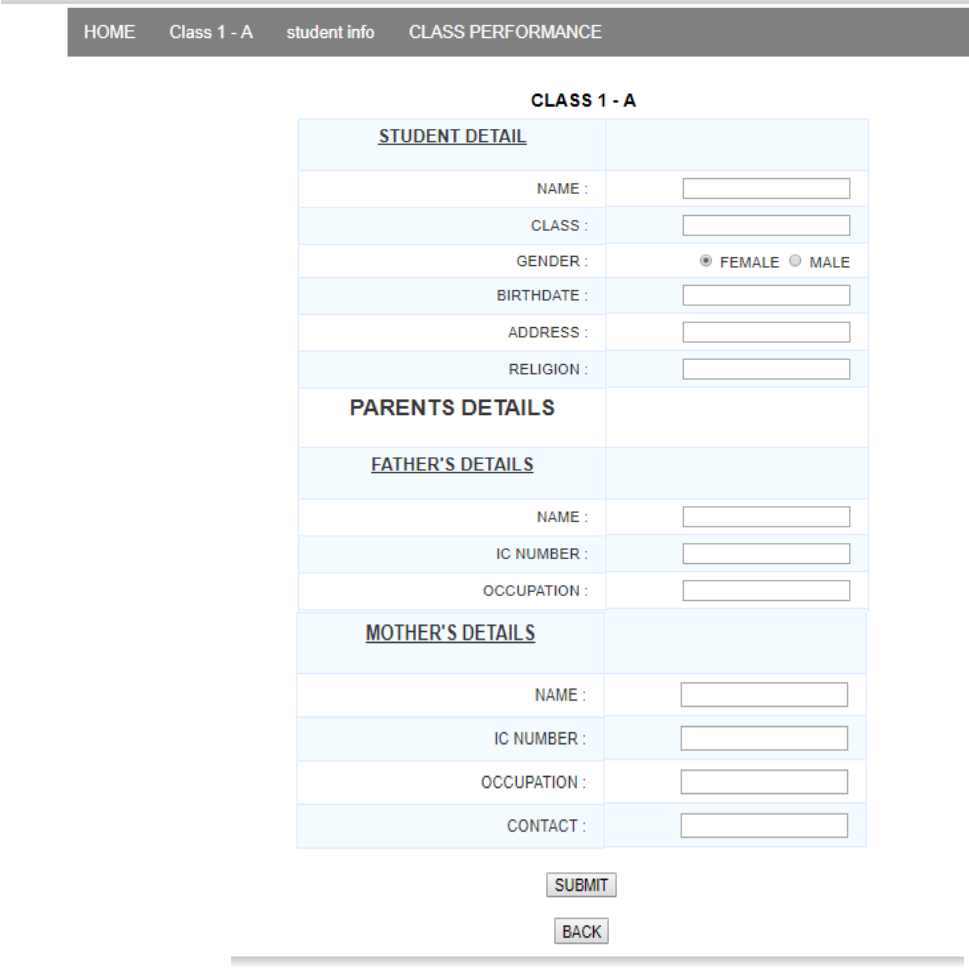



Figure 4.6: The student registration page

The user needs to insert all the data that need to be form just as shown in figure 4.6. The data then will be insert to the database by using the PHP code as shown in 4.7:

```
<!--InsertNewStudent-->

<?php

$dbhost = 'localhost';

$dbuser = 'root';

$dbpass = '';

mysql_connect($dbhost, $dbuser, $dbpass);

mysql_select_db("assasement_system");

extract( $_POST);

$sql = "INSERT INTO `student_info`(`id`, `student_name`, `student_class`, `s_gender`, `birthdate`, `address`, `religion`, `father_name`, `f_ic`, `f_occupation`, `m_name`, `m_ic`, `m_occupation`, `phone_number`) VALUES ('','$Sname','$class', '$gender','$birthdate','$address','$religion','$fname','$fIc','$foccupation','$mName','$mIc','$moccupation', '$phoneNum')";
```

Figure 4.7: InsertNewStudent.php

### 4.6.4 Marks Insertion and Edition

The user can insert the student marks exam or edit their marks. Before they can insert or edit the marks the users need to choose the class and also the exam term just as shown in figure 4.8.

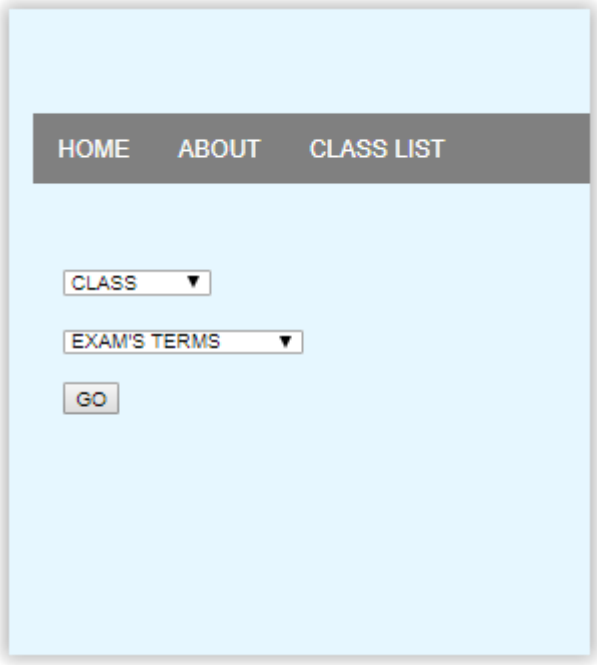



Figure 4.8: the Exam homepage

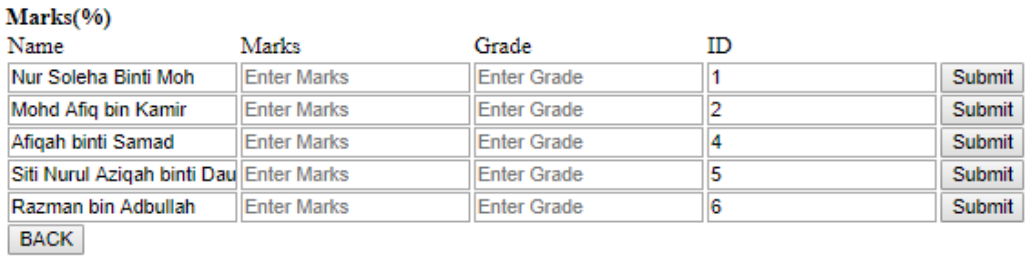



Figure 4.9: The edition of the marks and grade page

Figure 4.9 show the page where the user will insert the marks of the student based on their percentage and grade. Each input is based on student id so that the data would not be mistaken.

```
<?php

$dbhost = 'localhost';

$dbuser = 'root';

$dbpass = '';

mysql_connect($dbhost, $dbuser, $dbpass);

mysql_select_db("assasement_system");
```

Figure 4.10: The connection to database and the query of MySQL

Figure 4.10 show the source code of connecting to the database and also the query in the eng_sub based on the ‘class 1a’. because of that, the data that will be input will only go to the student in class 1a.

```
<?php

while ($row = mysql_fetch_array($records))

{                               $id =$row["id"];

                                $name =$row["student_name"];

                                $mark =$row["e_exam2"];

                                $grade =$row["e_grade2"];

                                echo '<form method="POST"  action="markC1E2.php">';

                                echo '<br/> name: <input type="text" name = "name" value=
'".$name."'> ';

                                echo ' Marks : <input type="text" placeholder="Enter Marks"
name="marks" value = "'.$mark."' required>';

                                echo ' Grade : <input type="text" placeholder="Enter Grade"
name="grade" value="'.$grade."'> ';
```

Figure 4.11: source code of markC1E2.php

Figure 4.11 show the source code where the data will be input by the user to transfer to the database. The system would loop based on the fetch array of the previous query. The users need to submit one per one to avoid confusion in the system. The input data then will be post at the same page as markC1E2.php by using if (isset()) function just as shown as figure 4.12.

```
if(isset($_POST["mrks"])){

$marks = $_POST["marks"];

$id = $_POST["id"];

$grade =$_POST["grade"];

$sql = "UPDATE eng_sub SET e_exam2='$marks', e_grade2='$grade' WHERE id = '$id' ";

if(mysql_query($sql)){

    echo "Record was updated successfully.";       header("refresh:0.5; url=markC1E2.php");

} else {

    echo "ERROR: Could not able to execute $sql. "

. mysqli_error($link);
```

Figure 4.12: marksC1E2 data post update to database

## 4.7 **Testing**

Test Case is one of the testing methods that usually use in testing a systems or project. The tester would test all the possibility function that had in the project. Then, they would determine if the test case is pass or fail. If the test is the same or similar to the expected result then it pass. But if the test is not the same as the expected result then it would be fail. The following bellow is the test case of the Online Assessment System:

Table 4.5: Login page

| **TEST CASE** | **TEST STEP** | **EXPECTED RESULT** | **ACTUAL RESULT** | **PASS/FAIL** |
|---|---|---|---|---|
| Check the login page | Go to the webpage<br><br>Insert username and password | User will be directed to the page based on their role | Directed to the page based on the role | Pass |

Table 4.5 shows that after the user input the username and password, user is directed to their page. For example, if the user is English Subject teacher then they will be directed to English teacher's page.

Table 4.6: Homepage

| **TEST CASE** | **TEST STEP** | **EXPECTED RESULT** | **ACTUAL RESULT** | **PASS/FAIL** |
|---|---|---|---|---|
| Check on the class info button | Login to webpage<br><br>Click the image of information | User will be directed to the classroom homepage | Directed to classroom page | Pass |
| Check on the subject button | Login to webpage<br><br>Click on the image of book | User will be directed to the subject homepage | Directed to subject page | Pass |

Table 4.6 shows the result of homepage functionality. Both of the buttons was directed to the assigned page. The class info button is directed to the classroom page while the subjected button is directed to the subject page.

Table 4.7: Classroom page

| TEST CASE | TEST STEP | EXPECTED RESULT | ACTUAL RESULT | PASS/FAIL |
|---|---|---|---|---|
| Check on the classroom button | Login to webpage<br><br>Click the image of information<br><br>Click on the class image | User will be directed to the classroom list page | Directed to the classroom list page | Pass |
| Check on the student info button | Login to webpage<br><br>Click the image of information<br><br>Click on the student info image | User will be directed to the student info page | Directed to the student info page | Pass |
| Check on the class result button | Login to webpage<br><br>Click the image of information<br><br>Click on the class result image | User will be directed to the class result page | Directed to the class result page | Pass |

Table 4.7 shows the result of the testing on the classroom page. All of the result passed. Each of the buttons is directed to assign page. The Classroom button directed to the classroom list page, the Student Info button is directed to the student info page while the Class Result button is directed to the class result page.

Table 4.8: Subject page

| TEST CASE | TEST STEP | EXPECTED RESULT | ACTUAL RESULT | PASS/FAIL |
|---|---|---|---|---|
| Check on the examination button | Login to webpage<br><br>Click on the image of book<br><br>Click on the examination image | User will be directed to the subject exam mark page | Directed to subject's exam marks page | Pass |
| Check on the class list button | Login to webpage<br><br>Click on the image of book<br><br>Click on the class list image | User will be directed to the class list page | Directed to class list page | Pass |
| Check on the assessment button | Login to webpage<br><br>Click on the image of book<br><br>Click on the assessment image link | User will be directed to the assessment page | There is no assessment link | Fail |

Table 4.8 shows the result of subject page. Two buttons successfully directed to assign page. For the examination button is directed to the subject's exam marks page while the Class list button will be direct to the Class list page. Meanwhile one of the tasks is unsuccessful because the assessment page is still not created.

Table 4.9: Examination page

| TEST CASE | TEST STEP | EXPECTED RESULT | ACTUAL RESULT | PASS/FAIL |
|---|---|---|---|---|
| Check on the drop button of class and exam's term | Login to webpage<br>Click on the image of book<br>Click on the examination image<br>Click on the drop down button | User can choose different class and exam's term | Both dropdown buttons that will direct to exam page is working. | Pass |
| Check on the **GO** button | Click on the Go button | User will be directed to the respectful page | Directed to exam page based on the class and exam's terms. | Pass |

Based on table 4.9 above, the result was all pass in the testing. The user need to choose between the class and exam's terms before directed to the next page. All the function is working fine.

Table 4.10 Exam page (e.g class 1a)

| TEST CASE | TEST STEP | EXPECTED RESULT | ACTUAL RESULT | PASS/FAIL |
|---|---|---|---|---|
| Check the list of the student. | Login to webpage<br>Click on the image of book<br>Click on the examination image<br>Click on the drop down button<br>Click on the Go button | The student list must from the class 1a | The student list from class 1A can be viewed. | Pass |
| Check on the **EDIT** button | Click on the Edit button | User will be directed to the edit mark exam page | Edit mark Exam is directed. | Pass |

Table 4.10 shows the result of exam page. After the user is directed to the exam page, the user can view the names from the Class and also their Marks and Grade Exam from the Exam's Terms. The user also can Edit the Marks of the Students.

Table 4.11: Marks exam edit page

| **TEST CASE** | **TEST STEP** | **EXPECTED RESULT** | **ACTUAL RESULT** | **PASS/FAIL** |
|---|---|---|---|---|
| Check Marks and Grade input text | Login to webpage<br><br>Click on the image of book<br><br>Click on the examination image<br><br>Click on the drop down button<br><br>Click on the Go button<br><br>Click on the Edit button<br><br>Input text in textbox | The user can input text into the textbox | The textbox can be input value. | Pass |
| Check on the **SUBMIT** button | Click on the Submit button | The data will be send to database | The data is send to database. | Pass |
| Check on the **BACK** button | Click on the back button | Go to the previous page | Previous page was directed. | Pass |

Table 4.11 shows that all the function is working as expected. The textbox can input the value and the data will be transfer to the database. The user also can go to the previous page when click on the Back button.

Table 4.12: Class 1a page

| TEST CASE | TEST STEP | EXPECTED RESULT | ACTUAL RESULT | PASS/FAIL |
|---|---|---|---|---|
| Check the list of the student | Login to webpage<br><br>Click the image of information<br><br>Click on the class image | The student must all from class 1A | All of the student from class 1A | Pass |
| Check on the **VIEW** button | Click on the view button | The user can view student information | Student information can be view | Pass |
| Check on the **DELETE** button | Click on the delete button | The user can delete the student data | The student data is deleted | Pass |
| Check on the **ADD NEW STUDENT** button | Click on the add new student button | The user will be directed to the student registration page | Directed to the student registration page | Pass |

Based on table 4.12, all of the testing has pass for the evaluation. The student list was as expected result where the list must be from the respective class from the teacher that was assigned to it. The buttons also functionally work without any error.

Table 4.13: Student registration page

| TEST CASE | TEST STEP | EXPECTED RESULT | ACTUAL RESULT | PASS/FAIL |
|---|---|---|---|---|
| Check the textbox | Login to webpage<br><br>Click the image of information<br><br>Click on the class image<br><br>Click on the add new student button | The user can input data into the textbox | The text box can input the value | Pass |

| | | | | |
|---|---|---|---|---|
| Check on the radio button of gender | Click on the radio button | The user can choose either male or female | Only one can be choose | Pass |
| Check on the **SUBMIT** button | Click on the submit button | The user can submit the input data | The data is send | Pass |
| Check on the **BACK** button | Click on the back button | The user will be directed to the previous page | Directed to the previous page | Pass |

Table 4.13 shows the testing result that all of the function has pass with the same actual result and expected result. The checkbox and radio button is functioned without any casualty. The buttons also do not have any error.

Table 4.14: Class result page

| **TEST CASE** | **TEST STEP** | **EXPECTED RESULT** | **ACTUAL RESULT** | **PASS/FAIL** |
|---|---|---|---|---|
| Check the student list | Login to webpage<br><br>Click the image of information<br><br>Click on class result image | The student list must be based on the teacher that login | The list student based on class is viewed | Pass |
| Check on the **VIEW** button | Click on the view button | The user can view the student result | The student result can be viewed | Pass |

Lastly based on table 4.14, the student list was based on the class and has the same result as the expected result. The view button also work without any error. The homeroom teacher can only view the student's exam result. That all the testing that has been conducted in this project.

# CHAPTER 5

# CONCLUSION

## 5.1 Introduction

In this chapter, it will discuss about the effectiveness of functionally of Online Assessment System. The system can view the student personal information and their Exam's evaluation throughout the year. The teacher (user) can also insert new Student without the help of administration. The teacher can input and edit the exam marks of student when necessity. They can also view the student progress of the exams grade.

## 5.2 Research Constrain

There is a few constrain throughout the project. One of the constraint is lack of understanding about data. Because of that, most of the time is to think about how the database work and what it need for the project. The second is lack of understanding the requirement of the project. Because of the lack of requirement, the webpage became simple and not had much interest that can attract user deeply.

## 5.3 **Future Work**

There is several enhancements can be made by continuing this project that can improve more of the system. One of the enhancements is by adding a graphics such as line chart or bar chart for the evaluation marks of the student. With that, the user will know easily the performance of student in exam.

Furthermore, with more advance software, the design of the Online Assessment System can be improve greatly. For example, improving the design by using Bootstrap and the new version of XML. There is a lot ways to improve this project making it more suitable for primary school and also making the teacher to create their own activity inside the system.

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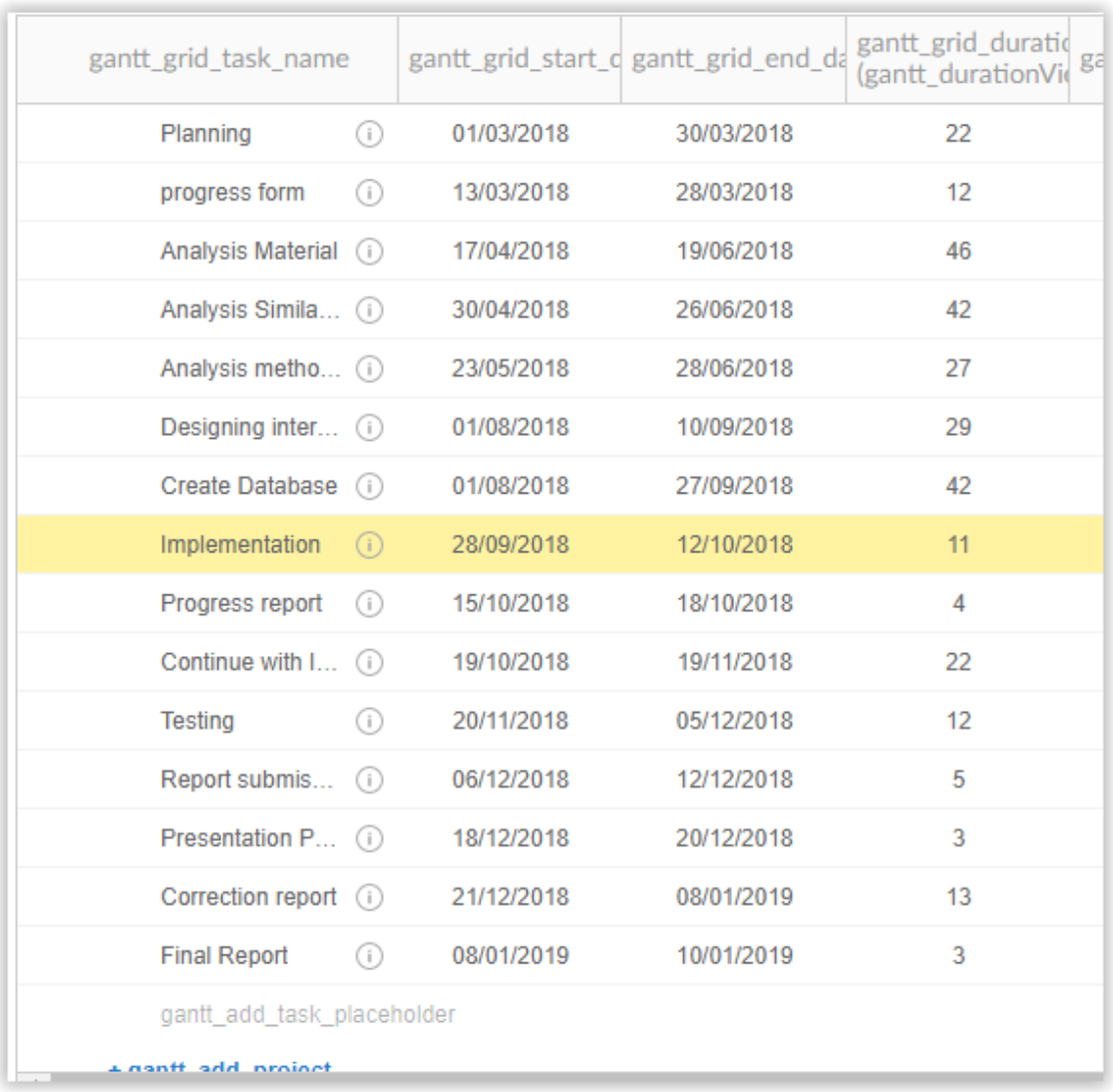
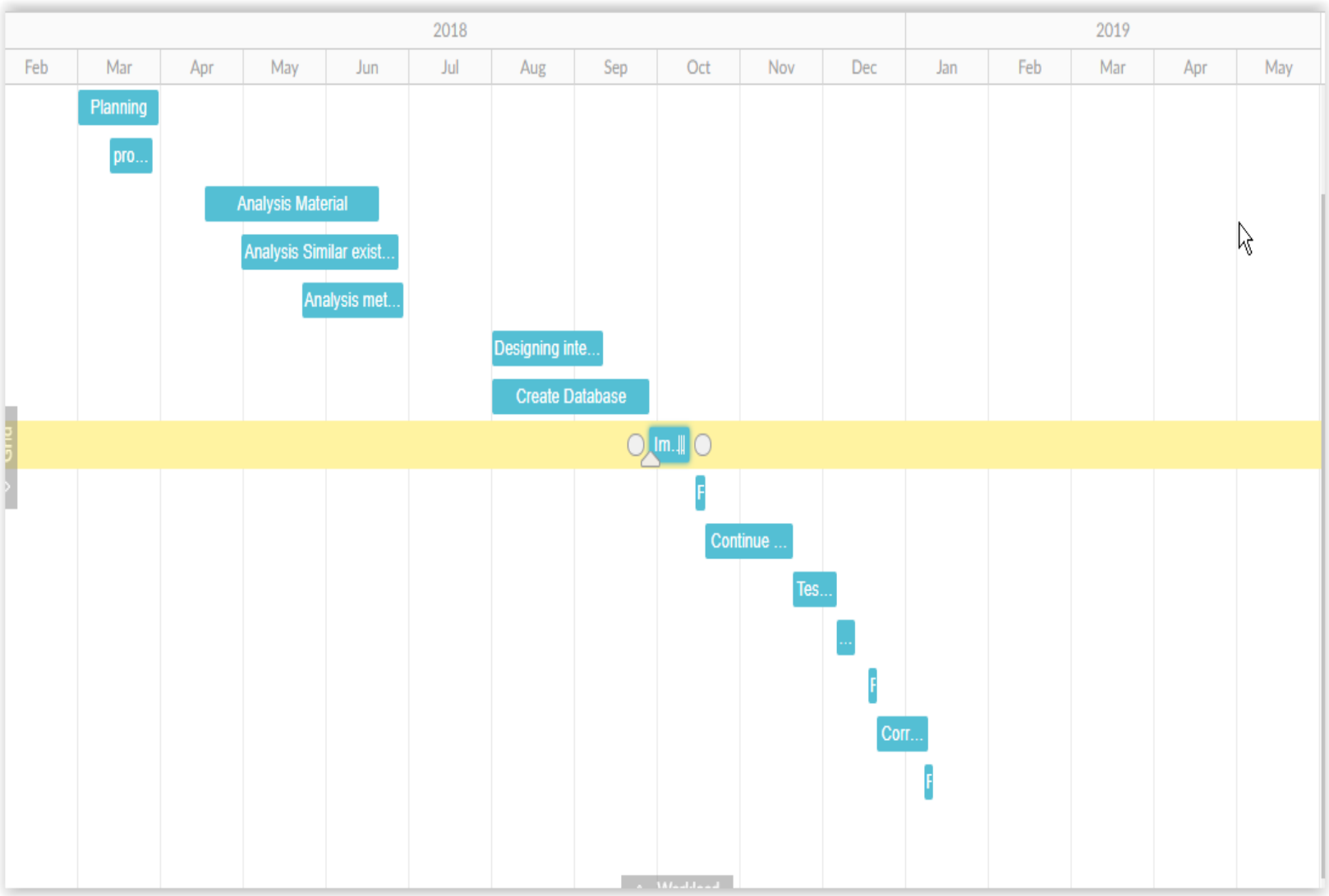
**APPENDIX A**
**GANTT CHART**



| gantt_grid_task_name | gantt_grid_start_c | gantt_grid_end_da | gantt_grid_duratic (gantt_durationVi | ga |
|---|---|---|---|---|
| Planning | 01/03/2018 | 30/03/2018 | 22 | |
| progress form | 13/03/2018 | 28/03/2018 | 12 | |
| Analysis Material | 17/04/2018 | 19/06/2018 | 46 | |
| Analysis Simila... | 30/04/2018 | 26/06/2018 | 42 | |
| Analysis metho... | 23/05/2018 | 28/06/2018 | 27 | |
| Designing inter... | 01/08/2018 | 10/09/2018 | 29 | |
| Create Database | 01/08/2018 | 27/09/2018 | 42 | |
| Implementation | 28/09/2018 | 12/10/2018 | 11 | |
| Progress report | 15/10/2018 | 18/10/2018 | 4 | |
| Continue with I... | 19/10/2018 | 19/11/2018 | 22 | |
| Testing | 20/11/2018 | 05/12/2018 | 12 | |
| Report submis... | 06/12/2018 | 12/12/2018 | 5 | |
| Presentation P... | 18/12/2018 | 20/12/2018 | 3 | |
| Correction report | 21/12/2018 | 08/01/2019 | 13 | |
| Final Report | 08/01/2019 | 10/01/2019 | 3 | |
| gantt_add_task_placeholder | | | | |
| + gantt_add_project | | | | |


2018
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Analysis Material
Analysis Similar exist...
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Designing inte...
Create Database
Im...
Continue ...
Tes...
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