

ONLINE QUIZ SYSTEM

ROSHIDAYU BINTI IBRAHIM

**BACHELOR OF COMPUTER SCIENCE
(SOFTWARE DEVELOPMENT) WITH HONOURS
UNIVERSITI SULTAN ZAINAL ABIDIN**

2018

ONLINE QUIZ SYSTEM

ROSHIDAYU BINTI IBRAHIM

**BACHELOR OF COMPUTER SCIENCE (SOFTWARE DEVELOPMENT)
WITH HONOURS**

**FACULTY INFORMATICS AND COMPUTING
UNIVERSITI SULTAN ZAINAL ABIDIN**

2018

DECLARATION

I hereby declare that this report is based on my original work except for quotations and citations, which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at Universiti Sultan Zainal Abidin or other institutions.

Name : Roshidayu Binti Ibrahim

Date :

CONFIRMATION

This project report entitle Online Quiz System was prepared and summitted by Roshidayu Binti Ibrahim (Matric Number: BTAL15039981) and has been found satisfactory in terms of scope, quality and presentation as a part of fulfilment of the requirement for the Bachelor of Computer Science (Software Development) With Honours in Universiti Sultan Zainal Abidin (UniSZA).

Name : Dr. Siti Sabariah Binti Abas

Date :

DEDICATION

First of all, I would like to express my gratitude to Allah The Almighty for His grace and mercy, which give me the opportunity to complete my final year project. I sincerely thanks to my supervisor, Dr. Siti Sabariah Binti Abas for the continuous support, advice and tutoring for this project, for believing in me and the motivations he gave throughout this project.

I am also would like to thanks to all of presentation panels who give valuable feedback and useful advices during the presentation which really helpful in completing my project.

My thanks and appreciation goes to my beloved friends who always help me during the hardship in this project while completing theirs. Because of them, I have got a lot of ideas and courage to complete my system. Throughout my life there are persons who had always been there during those difficult and trying times. I would like to dedicate this thesis and everything I do to my parents who always surrounded me with strong and supportive momentum even before the project started to the end of the project submission. Without them, I would not be able to reach at this level and finished my project presentation.

ABSTRACT

Online Quiz System is a web-based quiz system for accessing students. It is a system by which students can sit in a quiz which need no pencil and paper. Nowadays, students take quiz manually .Lecturers need spend more time on grading. Other than that, the quiz paper maybe will be missing. Students need to wait for lecturers finish grading to get their result. Therefore, this system will help lecturers save their time because of automated marking. Lecturers can set up a quiz which is it will auto-grade itself. Students can answer the quiz from any location and get fast result. This online quiz system is using rule-based algorithm to interpret information in a useful way. Rule-based algorithm used in this system is short answer based on keyword.

ABSTRAK

Sistem kuiz dalam talian adalah sebuah sistem kuiz berasaskan web untuk mengakses pelajar. Ia adalah sebuah sistem di mana pelajar boleh menduduki kuiz yang tidak memerlukan pensel dan kertas. Pada masa kini, pelajar mengambil kuiz secara manual. Pensyarah memerlukan lebih banyak masa untuk menggred. Selain itu, kertas kuiz mungkin akan hilang. Pelajar perlu menunggu pensyarah selesai menggred untuk mendapatkan keputusan mereka. Oleh itu, sistem ini akan membantu pensyarah menjimatkan masa mereka kerana tandaan automatik. Pensyarah boleh membina kuiz yang mana ia akan auto-gred sendiri. Pelajar boleh menjawab kuiz dari mana-mana lokasi dan mendapatkan keputusan dengan cepat. Sistem kuiz dalam talian ini menggunakan algoritma berasaskan peraturan untuk menafsirkan maklumat dengan cara yang berguna. Algoritma berasaskan peraturan yang digunakan dalam sistem ini adalah jawapan pendek berdasarkan kata kunci.

CONTENTS

	PAGE
DECLARATION	i
CONFIRMATION	ii
DEDICATION	iii
ABSTRACT	iv
ABSTRAK	v
CONTENTS	vi
LIST OF TABLES	x
LIST OF FIGURES	xii
LIST OF ABBREVIATIONS	xiii
LIST OF APPENDICES	xiv
CHAPTER I INTRODUCTION	
1.1 Introduction	1
1.2 Problem statement	3
1.3 Objectives	3
1.4 Scopes	4
1.5 Limitation of Work	5
1.6 Expected Outcome	5
1.7 Project Planning	6
1.8 Report Structure	6
1.9 Chapter Summary	7

CHAPTER II LITERATURE REVIEW

2.1	Introduction	8
2.2	What is Rule-Based System?	9
2.3	Comparison existing systems	10
2.4	Chapter Summary	12

CHAPTER III METHODOLOGY

3.1	Introduction	13
3.2	Requirement Analysis	14
	3.2.1 Justification Selection	14
	3.2.2 Development Design	15
3.3	Methodology phase	15
	3.3.1 Initial Planning Phase	16
	3.3.2 Planning Phase	17
	3.3.3 Requirement Phase	17
	3.3.4 Analysis and Design Phase	18
	3.3.5 Implementation and Testing Phase	20
	3.3.6 Evaluation Phase	20
	3.3.7 Deployment Phase	21
3.4	System Requirement	22
	3.4.1 Software Requirement	22
	3.4.2 Hardware Requirement	23

3.5	System Design	23
	3.5.1 Framework Design	24
	3.5.2 Process Model	25
	3.5.2.1 Context Diagram(CD)	25
	3.5.2.2 Data Flow Diagram (DFD Level 0)	27
	3.5.2.3 Data Flow Diagram (DFD Level 1)	33
	3.5.2.4 Data Flow Diagram (DFD Level 1)	33
	3.5.2.5 Data Flow Diagram (DFD Level 1)	34
	3.5.2.6 Data Flow Diagram (DFD Level 1)	34
	3.5.2.7 Data Flow Diagram (DFD Level 1)	35
	3.5.2.8 Data Flow Diagram (DFD Level 1)	35
	3.5.2.9 Data Flow Diagram (DFD Level 1)	36
	3.5.2.10 Data Flow Diagram (DFD Level 1)	36
	3.5.3 Data Model	37
	3.5.3.1 Entity Relationship Diagram	37
	3.5.4 Algorithm	39
	3.5.5 Data Dictionary	40
3.6	Chapter Summary	49

CHAPTER IV IMPLEMENTATION AND RESULT

4.1	Introduction	50
4.2	Interface Design/Menu/Forms	51
	4.2.1 Interface Design (Web Based System)	51
4.3	Testing Approach	56
4.4	Chapter Summary	59

CHAPTER V CONCLUSION

5.1	Introduction	60
5.2	Project Contribution	60
5.3	Project Constraint	61
5.4	Future Work	61
5.5	Conclusion	62

REFERENCES	63
-------------------	----

APPENDIX	65
-----------------	----

LIST OF TABLES

TABLE	TITLE	PAGE
2.1	Table Comparison Journal Between Existing Systems.	10
3.1	Table of Software Requirement	22
3.2	Table of Hardware Requirement	23
3.3	Table Shows Data Dictionary for Overall Data Table	41
3.4	Table Shows Data Dictionary for Table Admin	41
3.5	Table Shows Data Dictionary for Table Answer	42
3.6	Table Shows Data Dictionary for Table Class	42
3.7	Table Shows Data Dictionary for Table Class_Quiz	43
3.8	Table Shows Data Dictionary for Table Class_Subject_Overview	43
3.9	Table Shows Data Dictionary for Table Faculty	44
3.10	Table Shows Data Dictionary for Table Question_Type	44
3.11	Table Shows Data Dictionary for Table Quiz	45
3.12	Table Shows Data Dictionary for Table Quiz_Question	45
3.13	Table Shows Data Dictionary for Table Staff	46
3.14	Table Shows Data Dictionary for Table Staff_Class	46
3.15	Table Shows Data Dictionary for Table Staff_Class_Student	47
3.16	Table Shows Data Dictionary for Table Student	47
3.17	Table Shows Data Dictionary for Table Student_Class_Quiz	48
3.18	Table Shows Data Dictionary for Table Student	48

4.1	Table A Test Case 1 (Login Page Validation Success)	56
4.2	Table B Test Case 2 (Login Page Validation Success)	57
4.3	Table C Test Case 3 (Change Password Success)	57
4.4	Table D Test Case 4 (Change Password Failed)	58
4.5	Table E Test Case 5 (Change Password Failed)	59

LIST OF FIGURES

FIGURE	TITLE	PAGE
3.1	Figure Iterative Model	15
3.2	Figure Framework	24
3.3	Figure Context Diagram	25
3.4	Figure Data Flow Diagram Level 0	27
3.5	Figure Data Flow Diagram Level 1	33
3.6	Figure Data Flow Diagram Level 1	33
3.7	Figure Data Flow Diagram Level 1	34
3.8	Figure Data Flow Diagram Level 1	34
3.9	Figure Data Flow Diagram Level 1	35
3.10	Figure Data Flow Diagram Level 1	35
3.11	Figure Data Flow Diagram Level 1	36
3.12	Figure Data Flow Diagram Level 1	36
3.13	Figure Shows the Entity Relationship Diagram	38
3.14	Figure Shows the Algorithm	39
4.1	Figure Login Module For Lecturer and Student	51
4.2	Figure Login Module For Admin	52
4.3	Figure Add Question	53
4.4	Figure Question List	54
4.5	Figure Add New Lecturer Form	55

LIST OF ABBREVIATIONS / TERMS / SYMBOLS

CD	Context Diagram
DFD	Data Flow Diagram
ERD	Entity Relationship Diagram
FYP	Final Year Project
OQS	Online Quiz System
SDLC	Software Development Life Cycle
PHP	Hypertext Pre-Processor
HTML	Hyper Text Markup Language
UniSZA	Universiti Sultan Zainal Abidin

LIST OF APPENDICES

APPENDIX	TITLE	PAGE
A	Gantt Chart	65
B	Main Coding	68

CHAPTER 1

INTRODUCTION

1.1 Introduction

Nowadays, a lot of universities in our country and each of the university consist of student up to two thousand students. In order to handle a large amount of student may cause a lot of problems especially in management of the quiz manually. Currently, almost all universities in our country using the manual procedure to setup quiz for students. The manual procedure means in every quiz, students must attend university to sit in the quiz at a specific time. After that, lecturers will collect quiz paper. Sometimes, there are students does not attend university for a reason and lecturers assumed the students absent for that quiz. This scenario is unfair for student that missed the quiz. So the suitable solution for this problem is by design a system that all student can sit in a quiz from any location.

Online Quiz System (OQS), is a web-based quiz system; a system that can be used by lecturers to evaluate students effectively, efficiently and perfectly.

The purpose of Online Quiz System is to save lecturer's time since the answers are automatically marked.

Online Quiz System is developed by using a rule-based algorithm. Rule-based algorithm used in this system is short answer based on keyword.

1.2 Problem Statement

The first problem is lecturers need spend more time on grading. This is because lecturer need to check student paper one by one.

The second problem is difficult for students to answer quiz from any location. Quiz give an impact in coursework. Sometime some students have their own reason cannot take quiz on time.

In reality, lecturers and students were really important and they play a big role in setup the quiz. Besides, lecturers can test their students' knowledge by grading. Here, the reasons to develop a web-based quiz system.

1.3 Objectives

The objectives of this project have been defined as we can know whether the goals of the system have been achieved. There are the following objectives that determine the success of this system:

- i) To develop a system that enables the student to answer a quiz online.
- ii) To implement a system that enables the student to answer a quiz from any location.
- iii) To test the system whether it can help the lecturers in conducting a quiz.

1.4 Scopes

The scope of the system basically means everything that will be covered in the project and who involves in it. It defines clearly the extent of content that will be covered by the whole system. The scope of the study has to be defined at a preliminary stage and that is very important.

1.4.1 Admin

- i) Admin can login in the system.
- ii) Admin can manage lecturer.
- iii) Admin can manage student.
- iv) Admin can manage subject.
- v) Admin can manage class.
- vi) Admin can manage faculty.

1.4.2 Lecturers in UniSZA

- i) Lecturers can login in the system.
- ii) Lecturers can make quiz in the system.
- iii) Students can view personal information and also update their information.

1.4.3 Students in UniSZA.

- i) Students can login in the system.
- ii) Students can answer quiz in the system.
- iii) Students can view personal information and also update their information.

1.5 Limitation of Work

The system will focus on quiz such as multiple choice question, true false and short answer only. The system can be used by the UniSZA's lecturer and student only. This system is developing on web based so that it only can be open using a web browser not in android or iOS application.

1.6 Expected Outcome

This system is expected to be implemented in web-based. In addition, this system more secure because of no chances of leakage of question paper as it only depend on the administrator. Additionally, this system also less time consuming and is more efficient. This is because analysis will be very easy in proposed system as it is automated. Result will be very precise and accurate and will be declared in very short span of time because calculation and evaluations are done by the simulator itself.

1.7 Project Planning

Project Schedule is important document to be considered before the project start. It consists of the start and finish of a project. It as a guideline to completed and finished project on time has given. This Online Quiz System takes four months to develop after passing through several major phases in the development of as system.

Refer Appendix A for Gantt Chart.

1.8 Report Structure

The first chapter of this report is the introduction to the projects which includes introduction, problem statement, objective, scope, limitation of works, expected outcome and planning for this project. The overall logic of the system is stated here. The second chapter is literature review. This chapter provide better understanding based on the explanation of related research done in the related field. Third chapter describe the methodology used in this system. It discuss project methodology and requirement of software and hardware that guide the system development, it deals with project design and modelling which the core part in the development process. The data flow diagram and the context diagram for this system is shown. Entity relationship diagram is also included to provide better understanding on database design. Fourth chapter will explain the function and flow of the system with interfaces provided, and a few tests are done. In the last chapter which is conclusion, the result has been discussed, concluded and summarised.

1.9 Chapter Summary

This chapter basically deliver the early stages about this project development. It explains more about the initial project development process.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

The purpose of this chapter is to present selected literature review, which is very important for the research. This chapter also describes and explains of the literature review carried out on the system that will be used as references in developing this system. Previous research or existing system will also be discussed in this section. Literature review aim to review the critical points of the current knowledge on a particular topic. Therefore, the purpose of the literature review is to find, read and analyse the literature or any works or studies related to this system. It is important to well understand about all information to be considered and related before developing this system. For this project, some research has been done to understand about Quiz and technique that had been choosing to implement the system.

2.2 What is Rule-Based System?

Rule-based systems or production-rules systems are computer systems that use rules to provide recommendations or diagnosis, or to solve a particular problem, “[1].”

A rule-based system consists of three components:

- i) A database of rules. (Knowledge base)
- ii) A database of facts. (Inputs to the system)
- iii) An interpreter, or inference engine.

(The parts of the system that controls the process of driving conclusions).

2.3 Comparison existing systems

Table 2.1: Shows the comparison between existing systems.

Author/ Year	Title	Description (Advantage and Disadvantage)	Methods
Umed H. Suthar, Prof. Abdul Rais , Ashish Upadhyay, Prabhakar Upadhya (2015) [2]	Online Examination Management System Using Genetic Algorithm	Online Examination Management System (OEMS) is project or web-based application which is used to control the tasks which occur during every examinations period. This project is developed in PHP. This php project can save a lot of time for examination department by providing Functionalities to their manual tasks like Exam Time Table Generation. However, GA are very slow. It cannot always find the exact solution but GA always finds the best solution.	Genetic Algorithm (GA)
Sk. Imran Hossain Shoyeb (2015) [3]	Android based Online Quiz Application	This project main purpose is to develop Online Quiz system named ' LETS QUIZ '. The application (LETS QUIZ) will provide online based quiz with multiple choice question (MCQ). This quiz application will support android base operating system. However, android device is not considered safe as compared to other applications. It is easy to target any android phone_and every day millions of attempt are done on Android phone. Hackers keep on trying to steal personal information.	Android Based

Hongmei Nie (2014) [4]	Design and Development of the Online Examination System Based on B/S Structure	Hongmei Nie Math, Physics and Information Engineering College Online examination is the crucial parts among online education. It is efficient and fast enough and reduces the large amount of material resources. Examination system is developed based on web. This paper describes the principle of the designed system which presents the main functions of the system, analyses the algorithm of auto-generating test paper, and discusses the security of the system.	Random, heuristic and genetic algorithm
Burcu Yılmaz Kaya, Gökhan Kaya, Metin Dağdeviren (2014) [5]	A Sample Application of Web Based Examination System for Distance and Formal Education	System designers' target is to prevent the cheating, while making the system to constitute different tests according to the student number. However, the only thing that we can criticize the presented web based system is that, it is not able to test the expressive capabilities of the students in verbal courses. This situation is a common and ventured drawback for test examination evaluation method.	Web Based System
Ian O'Neill (2018) [6]	Using Assessment Software to Create a Dialogue-Based Tutorial	Dialogue Management Rules 1. For a student who can solve the problem correctly—choosing all the correct answers and none of the incorrect ones—the system provides appropriate words of congratulations and the tutorial concludes.	Rule-Based System

2.4 Chapter Summary

This chapter discusses literature review that had been reviewed during feasibility studies. The literature review helps developer to discover the problem of previous research or system which needs to be improves and overcome in this system development. Furthermore, it also helps to gain understanding about the system that undergo the development process.

As a conclusion, Rule-Based algorithm is the most suitable method to use in developing the system.

CHAPTER 3

METHODOLOGY

3.1 Introduction

This chapter explains details of methodology being used in software development. The project methodology is important because it helps to organize investigation in a scientific way to overcome problems, structure, plan, and control the process of developing an information system. This chapter will explain about rule-based system. The system will use Iterative Model development as a framework methodology. After system has been completely developed, it should be tested to make sure it achieves the objectives of the project.

3.2 Requirement Analysis

For achieving the objective of the system, software development methodology needs to be chosen wisely for making a better planning on the flow of the system development. There are various types of model in Software Development Life Cycle (SDLC) which are Waterfall Model, V-Shaped Model, Evolutionary Prototyping Model, Spiral Model, Iterative Model and Agile Model. One of the type is an Iterative Model.

3.2.1 Justification Selection

The iterative model is a particular implementation of a software development life cycle (SDLC) that focuses on an initial, simplified implementation, which then progressively gains more complexity and a broader feature set until the final system is complete. When discussing the iterative method, the concept of incremental development will also often be used liberally and interchangeably, which describes the incremental alterations made during the design and implementation of each new iteration, “[7].”

3.2.2 Development Design

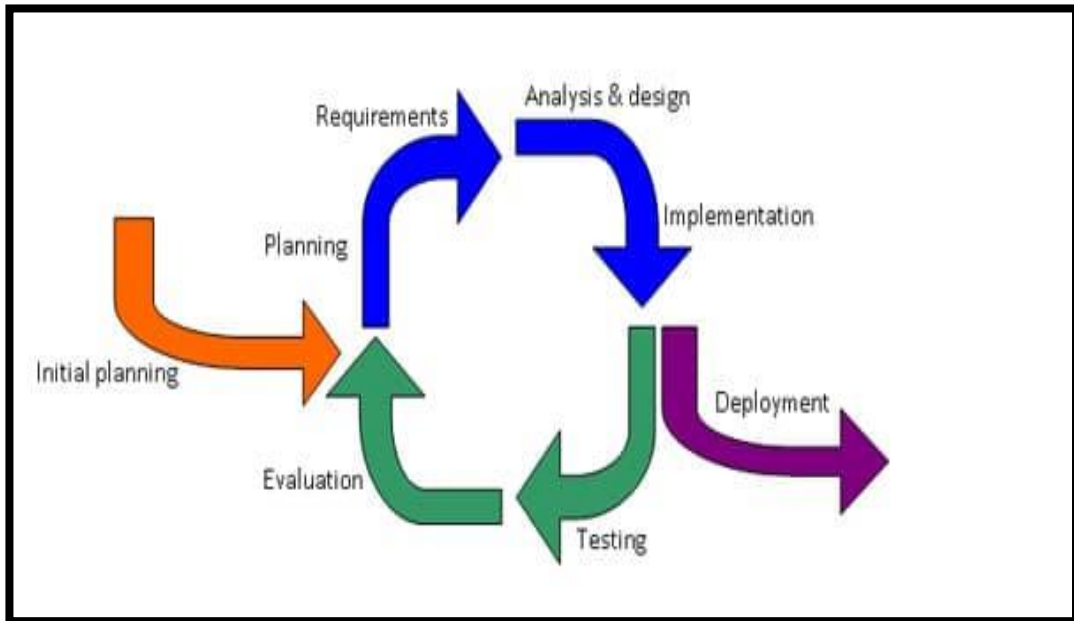


Figure 3.1: Iterative Model

3.3 Methodology Phase

Figure above shows the methodology that will be used in this research. The iterative model is best thought of as a cyclical process. After an initial planning phase, a small handful of stages are repeated over and over, with each completion of the cycle incrementally improving and iterating on the software. Enhancements can quickly be recognized and implemented throughout each iteration, allowing the next iteration to be at least marginally better than the last. Consider an iterative life cycle model which consists of repeating the following four phases in sequence. The six stages involved in the iterative model are as follows:

1. Initial Planning Phase
2. Planning Phase
3. Requirement Phase
4. Analysis and Design Phase
5. Implementation and Testing Phase
6. Evaluation Phase
7. Deployment Phase

3.3.1 Initial Planning Phase

In this phase, all the activities are plan according to a given period to complete the system. This phase begins with the brainstorming session with the supervisor to come up with the idea and the title for the project. From the brainstorming session with the supervisor, the title for this project is decided which is Online Quiz System (OQS) and will implement the rule-based algorithm. This system will develop as a web based system by using PHP and MySQL. Next, the journal about quiz have been selected to be a guideline during development. Based on observation in a journal and existing system, it makes this system is much needed to lecturer where it can help the lecturer to manage quiz for their student easily.

3.3.2 Planning Phase

After the initial planning, the planning phase has taken place. In planning, the problem statements have been defined through several study and observation. The main discussion of a problem can be defined based on lecturer need spend more time on grading. To design the system for lecturer to manage quiz easily. Next, the scope also was defined for lecturer to setup quiz for student. Student can answer quiz in the system. The time planning to develop a system is only in three months where the implementation will do in one months while the report and documentation will do in one month.

3.3.3 Requirement Phase

During this phase, existing systems are analysed and all the requirements that are needed to develop the new system are identified. In this phase, the information regarding Online Quiz System (OQS) either in the form of journal, articles or research papers are gathered and studied. The finding is summarized and analysed to find the requirement of the system as a functional and non-functional requirement. The requirement for Online Quiz System (OQS) are as follows: -

- i) The way to implement rule-based algorithm in OQS.
- ii) All journal about rule-based make as references.

3.3.4 Analysis and Design Phase

In this phase, Context Diagram (CD), Data Flow Diagram (DFD) and Entity Relationship Diagram (ERD) are made based on the system being developed. The goal is to design a system based on the user requirement. Firstly, we have to identify entities, relationships and attributes in Online Quiz System. Then, we can model the data. The purpose of data modelling is to help us in understanding the data and to manage data as resource. We use MySQL as a database to store data and bootstrap to design interface of the system. Then, system is created and the development of the prototype based on the functionalities that will be built such as add quiz, update quiz and delete quiz. The data or requirement obtained during the requirement phase is transformed into a design. The requirement obtained has been figured out at this phase which has been identified has the most relevant reason:

- i) There are less information about quiz via online.
- ii) The information about quiz and algorithm not in the one source.

So, based on the requirement gathered. A data and process modelling has been designed. Data for quiz and result based on system. Then the process modelling is divided into three modules which is admin process, lecturer process and student process.

Admin

- i) Admin can login in the system.
- ii) Admin can manage lecturer.
- iii) Admin can manage student.
- iv) Admin can manage subject.
- v) Admin can manage class.
- vi) Admin can manage faculty.

Lecturers in UniSZA

- i) Lecturers can login in the system.
- ii) Lecturers can make quiz in the system.
- iii) Students can view personal information and also update their information.

Students in UniSZA.

- i) Students can login in the system.
- ii) Students can answer quiz in the system.
- iii) Students can view personal information and also update their information.

3.3.5 Implementation and Testing Phase

This phase is important because all the coding is coded. Online Quiz System was built by using PHP, JavaScript, and MySQL. Firstly, admin module was developed because admin module is very important where only admin can manage the data of the system. Then finally, developed lecturer module where lecturer can conduct quiz. While, student module where a student can answer the quiz. After completing the admin, lecturer and student module, the module was tested to ensure the system is working fully and meets the user requirement. For admin module, login process was tested to ensure each condition that were processed by a system is correct.

3.3.6 Evaluation Phase

In the evaluation phase, Online Quiz System will be evaluated to test whether the objective system is achieved. Firstly, will evaluate the system for admin to manage lecturer and student. Second, will evaluate the system for lecturer to setup quiz for student. Next, to evaluate develop Online Quiz System using Rule-Based algorithm which is short answer based on keyword. Then evaluate whether the system is functionality and beneficially to student.

3.3.7 Deployment Phase

Once the evaluation is done, the Online Quiz System is deployed in the environment so that the targeted lecturer and student can use the system. The system will be released to end user to implement whether the application correct functioning or not.

3.4 System Requirement

In the making of this project, software and hardware tools are very important and essential. The system cannot be developed successfully without these software and hardware requirements. In order to complete the project, the facilities from hardware and software must be used. The consumption of these facilities depend on what already provided or what they have been used before. These are details of the requirement for Online Quiz System.

3.4.1 Software Requirement

Table 3.1: Show the software used for Online Quiz System.

Software	Description
Microsoft Office 2013 Microsoft Word 2013 Microsoft Power Point 2013	Tool for viewing, editing, and creating documents, presentations
E-Draw Max	Draw CD , DFD
Notepad++	Tool for execute coding.
XAMPP Server	Create connection between Apache and MySQL in local host server
Web Browser Google Chrome	Find source and article on literature review, coding, templates, run the system
Dropbox	Backup Data

3.4.2 Hardware Requirement

Table 3.2: Show the hardware used for Online Quiz System.

Hardware	Description
Laptop: Lenovo ideapad 310 Intel Core i5 DDR 4GB	Develop system, create, edit, view documents.
Canon Pixma E560	Print documents
Pen Drive 8GB	Backup Data

3.5 System Design

The framework and design for Online Quiz System such as framework, context diagram (CD), data flow diagram (DFD) level 0, level 1 and entity relationship diagram (ERD) are explained in detailed. Data modelling is required to facilitate the interaction between system designer, programmer and end-user. Making an early modelling can help to identify the needs, problem and possible solutions during the project.

All design in data modelling is focused because this data model will determine on how the flow of the system. But the more important is CD because it will show which entities that interact with the system.

3.5.1 Framework Design

A framework is a real or conceptual structure intended to serve as a support or guide for the building of something that expands the structure into something useful. There is element that involve in this framework:

- i) The human icon describes the ‘users’ involved in the system.
- ii) Blue box describes the ‘processes’ involved in the system.
- iii) Pink boxes describe the main system involved in this system.
- iv) The database icon depicts where we store all the data associated with this system.

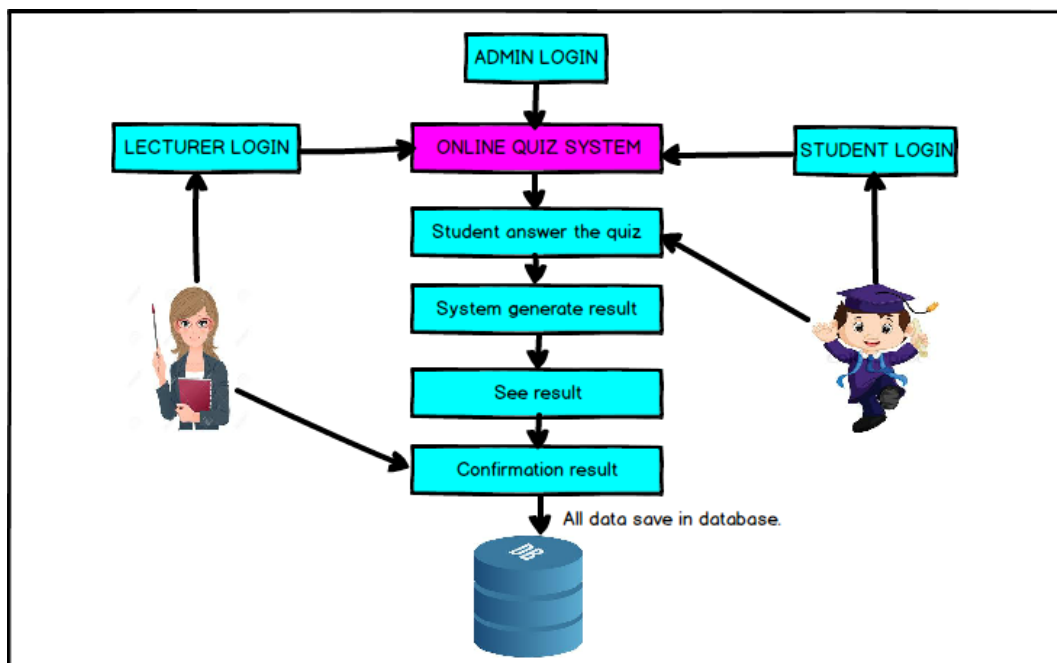


Figure 3.2: Shows the framework used in this project.

3.5.2 Process Model

Process models are processes of the same nature that are classified together into a model. One possible use of a process model is to prescribe how things must/should/could be done in contrast to the process itself which is really what happens. A process model is roughly an anticipation of what the process will look like. What the process shall be will be determined during actual system development.

3.5.2.1 Context Diagram

The Context Diagram shows the system under consideration as a single high-level process and then shows the relationship that the system has with other external entities (systems, organizational groups, external data stores).

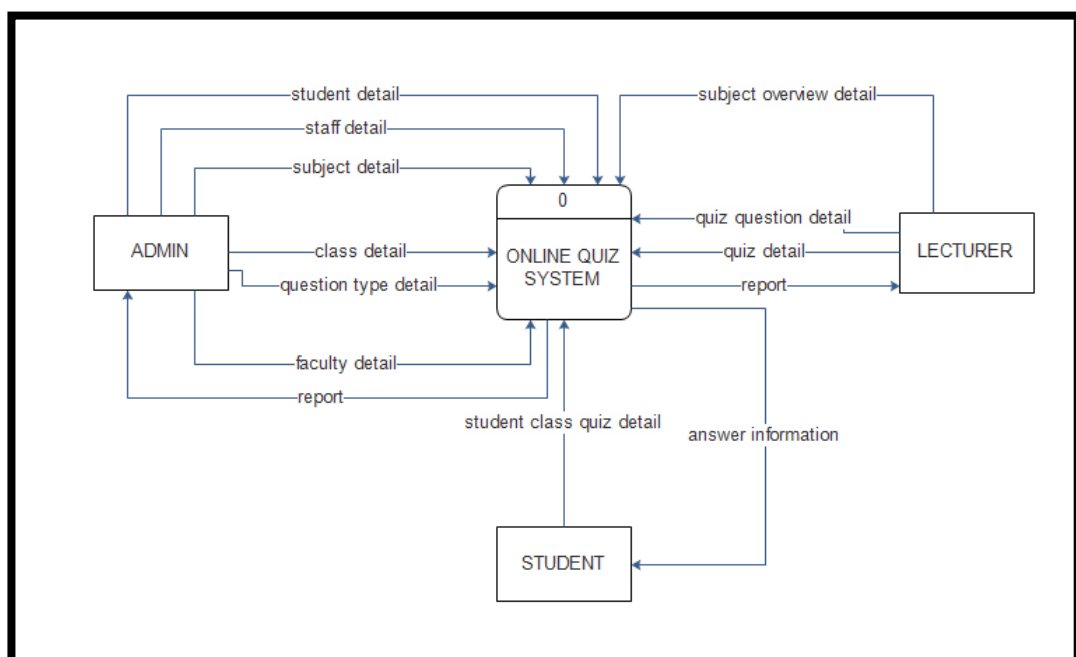


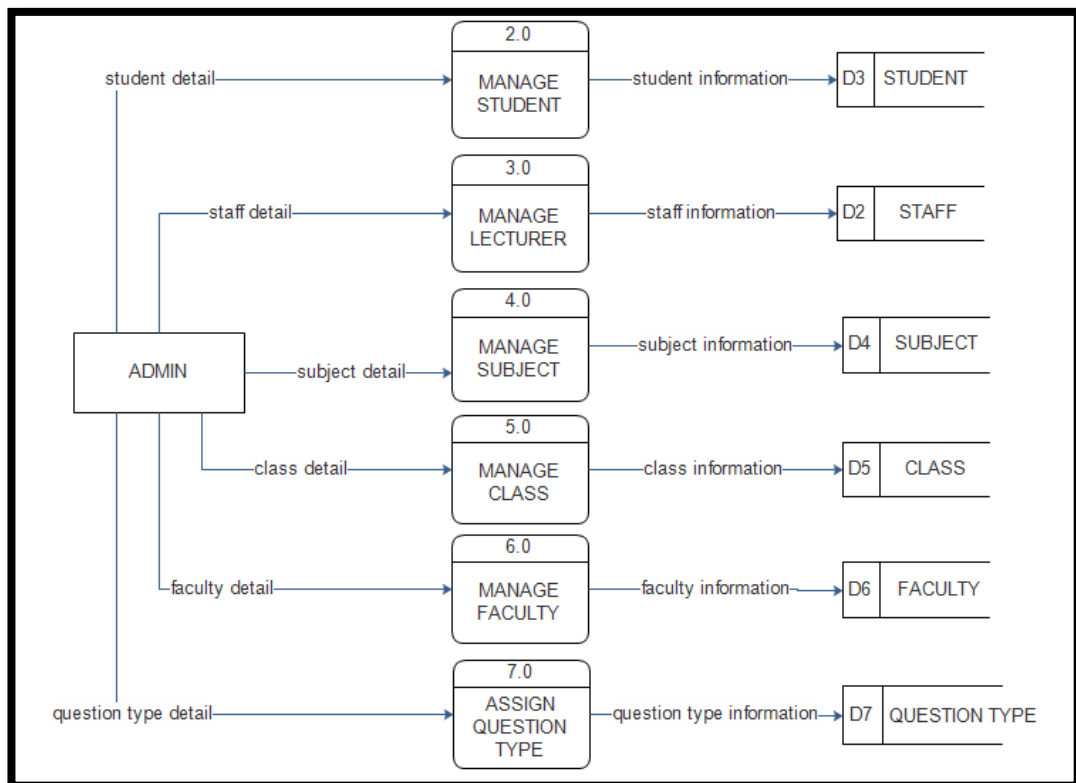
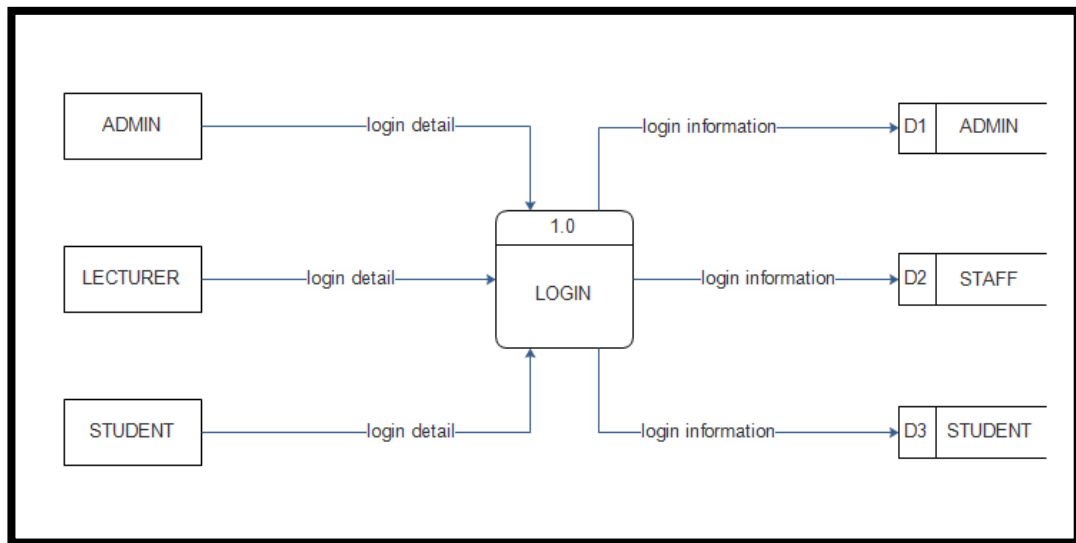
Figure 3.3: Context Diagram.

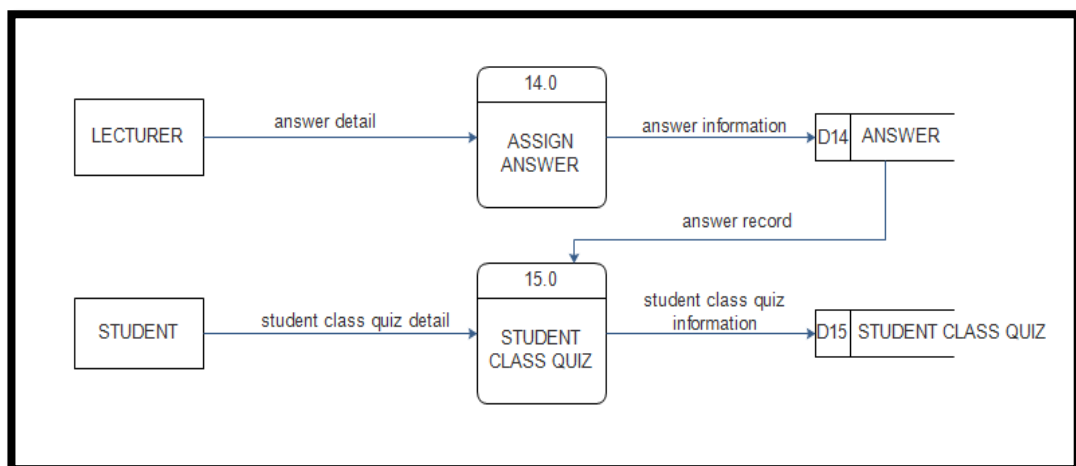
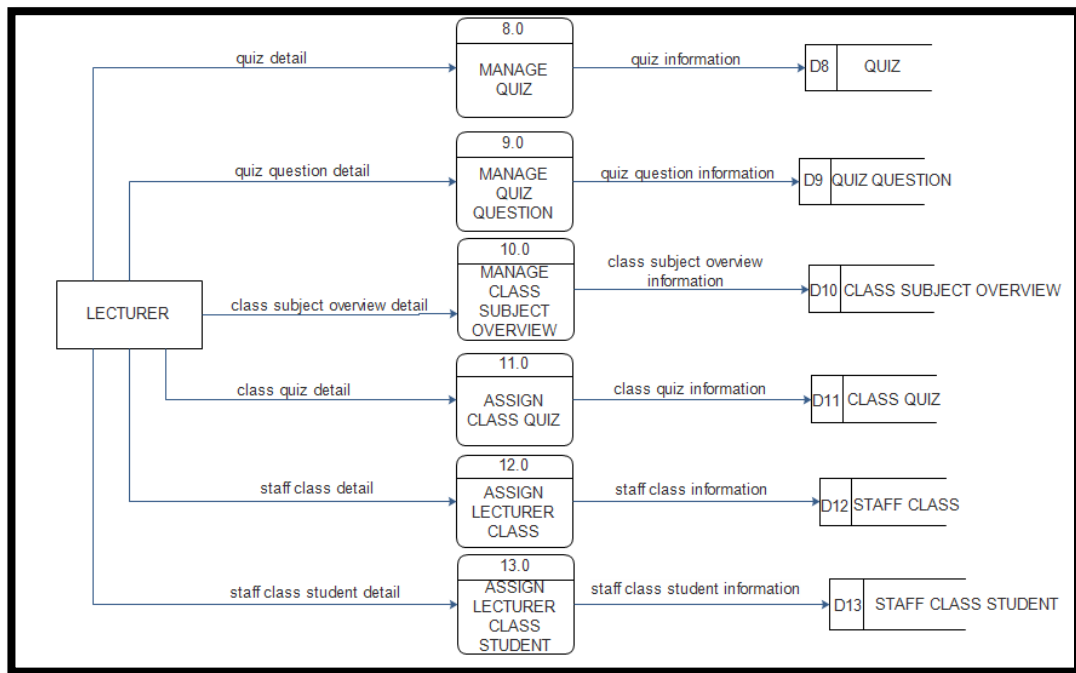
The context diagram for Online Quiz System is shown in the Figure 3.3. The Online Quiz System is at the centre of the diagram. There are three entities (Admin, Student and Lecturer) placed around the centre process. Thirteen data flows are involved in the interaction between the central process and the entities.

Description

The student entity have one outgoing data flows which is student class quiz detail. The incoming data flows is answer information. The lecturer has three outgoing data flows which are subject overview detail, quiz question detail and quiz detail. The incoming data flow is report. The Admin has six outgoing data flows which are student detail, staff detail, subject detail, class detail, question type detail and faculty detail. The incoming data flow is report.

3.5.2.2 Data Flow Diagram (DFD Level 0)





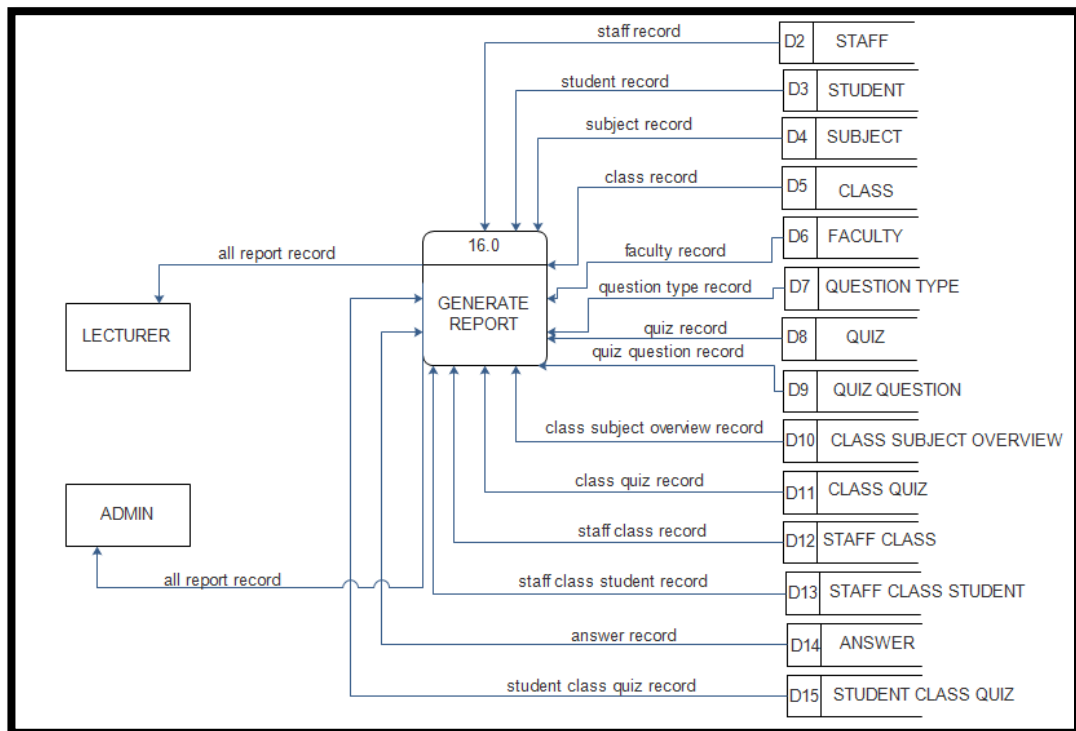


Figure 3.4: Data Flow Diagram Level 0

Description

In Online Quiz System there are three entities used in the DFD Level 0 which are ADMIN, LECTURER and STUDENT. While there are sixteen processes involve in this system such that, LOGIN, MANAGE STUDENT, MANAGE LECTURER, MANAGE SUBJECT, MANAGE CLASS, MANAGE FACULTY , ASSIGN QUESTION TYPE, MANAGE QUIZ, MANAGE QUIZ QUESTION , MANAGE CLASS SUBJECT OVERVIEW, ASSIGN CLASS QUIZ, ASSIGN LECTURER CLASS, ASSIGN LECTURER CLASS STUDENT , ASSIGN ANSWER, STUDENT CLASS QUIZ and GENERATE REPORT. In the meanwhile this system has fifteen data stores which are ADMIN, STUDENT, STAFF, SUBJECT, CLASS, FACULTY, QUESTION TYPE , QUIZ , QUIZ QUESTION, CLASS SUBJECT OVERVIEW , CLASS QUIZ , STAFF CLASS ,STAFF CLASS STUDENT, ANSWER and STUDENT CLASS QUIZ.

1. ADMIN, LECTURER and STUDENT enters USERNAME and PASSWORD to LOGIN process which outputs USERNAME and PASSWORD into ADMIN, STAFF and STUDENT data store.
2. ADMIN enters STUDENT DETAIL to MANAGE STUDENT process which outputs STUDENT INFORMATION into STUDENT data store.
3. ADMIN enters STAFF DETAIL to MANAGE LECTURER process which outputs STAFF INFORMATION into STAFF data store.
4. ADMIN enters SUBJECT DETAIL to MANAGE SUBJECT process which outputs SUBJECT INFORMATION into SUBJECT data store.

5. ADMIN enters CLASS DETAIL to MANAGE CLASS process which outputs CLASS INFORMATION into CLASS data store.
6. ADMIN enters FACULTY DETAIL to MANAGE FACULTY process which outputs FACULTY INFORMATION into FACULTY data store.
7. ADMIN enters QUESTION TYPE DETAIL to ASSIGN QUESTION TYPE process which outputs QUESTION TYPE INFORMATION into QUESTION TYPE data store.
8. LECTURER enters QUIZ DETAIL to MANAGE QUIZ process which output QUIZ INFORMATION to QUIZ data store.
9. LECTURER enters QUIZ QUESTION DETAIL to MANAGE QUIZ QUESTION process which output QUIZ QUESTION INFORMATION to QUIZ QUESTION data store.
10. LECTURER enters CLASS SUBJECT OVERVIEW DETAIL to MANAGE CLASS SUBJECT OVERVIEW process which output CLASS SUBJECT OVERVIEW INFORMATION to CLASS SUBJECT OVERVIEW data store.
11. LECTURER enters CLASS QUIZ DETAIL to ASSIGN CLASS QUIZ process which output CLASS QUIZ INFORMATION to CLASS QUIZ data store.
12. LECTURER enters STAFF CLASS DETAIL to ASSIGN LECTURER CLASS process which output STAFF CLASS INFORMATION to STAFF CLASS data store.
13. LECTURER enters STAFF CLASS STUDENT DETAIL to ASSIGN LECTURER CLASS STUDENT process which output STAFF CLASS STUDENT INFORMATION to STAFF CLASS STUDENT data store.
14. LECTURER enters ANSWER DETAIL to ASSIGN ANSWER process which output ANSWER INFORMATION to ANSWER data store.

15. STUDENT enters STUDENT CLASS QUIZ DETAIL to STUDENT CLASS QUIZ process which output STUDENT CLASS QUIZ INFORMATION to STUDENT CLASS QUIZ data store.

16. ANSWER RECORD from ANSWER data store add to STUDENT CLASS QUIZ process.

17. ADMIN enters ALL REPORT RECORD to GENERATE REPORT process which output ALL REPORT RECORD.

18. LECTURER enters ALL REPORT RECORD to GENERATE REPORT process which output ALL REPORT RECORD.

3.5.2.3 Data Flow Diagram (DFD Level 1)

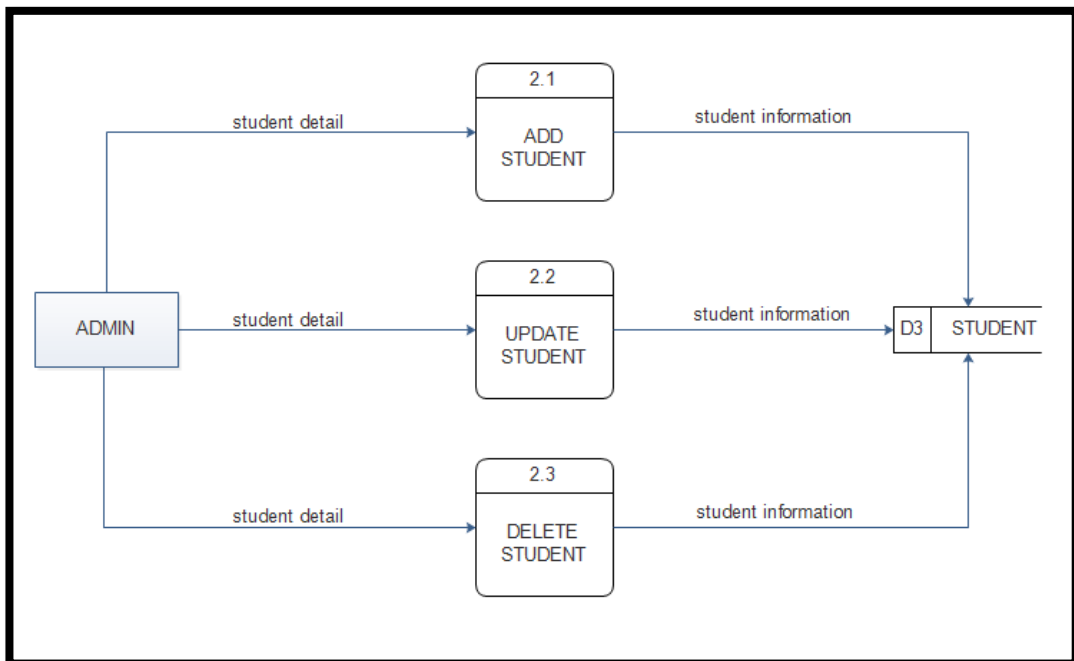


Figure 3.5: Data Flow Diagram Level 1 Process Manage Student

3.5.2.4 Data Flow Diagram (DFD Level 1)

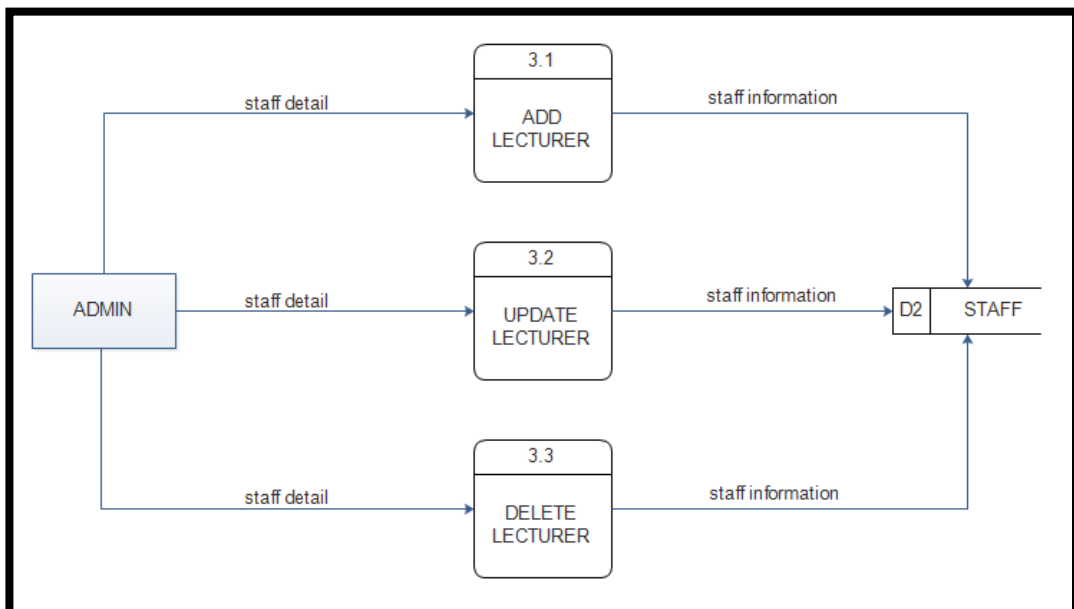


Figure 3.6: Data Flow Diagram Level 1 Process Manage Lecturer

3.5.2.5 Data Flow Diagram (DFD Level 1)

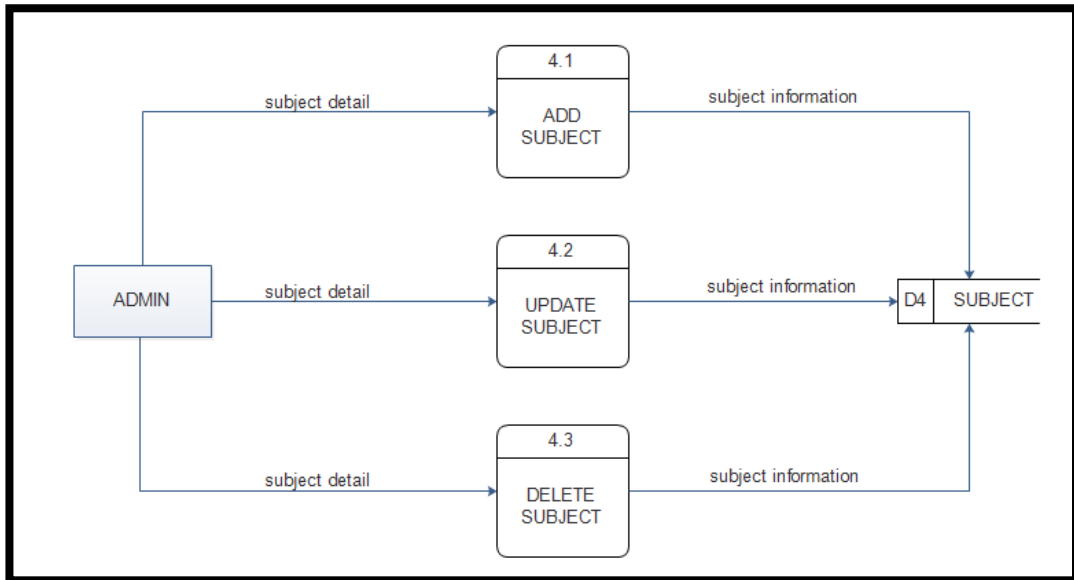


Figure 3.7: Data Flow Diagram Level 1 Process Manage Subject

3.5.2.6 Data Flow Diagram (DFD Level 1)

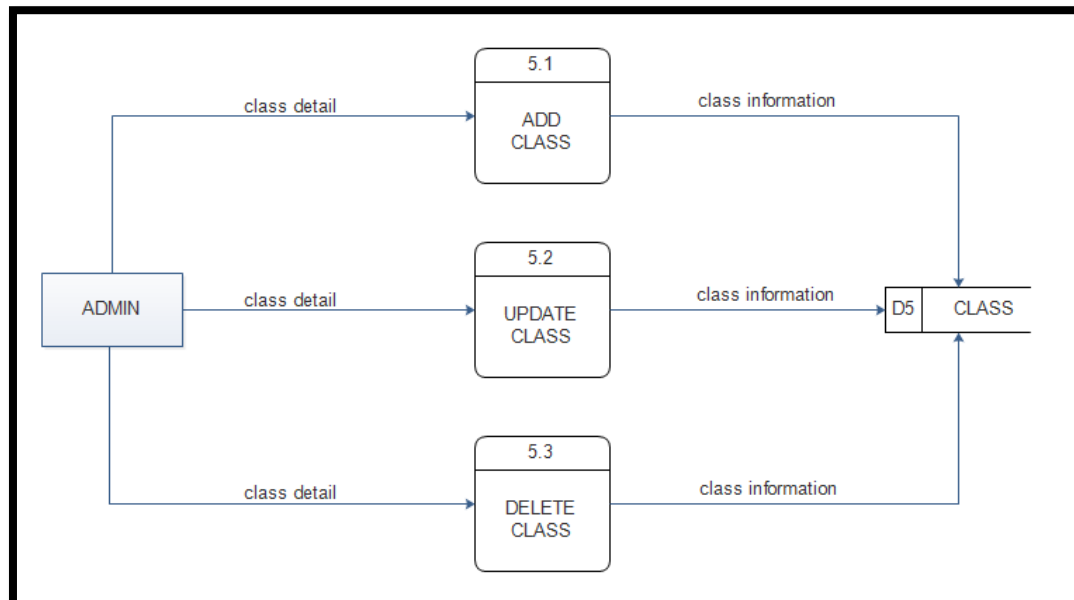


Figure 3.8: Data Flow Diagram Level 1 Process Manage Class

3.5.2.7 Data Flow Diagram (DFD Level 1)

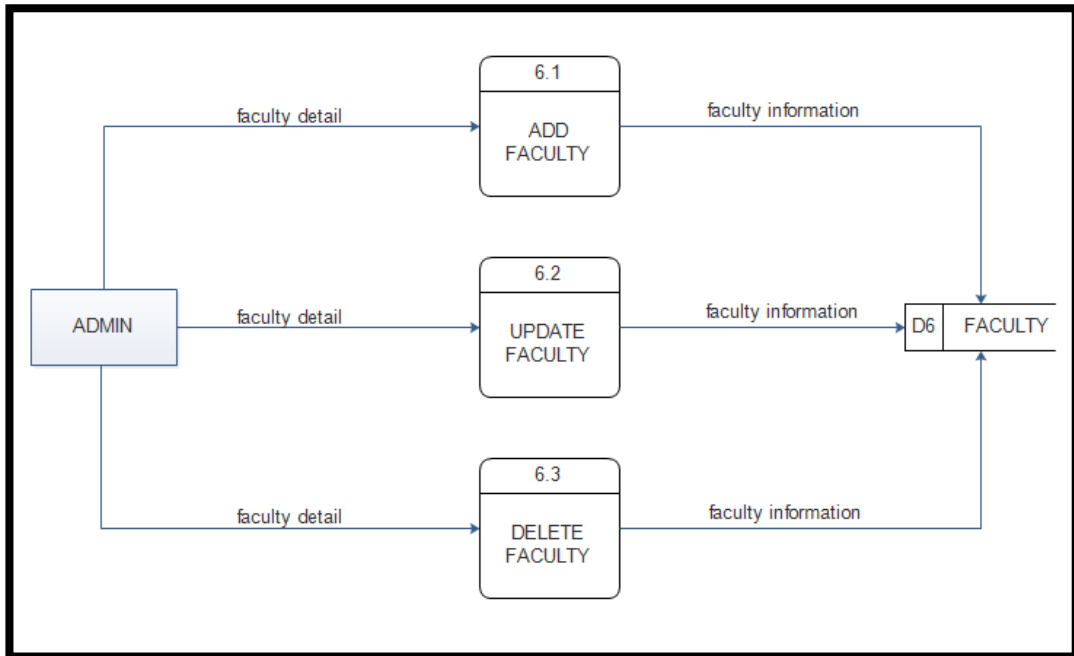


Figure 3.9 : Data Flow Diagram Level 1 Process Manage Faculty

3.5.2.8 Data Flow Diagram (DFD Level 1)

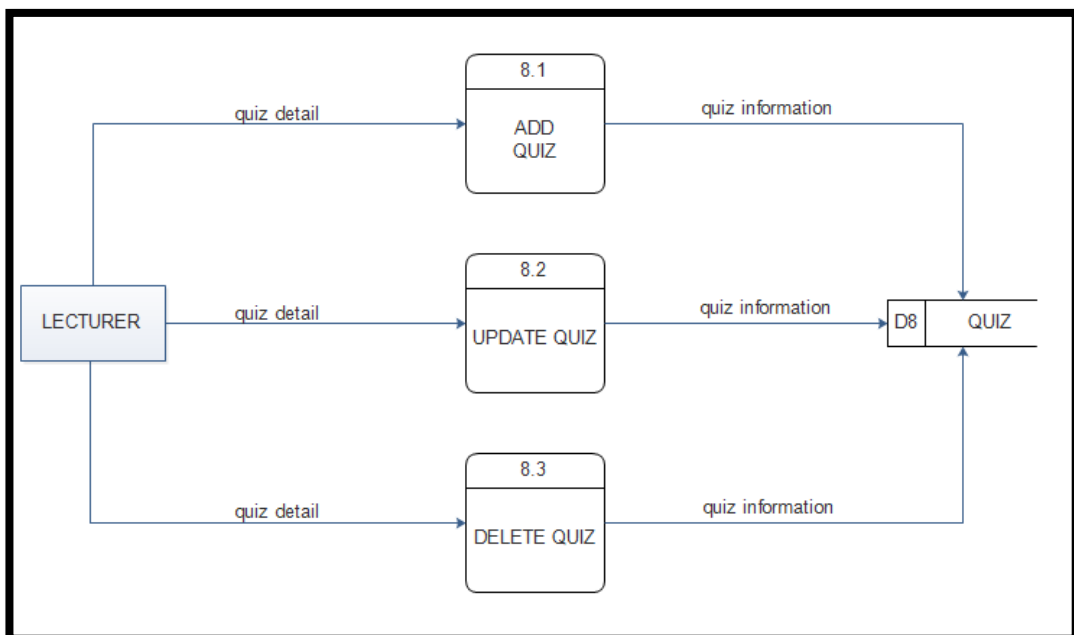


Figure 3.10 : Data Flow Diagram Level 1 Process Manage Quiz

3.5.2.9 Data Flow Diagram (DFD Level 1)

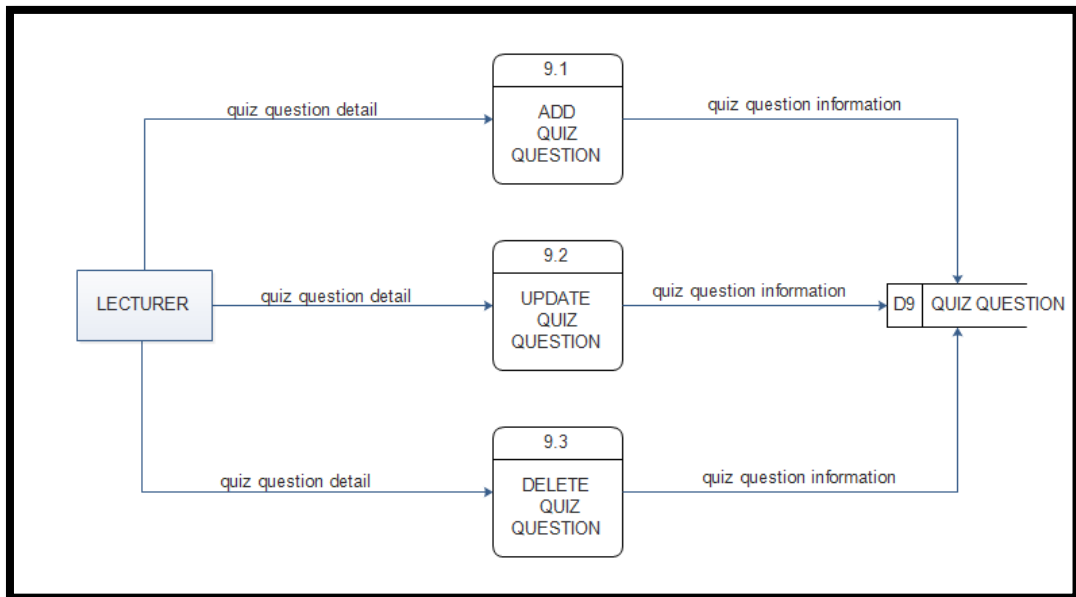


Figure 3.11 : Data Flow Diagram Level 1 Process Manage Quiz Question

3.5.2.10 Data Flow Diagram (DFD Level 1)

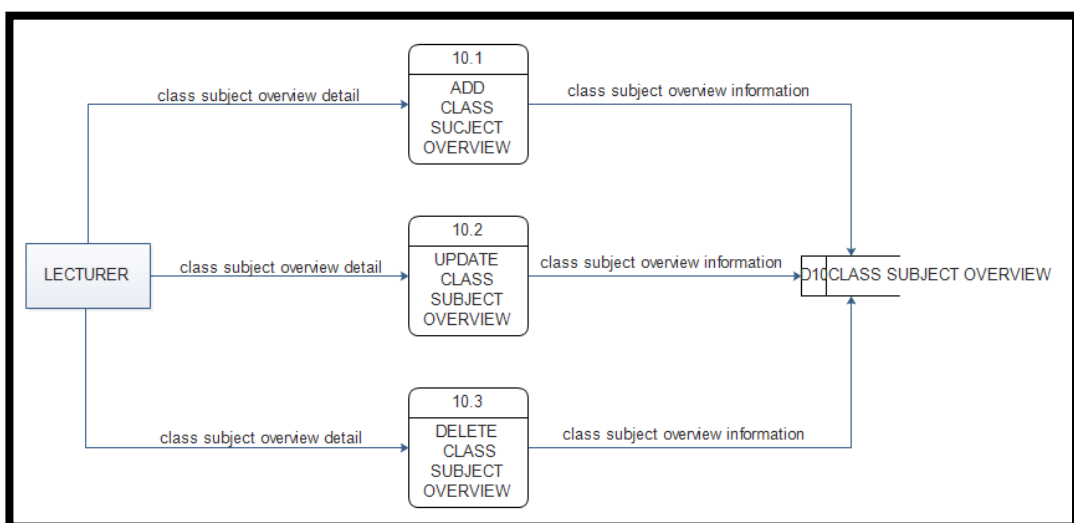


Figure 3.12 : Data Flow Diagram Level 1 Process Manage Class Subject Overview

3.5.3 Data Model

Data modelling in software engineering is the process of creating a data model for an information system by applying certain formal techniques. Data models have been built during the analysis and design phases of a project to ensure that the requirements for a new application are fully understood. A data model can be thought of as a flowchart that illustrates the relationships between data.

3.5.3.1 Entity Relationship Diagram

An entity-relationship diagram (ERD) is a specialized graphic form that illustrates the relationships between entities in a database. ERD is crucial to creating a good database design. It is used as a high-level logical data model, which is useful in developing conceptual designs for database. There are three basic elements in ERD:

- i) Entities are the "things" for which we want to store information. An entity is a person, place, thing or event.
- ii) Attributes are the data we want to collect for an entity.
- iii) Relationships describe the relations between the entities.

3.5.4 Algorithm

An algorithm is a formula or set of steps for solving a problem. To be an algorithm, a set of rules must be unambiguous and have a clear stopping point. Short answer based on keyword.

Example, Keyword (science computer). One of science computer course is software development.

```
if (condition) {  
    code to be executed if condition is true;  
} else {  
    code to be executed if condition is false;  
}
```

Figure 3.14 : Shows the Algorithm used in this project

3.5.5 Data Dictionary

1. TABLE ADMIN
2. TABLE ANSWER
3. TABLE CLASS
4. TABLE CLASS_QUIZ
5. TABLE CLASS_SUBJECT_OVERVIEW
6. TABLE FACULTY
7. TABLE QUESTION_TYPE
8. TABLE QUIZ
9. TABLE QUIZ_QUESTION
10. TABLE STAFF
11. TABLE STAFF_CLASS
12. TABLE STAFF_CLASS_STUDENT
13. TABLE STUDENT
14. TABLE STUDENT_CLASS_QUIZ
15. TABLE SUBJECT

3.5.5.1 Overall Table

Table 3.3: Shows Data Dictionary for Overall Data Table

Table	Action	Rows	Type	Collation	Size
admin	★ Browse Structure Search Insert Empty Drop	1	InnoDB	latin1_swedish_ci	16 KiB
answer	★ Browse Structure Search Insert Empty Drop	4	InnoDB	latin1_swedish_ci	32 KiB
class	★ Browse Structure Search Insert Empty Drop	14	InnoDB	latin1_swedish_ci	16 KiB
class_quiz	★ Browse Structure Search Insert Empty Drop	3	InnoDB	latin1_swedish_ci	48 KiB
class_subject_overview	★ Browse Structure Search Insert Empty Drop	1	InnoDB	latin1_swedish_ci	32 KiB
faculty	★ Browse Structure Search Insert Empty Drop	4	InnoDB	latin1_swedish_ci	16 KiB
question_type	★ Browse Structure Search Insert Empty Drop	3	InnoDB	latin1_swedish_ci	16 KiB
quiz	★ Browse Structure Search Insert Empty Drop	3	InnoDB	latin1_swedish_ci	32 KiB
quiz_question	★ Browse Structure Search Insert Empty Drop	3	InnoDB	latin1_swedish_ci	48 KiB
staff	★ Browse Structure Search Insert Empty Drop	9	InnoDB	latin1_swedish_ci	32 KiB
staff_class	★ Browse Structure Search Insert Empty Drop	26	InnoDB	latin1_swedish_ci	64 KiB
staff_class_student	★ Browse Structure Search Insert Empty Drop	27	InnoDB	latin1_swedish_ci	64 KiB
student	★ Browse Structure Search Insert Empty Drop	34	InnoDB	latin1_swedish_ci	32 KiB
student_class_quiz	★ Browse Structure Search Insert Empty Drop	1	InnoDB	latin1_swedish_ci	48 KiB
subject	★ Browse Structure Search Insert Empty Drop	24	InnoDB	latin1_swedish_ci	16 KiB
15 tables	Sum	157	InnoDB	latin1_swedish_ci	512 KiB

Table 3.3 shows the entities that involve in the project which consist of admin, answer, class, class_quiz, class_subject_overview, faculty, question_type, quiz, quiz_question, staff, staff_class, staff_class_student, student, student_class_quiz and subject.

3.5.5.2 Admin Table

Table 3.4: Shows Data Dictionary for Table Admin

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	admin_id	varchar(10)	latin1_swedish_ci		No	None			Change Drop Primary Unique
2	username	varchar(100)	latin1_swedish_ci		No	None			Change Drop Primary Unique
3	password	varchar(100)	latin1_swedish_ci		No	None			Change Drop Primary Unique

Table 3.4 shows the database of the Admin's tables. It has three attributes which are admin_id, username , password . The admin_id is the primary key for this table.

3.5.5.3 Answer Table

Table 3.5: Shows Data Dictionary for Table Answer

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	answer_id	int(11)			No	None		AUTO_INCREMENT	Change Drop Primary Unique
2	quiz_question_id	int(11)			No	None			Change Drop Primary Unique
3	answer_text	varchar(100)	latin1_swedish_ci		No	None			Change Drop Primary Unique
4	choices	varchar(3)	latin1_swedish_ci		No	None			Change Drop Primary Unique

Table 3.5 shows the database of the Answer's tables. It has four attributes which are answer_id , quiz_question_id , answer_text and choices. The answer_id is the primary key for this table.

3.5.5.4 Class Table

Table 3.6: Shows Data Dictionary for Table Class

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	class_id	int(11)			No	None		AUTO_INCREMENT	Change Drop Primary Unique
2	class_name	varchar(100)	latin1_swedish_ci		No	None			Change Drop Primary Unique

Table 3.6 shows the database of the Class's tables. It has two attributes which are class_id and class_name. The class_id is the primary key for this table.

3.5.5.5 Class_Quiz Table

Table 3.7: Shows Data Dictionary for Table Class_Quiz

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	class_quiz_id	int(11)			No	None		AUTO_INCREMENT	Change Drop Primary Unique
2	staff_class_id	int(11)			No	None			Change Drop Primary Unique
3	quiz_time	int(11)			No	None			Change Drop Primary Unique
4	quiz_id	int(11)			No	None			Change Drop Primary Unique

Table 3.7 shows the database of the Class_Quiz's tables. It has four attributes which are class_quiz_id , staff_class_id , quiz_time and quiz_id. The class_quiz_id is the primary key for this table.

3.5.5.6 Class_Subject_Overview Table

Table 3.8: Shows Data Dictionary for Table Class_Subject_Overview

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	class_subject_overview_id	int(11)			No	None		AUTO_INCREMENT	Change Drop Primary
2	staff_class_id	int(11)			No	None			Change Drop Primary
3	content	varchar(10000)	latin1_swedish_ci		No	None			Change Drop Primary

Table 3.8 shows the database of the Class_Subject_Overview 's tables. It has three attributes which are class_subject_overview_id , staff_class_id and content. The class_subject_overview_id is the primary key for this table.

3.5.5.7 Faculty Table

Table 3.9: Shows Data Dictionary for Table Faculty

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	faculty_id	int(11)			No	None		AUTO_INCREMENT	Change Drop Primary Unique
2	faculty_name	varchar(100)	latin1_swedish_ci		No	None			Change Drop Primary Unique

Table 3.9 shows the database of the Faculty's tables. It has two attributes which are faculty_id and faculty_name. The faculty_id is the primary key for this table.

3.5.5.8 Question_Type Table

Table 3.10: Shows Data Dictionary for Table Question_Type

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	question_type_id	int(11)			No	None		AUTO_INCREMENT	Change Drop Primary Unique
2	question_type	varchar(150)	latin1_swedish_ci		No	None			Change Drop Primary Unique

Table 3.10 shows the database of the Question_Type's tables. It has two attributes which are question_type_id and question_type. The question_type_id is the primary key for this table.

3.5.5.9 Quiz Table

Table 3.11: Shows Data Dictionary for Table Quiz





















#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	quiz_id	int(11)			No	None		AUTO_INCREMENT	 Change  Drop  Primary  Unique
2	quiz_title	varchar(50)	latin1_swedish_ci		No	None			 Change  Drop  Primary  Unique
3	quiz_description	varchar(100)	latin1_swedish_ci		No	None			 Change  Drop  Primary  Unique
4	date_added	varchar(100)	latin1_swedish_ci		No	None			 Change  Drop  Primary  Unique
5	staff_id	int(11)			No	None			 Change  Drop  Primary  Unique

Table 3.11 shows the database of the Quiz's tables. It has five attributes which are quiz_id, quiz_title, quiz_description , date_added and staff_id. The quiz_id is the primary key for this table.

3.5.5.10 Quiz_Question Table

Table 3.12: Shows Data Dictionary for Table Quiz_Question





























#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	quiz_question_id	int(11)			No	None		AUTO_INCREMENT	 Change  Drop  Primary  Unique
2	quiz_id	int(11)			No	None			 Change  Drop  Primary  Unique
3	question_text	varchar(100)	latin1_swedish_ci		No	None			 Change  Drop  Primary  Unique
4	question_type_id	int(11)			No	None			 Change  Drop  Primary  Unique
5	points	int(11)			No	None			 Change  Drop  Primary  Unique
6	date_added	varchar(100)	latin1_swedish_ci		No	None			 Change  Drop  Primary  Unique
7	answer	varchar(100)	latin1_swedish_ci		No	None			 Change  Drop  Primary  Unique

Table 3.12 shows the database of the Quiz_Question's tables. It has seven attributes which are quiz_question_id, quiz_id, question_text , question_type_id , points, date_added and answer. The quiz_question_id is the primary key for this table.

3.5.5.11 Staff Table

Table 3.13: Shows Data Dictionary for Table Staff

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	staff_id	int(11)			No	None		AUTO_INCREMENT	Change Drop Primary Unique
2	username	varchar(100)	latin1_swedish_ci		No	None			Change Drop Primary Unique
3	password	varchar(200)	latin1_swedish_ci		No	None			Change Drop Primary Unique
4	staff_name	varchar(100)	latin1_swedish_ci		No	None			Change Drop Primary Unique
5	faculty_id	int(11)			No	None			Change Drop Primary Unique
6	location	varchar(200)	latin1_swedish_ci		No	None			Change Drop Primary Unique

Table 3.13 shows the database of the Staff's tables. It has six attributes which are staff_id, username, password , staff_name, faculty_id and location. The staff_id is the primary key for this table.

3.5.5.12 Staff_Class Table

Table 3.14: Shows Data Dictionary for Table Staff_Class

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	staff_class_id	int(11)			No	None		AUTO_INCREMENT	Change Drop Primary Unique
2	staff_id	int(11)			No	None			Change Drop Primary Unique
3	class_id	int(11)			No	None			Change Drop Primary Unique
4	subject_id	int(11)			No	None			Change Drop Primary Unique
5	thumbnails	varchar(100)	latin1_swedish_ci		No	None			Change Drop Primary Unique

Table 3.14 shows the database of the Staff_Class's tables. It has six attributes which are staff_class_id, staff_id, class_id , subject_id and thumbnails. The staff_class_id is the primary key for this table.

3.5.5.13 Staff_Class_Student Table

Table 3.15: Shows Data Dictionary for Table Staff_Class_Student

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	staff_class_student_id	int(11)			No	None		AUTO_INCREMENT	Change Drop Primary Unique
2	staff_class_id	int(11)			No	None			Change Drop Primary Unique
3	matric_no	int(11)			No	None			Change Drop Primary Unique
4	staff_id	int(11)			No	None			Change Drop Primary Unique

Table 3.15 shows the database of the Staff_Class_Student's tables. It has four attributes which are staff_class_student_id, staff_class_id, matric_no and staff_id. The staff_class_student_id is the primary key for this table.

3.5.5.14 Student Table

Table 3.16 : Shows Data Dictionary for Table Student

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	matric_no	int(11)			No	None		AUTO_INCREMENT	Change Drop Primary Unique
2	stu_name	varchar(100)	latin1_swedish_ci		No	None			Change Drop Primary Unique
3	class_id	int(11)			No	None			Change Drop Primary Unique
4	username	varchar(100)	latin1_swedish_ci		No	None			Change Drop Primary Unique
5	password	varchar(100)	latin1_swedish_ci		No	None			Change Drop Primary Unique
6	location	varchar(100)	latin1_swedish_ci		No	None			Change Drop Primary Unique

Table 3.16 shows the database of the Student's tables. It has six attributes which are matric_no, stu_name, class_id, username, password and location. The matric_no is the primary key for this table.

3.5.5.15 Student_Class_Quiz Table

Table 3.17: Shows Data Dictionary for Table Student_Class_Quiz

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	student_class_quiz_id	int(11)			No	None		AUTO_INCREMENT	Change Drop Primary
2	class_quiz_id	int(11)			No	None			Change Drop Primary
3	matric_no	int(11)			No	None			Change Drop Primary
4	student_quiz_time	varchar(100)	latin1_swedish_ci		No	None			Change Drop Primary
5	grade	varchar(100)	latin1_swedish_ci		No	None			Change Drop Primary

Table 3.17 shows the database of the Student_Class_Quiz's tables. It has five attributes which are student_class_quiz_id, class_quiz_id, matric_no, student_quiz_time and grade. The student_class_quiz_id is the primary key for this table.

3.5.5.16 Subject Table

Table 3.18 : Shows Data Dictionary for Table Subject

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	subject_id	int(11)			No	None		AUTO_INCREMENT	Change Drop Primary Unique
2	subject_code	varchar(100)	latin1_swedish_ci		No	None			Change Drop Primary Unique
3	subject_title	varchar(100)	latin1_swedish_ci		No	None			Change Drop Primary Unique
4	description	longtext	latin1_swedish_ci		No	None			Change Drop Primary Unique
5	semester	varchar(100)	latin1_swedish_ci		No	None			Change Drop Primary Unique

Table 3.18 shows the database of the Subject 's tables. It has five attributes which are subject_id, subject_code, subject_title, description and semester. The subject_id is the primary key for this table.

3.6 Chapter Summary

This chapter fully described about the methodology used to develop the system, hardware and software requirement for the system. The SDLC in Online Quiz System is an iterative model. The SDLC is chosen based on the complexity of the system throughout the developing process. In the System Design part, Context Diagram, Data Flow Diagram, Entity Relationship Diagram and Data Dictionary are briefly explained for each process that involves in Online Quiz System.

CHAPTER 4

IMPLEMENTATION AND RESULT

4.1 Introduction

Implementing and testing are the important parts in order to produce the good quality of system. After the implement process, the evaluation and testing should be done to ensure the defects on the system can be solved. Technique adopted for the evaluation and testing of Online Quiz System is test case testing which test the system functionalities modules by modules to ensure that the software confirms to its specification and meets the requirements.

4.2 Interface Design/Menu/Forms

The graphic user interface (GUI) is a medium which is available for each user. The user can be interacted with the system directly. In interface production, XAMPP (Apache and MySQL) are used to ensure the implementation run smoothly. The following is interface in the Online Quiz System. The further explanation is about web based system.

4.2.1 Interface Design (Web Based System)

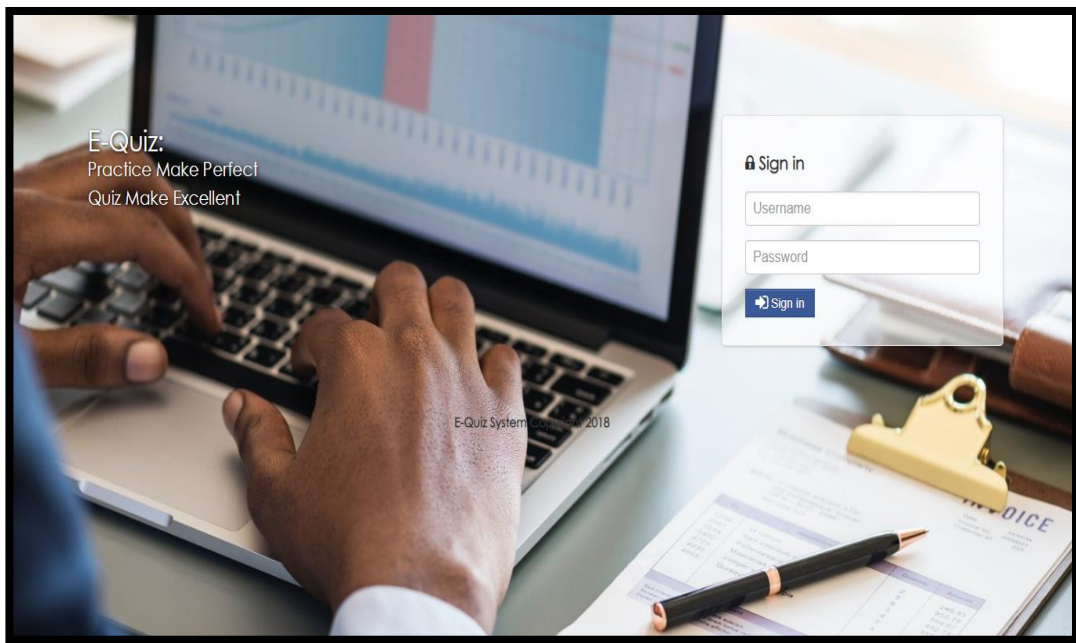


Figure 4.1: Login Module For Lecturer and Student

This is the login page for lecturers and students in the system. The users should login in the system before used it. JavaScript validation was used to ensure that the login module is safe from the threat of attackers.

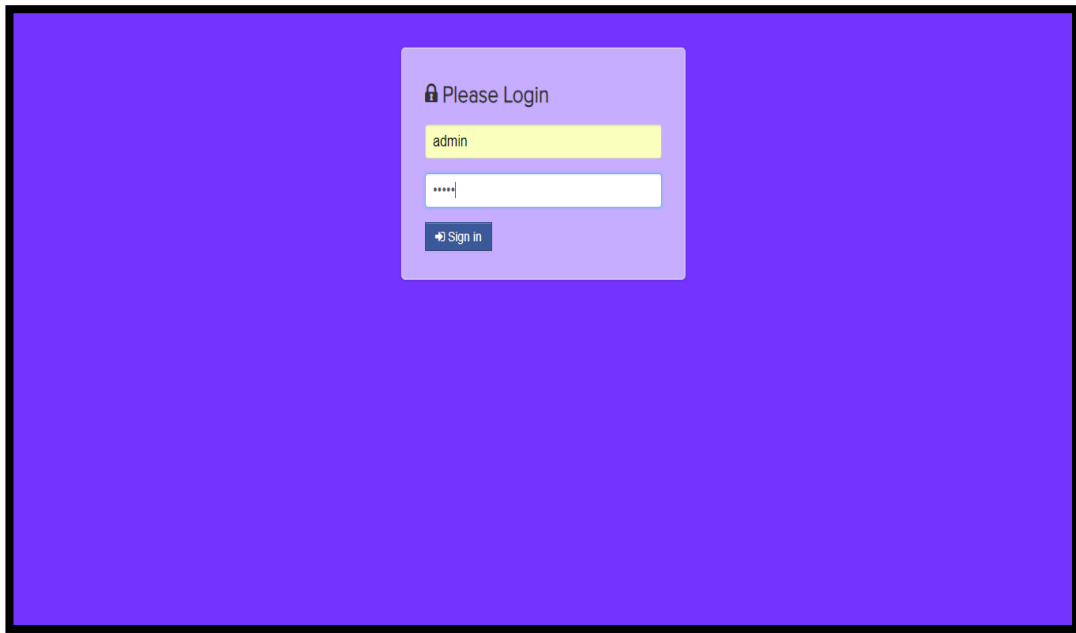


Figure 4.2 : Login Module For Admin

This is the login page for admin in the system. The users should to login in the system before used it. JavaScript validation was used to ensure that the login module is safe from the threat of attackers.

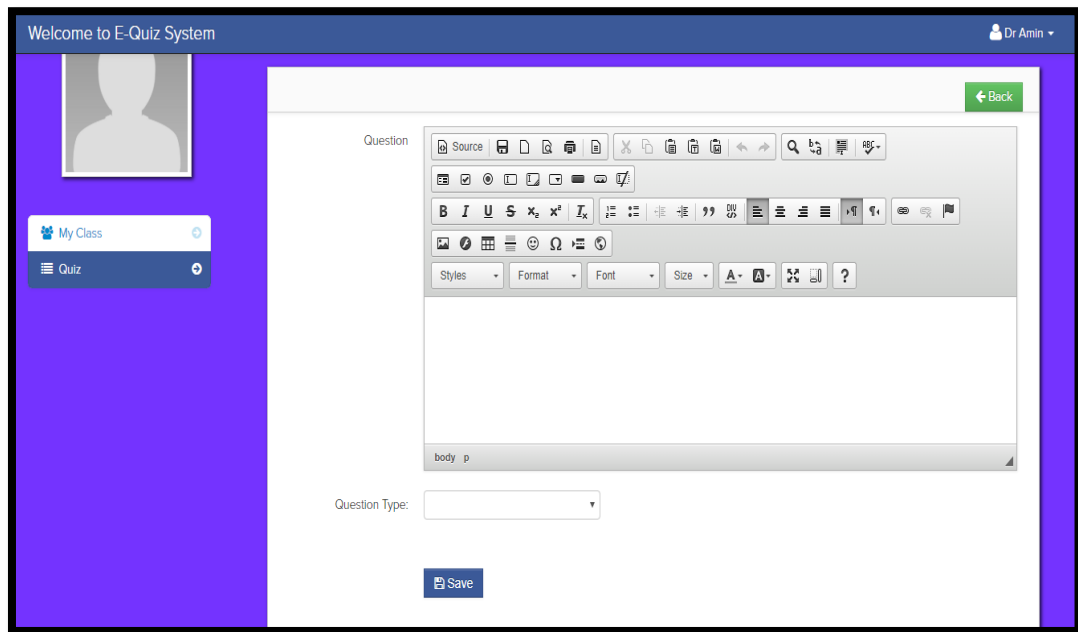


Figure 4.3 : Add Question

The Figure 4.3 shows the login page for adding the new question for students quiz. The lecturer who are responsible will be add the quiz according question type.

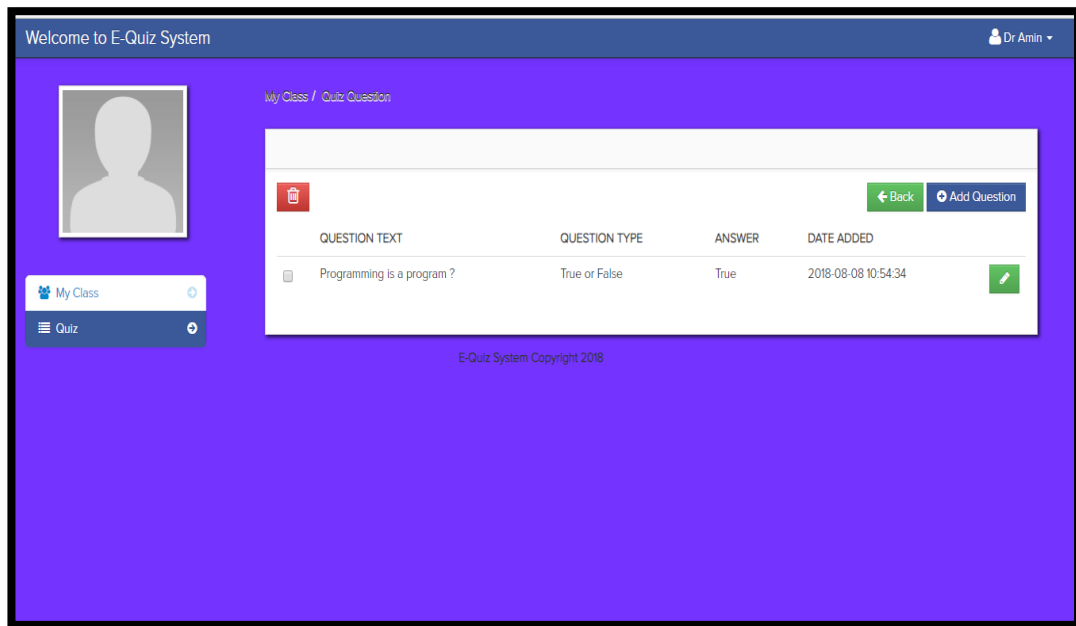


Figure 4.4: Question List

The Figure 4.4 shows question list after lecturer add question and click save button. Question list will be displayed and lecturers can add new question, update or delete that question.

The screenshot displays a web application interface with a purple sidebar on the left containing navigation links: Dashboard, Subject, Class, Faculty, Students, Lecturers, and Logout. The main content area is divided into two sections. The left section, titled 'Add Lecturer', contains a form with a dropdown menu, input fields for Username, Password, and Staff name, and a blue button with a plus icon. The right section, titled 'Lecturer List', features a table with columns for NAME, USERNAME, PASSWORD, and FACULTY. The table lists five lecturers: Dr Shah, Dr Amin, Dr Ruby, RammeiCadagat, and Honeylee Magbanua. Each row includes a checkbox, a green edit icon, and a green delete icon. The table also has a search bar and a 'records per page' dropdown set to 10.

	NAME	USERNAME	PASSWORD	FACULTY	
<input type="checkbox"/>	Dr Shah	ST001	test	Fakulti Informatik dan Komputeran	
<input type="checkbox"/>	Dr Amin	ST002	test	Fakulti Informatik dan Komputeran	
<input type="checkbox"/>	Dr Ruby	ST003	test	Fakulti Informatik dan Komputeran	
<input type="checkbox"/>	RammeiCadagat	ST004	test	Fakulti Informatik dan Komputeran	
<input type="checkbox"/>	Honeylee Magbanua	ST005	test	Fakulti Informatik dan Komputeran	

Figure 4.5: Add New Lecturer Form

The Figure 4.5 shows the form for adding the new lecturer. This function only can be done by admin.

4.3 Testing Approach

A test strategy is an outline that describes the testing approach of the software development cycle. For this system, testing is carried out by using test case. Using white box testing, test case has been made to find and the defect on this system. A test case is a set of procedure or condition used by tester to determine whether software system is working correctly or not.

For this system, several modules that are going to be tested such as login page and change password.

Table 4.1 : A Test Case 1 (Login Page Validation Success)

Step	Procedure	Expected Results
1	Go to http://localhost/fyp_quiz(ayu)/index.php	Login page is loaded
2	Enter username : Enter password :	
3	Click “Sign in” button	Response = Please fill out this field.

Table 4.2 : B Test Case 2 (Login Page Validation Success)

Step	Procedure	Expected Results
1	Go to http://localhost/fyp_quiz(ayu)/index.php	Login page is loaded
2	Enter username : 039981 Enter password : 1234	
3	Click “Sign in” button	Response = Access Granted, Welcome to E- Quiz System

Table 4.3 : C Test Case 3 (Change Password Success)

Step	Procedure	Expected Results
1	Go to http://localhost/fyp_quiz(ayu)/change_password_student.php Action = change_password_student	Login page is loaded
2	Current Password : 1234 New Password : test Re-type Password : test	
3	Click “Save” button	Response = Your password is successfully changed

Table 4.4 : D Test Case 4 (Change Password Failed)

Step	Procedure	Expected Results
1	Go to http://localhost/fyp_quiz(ayu)/change_password_student.php Action = change_password_student	Login page is loaded
2	Current Password : New Password : test Re-type Password : test	
3	Click “Save” button	Response = Change Password Failed. Password does not match with your current password.

Table 4.5 : E Test Case 5 (Change Password Failed)

Step	Procedure	Expected Results
1	Go to http://localhost/fyp_quiz(ayu)/change_password_student.php Action = change_password_student	Login page is loaded
2	Current Password : 1234 New Password : 4321 Re-type Password : 2341	
3	Click “Save” button	Response = Change Password Failed. Password does not match with your current password.

4.4 Chapter Summary

In this chapter, the interfaces of the system that help the user to interact with the system. Other than PHP language, JavaScript language for web-based system is used to develop this system. Besides that, the testing approach is the methods that are used for test the functional and non-functional of the system for each main module on the system by using test case.

CHAPTER 5

CONCLUSION

5.1 Introduction

This chapter discuss on the project contributions, constrains of project and its development, future works that can be taken into considerations and eventually conclusion.

5.2 Project Contribution

The contribution of this system is to support lecturers in UniSZA make online quiz for students in UniSZA. Online Quiz System is a web-based quiz system which can be used by lecturers to evaluate students effectively, efficiently and perfectly. Besides that, these system is also can reduce time for lecturers on grading students By using web-based, student will see the result of quiz after answer the quiz. Moreover, the students able to answer quiz from any location. This method is more effective to prevent problem in manual quiz procedure.

5.3 Project Constraint

Each system or project that must have the some constraint that maybe on the construction phase or design phases it will effect to the development process. The constraints are accruing maybe from the planning phase it doesn't plan with a good planning. On this Online Quiz System is also have a constraint, the constraint are at the development phase, the constraint come from the process of implementing method rule-based for short answer on admin module and add student in the class for lecturer module. Other than that, class and subject cannot be add on lecturer module. Sometime, student can take the quiz but sometime student cannot take the quiz. Communication between coding that is connect with database server is very important, if some improvement can be done, the system's functionality will be more efficient and more effective.

5.4 Future Work

Every developer have aims to improve their system or project for the next project. For this system, the improvements are needed on question type such as essay and random short answer. A lot of improvements need to be done on the interface part and admin, lecturer and student module. The process of performance system on the coding with database server will be more efficient if this improvements are achieved. Besides that, the improvements on the interface part and functionality system can be prevent the error during running the system.

5.5 Conclusion

This project more focus on the problems who faced by the lecturers due to the manual system which are available now is not efficient. For instance, the losing of quiz paper, no pencil and no pen to do quiz on time. The lecturer cannot setup quiz for specific time and have to do quiz in class. Lecturer also need spend more time on grading. While, student also cannot take quiz from any location. This problems can be solved by Online Quiz System. In addition, this kind of system can be replaced the manual system in order to increase the efficiency of the quiz management.

The process in build up this system takes a long time. So that, the insufficient time problems should be faced and solved. In order to produce a good system, the time management is important to ensure the good quality of the system. The improvement should be done and insufficient time should be solved in order to make sure this system can run well and meet the user requirements.

REFERENCES

- [1] Rule-based Expert Systems.
<http://www.kau.edu.sa/Files/0052079/Subjects/ch5ExpertSystems.ppt>.
Accessed on 22 February 2018.
- [2] Umed H. Suthar, Prof. Abdul Rais , Ashish Upadhyay and Prabhakar Upadhyay.
Online Examination Management System Using Genetic Algorithm.
International Journal of Computer Science Trends and Technology (IJCST)
– Volume 3 Issue 5, Sep-Oct 2015 .
- [3] Sk. Imran Hossain Shoyeb. Android based Online Quiz Application.
Journal from Department of Computer Science and Engineering, East West
University, Dhaka-1212, Bangladesh, May 2015.
- [4] Hongmei Nie. Design and Development of the Online Examination System Based
on B/S Structure. 2nd International Conference on Teaching and Computational
Science (ICTCS 2014).
- [5] Burcu Yılmaz Kaya , Gökhan Kaya and Metin Dağdeviren.
A Sample Application of Web Based Examination System for Distance and Formal
Education. Journal of Procedia - Social and Behavioral Sciences 141 (2014) 1357 –
1362 .
- [6] Ian O'Neill. Using Assessment Software to Create a Dialogue-Based Tutorial.
Article from Queen's University, Belfast, 2018.

[7] Andrew Powell-Morse, 2016. Iterative Model: What Is It And When Should You Use It? . <https://airbrake.io/blog/sdlc/iterative-model>. Accessed on 4 March 2018.

APPENDIX A

(Gantt chart)

Task / Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Project Title Discussion and Briefing																
Project Title Registration																
Proposal Writing (introduction)																
Project Writing (literature review 1)																
Project Writing (literature review 2)																
Proposal Progress Presentation and Evaluation																
Discussion and Correction of the Proposal																
Proposed Solution - Methodology																
Proof of Concept																
Drafting Report Proposal-1																
Drafting Report Proposal-2																
Submit Draft Report – supervisor -1																
Submit Draft Report – supervisor -2																
Seminar Presentation																
Report Correction																
Final Report Submission																

Gantt Chart for Final Year Project 1

Task / Week	18	19	20	21	22	23	24	25	26
Project Meeting With Supervisor									
Project Development									
Project Progress Presentation and Evaluation									
Project Testing & Project Meeting With Supervisor									
Project Testing (continue) & Project Meeting With Supervisor									
Submit Draft Report to Supervisor & Project Meeting With Supervisor									
Submit Draft Report to Supervisor & Project Meeting With Supervisor									
Seminar Presentation									
Submit Full Project Report to Supervisor									
Submit Hardcover to FYP Coordinator									

Gantt Chart for Final Year Project 2

APPENDIX B

(Main Coding)

Main Coding For Online Quiz System

1. Basic Code connection from database server for lecturer and student (dbcon.php)

```
<?php
error_reporting(0);
$host = "localhost";
$username = "root";
$password = "";
$db_name = "ayu_fyp";

$connect = new mysqli($host, $username, $password, $db_name);
if($connect->connect_errno)
{
    echo "Failed to connect to MySQL : ".$connect->error;
}

$username = $connect-
>real_escape_string(stripslashes($_POST['username']));
$password = $connect-
>real_escape_string(stripslashes($_POST['password']));
?>
```

2. Basic Code connection from database server for admin (dbcon.php)

```
<?php
mysql_select_db('ayu_fyp',mysql_connect('localhost','root',''))or
die(mysql_error());
?>
```

3. Basic Code function connection for database server (dbConnector.php)

```
<?php

class DbConnector {

var $theQuery;
var $link;

function DbConnector(){

    // Get the main settings from the array we just loaded
    $host = 'localhost';
    $db = 'ayu_fyp';
    $user = 'root';
    $pass = "";

    // Connect to the database
    $this->link = mysql_connect($host, $user, $pass);
    mysql_select_db($db);
    register_shutdown_function(array(&$this, 'close'));

}

/** Function: query, Purpose: Execute a database query ***
function query($query) {

    $this->theQuery = $query;
    return mysql_query($query, $this->link);

}

/** Function: fetchArray, Purpose: Get array of query results ***
function fetchArray($result) {

    return mysql_fetch_array($result);

}

/** Function: close, Purpose: Close the connection ***
function close() {

    mysql_close($this->link);

}

}

?>
```

4. Basic Code for time for student answer the quiz (timer.ajax.php)

```
<?php
include('dbcon.php');
include('session.php');

$sql = mysql_query("SELECT * FROM student_class_quiz WHERE
matric_no = '$session_id'")or die(mysql_error());
$row = mysql_fetch_array($sql);
$quiz_time = $row['student_quiz_time'];

$sqlp = mysql_query("SELECT * FROM class_quiz")or die(mysql_error());
$rowp = mysql_fetch_array($sqlp);
if($quiz_time <= $rowp['quiz_time'] AND $quiz_time > 0){
    mysql_query("UPDATE student_class_quiz SET student_quiz_time =
\".$row['student_quiz_time'].\" - 1 WHERE matric_no = '$session_id'")or
die(mysql_error());
    /* $_SESSION['take_exam'] = 'continue'; */

    $init = $quiz_time;
    $minutes = floor(($init / 60) % 60);
    $seconds = $init % 60;
    if($init > 59){
        echo "$minutes minutes and $seconds seconds";
    } else {
        echo "$seconds seconds";
    }
} /* else {
    $_SESSION['take_exam'] = 'denied';
} */
?>
```

5. Basic Code for lecturer add question in the quiz (add_question.php)

```
<form class="form-horizontal" method="post">
<div class="control-group">

    <label class="control-label" for="inputPassword">Question</label>

    <div class="controls">

        <textarea name="question" id="ckeditor_full"
required></textarea>

    </div>
</div>

    <!-- <div class="control-group">

        <label class="control-label" for="inputEmail">Points</label>

        <div class="controls">

            <input type="number" class="span1" name="points" min=1 max=5
required>

        </div>

    </div> -->

<div class="control-group">

    <label class="control-label" for="inputEmail">Question Type:</label>

    <div class="controls">

        <select id="qtype" name="question_tpye" required>

            <option value=""></option>

        </select>

    </div>

</div>

<?php

$query_question = mysql_query("select * from question_type")or
die(mysql_error());
```



```

while($query_question_row = mysql_fetch_array($query_question)){

?>

<option value="<?php echo $query_question_row['question_type_id']; ?>">

<?php echo $query_question_row['question_type']; ?></option>

<?php } ?>

</select>

</div>

</div>

<div class="control-group">

<label class="control-label" for="inputEmail"></label>

<div class="controls">

<div id="opt11">

A: <input type="text" name="ans1" size="60"> <input name="answer"
value="A" type="radio"><br><br>

B: <input type="text" name="ans2" size="60"> <input name="answer"
value="B" type="radio"><br><br>

C: <input type="text" name="ans3" size="60"> <input name="answer"
value="C" type="radio"><br><br>

D: <input type="text" name="ans4" size="60"> <input name="answer"
value="D" type="radio"><br><br>

```

```
</div>
```

```
<div id="opt12">
```

```
<input name="correctt" value="True" type="radio">True<br /><br />
```

```
<input name="correctt" value="False" type="radio">False<br /><br />
```

```
</div>
```

```
</div>
```

```
</div>
```

```
<div class="control-group">
```

```
<div class="controls">
```

```
<button name="save" type="submit" class="btn btn-info"><i class="icon-  
save"></i> Save</button>
```

```
</div>
```

```
</div>
```

```
</form>
```

```
<?php
```

```
    if (isset($_POST['save'])){\n
```

```
        $question = $_POST['question'];  
        $points = $_POST['points'];  
        $type = $_POST['question_tpye'];  
        $answer = $_POST['answer'];\n
```

```
        $ans1 = $_POST['ans1'];  
        $ans2 = $_POST['ans2'];  
        $ans3 = $_POST['ans3'];  
        $ans4 = $_POST['ans4'];\n
```

```

if ($type == '2'){

mysql_query("insert into quiz_question
(quiz_id,question_text,date_added,answer,question_type_id)

values('$get_id','$question',NOW(),''.$_POST['correctt'],'',$type)")or
die(mysql_error());
        }else{

mysql_query("insert into quiz_question
(quiz_id,question_text,date_added,answer,question_type_id)

values('$get_id','$question',NOW(),'$answer','$type')")or die(mysql_error());

$query = mysql_query("select * from quiz_question order by quiz_question_id
DESC LIMIT 1")or die(mysql_error());

$row = mysql_fetch_array($query);

$quiz_question_id = $row['quiz_question_id'];

mysql_query("insert into answer (quiz_question_id,answer_text,choices)
values('$quiz_question_id','$ans1','A')")or die(mysql_error());

mysql_query("insert into answer (quiz_question_id,answer_text,choices)
values('$quiz_question_id','$ans2','B')")or die(mysql_error());

mysql_query("insert into answer (quiz_question_id,answer_text,choices)
values('$quiz_question_id','$ans3','C')")or die(mysql_error());

mysql_query("insert into answer (quiz_question_id,answer_text,choices)
values('$quiz_question_id','$ans4','D')")or die(mysql_error());

        }

?>

<script>

window.location = 'quiz_question.php<?php echo '?id='.$get_id; ?>'

</script>

<?php

}

?>

```

</div>

</div>

</div>

<!-- /block -->

</div>

</div>

</div>

<script>

```
jQuery(document).ready(function(){

    jQuery("#opt11").hide();
    jQuery("#opt12").hide();
    jQuery("#opt13").hide();

    jQuery("#qtype").change(function(){

        var x = jQuery(this).val();

        if(x == '1') {

            jQuery("#opt11").show();
            jQuery("#opt12").hide();
            jQuery("#opt13").hide();

        } else if(x == '2') {

            jQuery("#opt11").hide();
            jQuery("#opt12").show();
            jQuery("#opt13").hide();

        } else {

            jQuery("#opt11").hide();
            jQuery("#opt12").hide();
            jQuery("#opt13").hide();

        }

    });

});
```

</script>