



***COMPUTER ARCHITECTURE AND ORGANIZATION
NOTES FOR SEMESTER ONE STUDENTS***

by

NURRUL DURATHON NASIHIN BINTI ABD LATIF

AM1809004511

A project proposal

Submitted to

MISS SHUHADAH BINTI OTHMAN

Faculty of Computing & Multimedia

Kolej Universiti Poly-Tech MARA

0720

Contents

1.0 Introduction	3
2.0 Problem Statements	5
3.0 Project Objectives	6
4.0 Project Scope	7
5.0 Target User	10
6.0 Project Requirements	11
7.0 Methodology	13
8.0 Conclusion.....	15
9.0 Gantt Chart.....	17
10.0 Reference.....	18

1.0 Introduction

The Computer Organization and Architecture Notes is an application that is provided to students for accessing notes. This application is an educational application developed for students that provides materials to help students complete their assignments and study for examination. The type of system that is used to make this application is mobile application or most commonly known as an app which is a type of application software designed to run on mobile devices. As stated in Wikipedia, originally, apps were intended for productivity assistance such as emails, calendars and calculator but because of high demand from the public, there is a rapid expansion of apps in other areas such as mobile games, GPS and location-based services, order-tracking, and ticket purchases. There are now millions of apps available for users to install from application distribution platforms which are operated by the owners of the mobile operating systems which are Play Store and Apps Store for Android and iOS users respectively.

This mobile application can be used to access notes for Computer Organization and Architecture course from Chapter 1 to Chapter 6 and other learning materials which include tutorials and forums. The notes are categorized into three types which are short texts, mind maps and flashcards which include other extra features such as toolbar for highlighting notes, add extra notes and use sticky notes that could help to study and to do revision. After the end of every chapter, there will be a quiz that the students can take to recap the lessons that they have learnt. The quiz can also be use by students to do revision before examination. Next, tutorials from Chapter 1 to Chapter 6 are also included to let the users familiarized with the examination questions. Besides that, the forum is also provided to let the users of this application to start a discussion with their classmates or students from other sections on a topic related to the Computer Organization and Architecture course. In this forum, users can also ask for help regarding their assignments and tasks. This forum is public and open to everyone. Therefore, anyone can submit their answers to any questions asked which will increase the number of engagement and at the same increase the understanding and knowledge of a certain topic.

The users of this application is the Semester 1 students of Kolej Universiti Polytech MARA Kuala Lumpur who will be taking the Computer Organization and Architecture course. This application will be developed by using ionic framework, which is a platform that uses HTML, PHP and Javascript to code. For the database, MySQL will be used to store all the data.

Students and notes are two things that is inseparable because students require notes to study and learn a particular subject. According to commeglom.com, this application is important because in this modern era, a lot of students prefer to have digital notes rather than physical notes. Unfortunately, most of the online learning platforms nowadays are humdrum and do not meet the student's requirements including the online learning platform in Kolej Universiti Polytech MARA Kuala Lumpur. Due to the lack of features and student's needs in an application, many students are uninterested to browse and read the notes provided in the online learning system. Therefore, to avoid the students from not reading their notes as well as feeling monotonous while browsing, a better platform of online learning application is needed to gain the interest of students. Next, this application is important because students often find themselves slacking off while studying and this is because the students have a difficulty in reading a long text of notes or they lose interest. Since there are different types of learners, different kind of notes should be implemented. To further elaborate, to not let the students lose interest in studying, creative and interesting notes are provided in the application. This is because reading notes becomes easier and not boring when it is included with pictures and have many variety of colors.

For the current situation, students in Kolej University Polytech MARA uses OLES to access their notes. OLES does not have any other features except for providing notes to students, where they need to download the notes beforehand and it is a hassle to do that. Moreover, OLES requires the students to open it through browser which will take time especially when the internet connection is slow. Compared to a web page, accessing the notes through a mobile application is quicker as it is only one click away that will contribute to a delightful user experience.

2.0 Problem Statements

2.1 Students having a hard time to stay focus while reading notes

Notes that are given by lecturers through PowerPoint are very plain and boring. Therefore, students find it hard and become unmotivated to read the notes. Besides that, texts that are too long make the readers struggle to understand the texts and their eyes and brains get exhausted to even continue reading. Most students prefer short notes that have been summarized and are easy to read. To attract students' attention, notes with visual, and colorful texts are provided.

2.2 Lack of communication between students

Students nowadays rarely discuss and communicate with each other which result in the lack of critical thinking skills. As a Computer Science student, critical thinking is very important in identifying a problem and solving it. Students should be able to communicate with their classmates or friends from other sections so that they could learn from another person's experience or seek help if they have any problems regarding their studies.

2.3 Students use print out notes for learning

Students would usually print out the notes that lecturers have given for the lessons in class. This will not only waste the students' money, but it will also waste their time as they need to print out notes for new topics every week. By using print out notes, there might be situations where the students forget to bring it to class, lost the notes or the notes getting wet and dirty.

3.0 Project Objectives

3.1 To make students interested in reading notes

The notes that are provided in the Computer Organization and Architecture Notes application are categorized into 3 types which is short text, mind map and flashcard. In addition, the notes are made to be colorful, simple and contain a lot of images. Therefore, the notes in this application are suitable for all type of learners. Students will find it exciting and enjoyable to read notes.

3.2 To encourage students to participate in group discussions

Discussions between students are important as it could help the students to receive new knowledge and information. Group discussions can also help students to improve their communication skills which is essential for the successful future careers of the students. Besides that, by joining a group discussion, it could help students to open up their mind and increase their creativity due to the information sharing session by students.

3.3 To provide a platform that allows students to have access to notes

Having a platform where students can access notes is very beneficial for the students. They could access their notes anytime and at any place. Besides that, they do not have to carry a lot of files which contain their notes and this could help them relieve the burden off of their shoulders from carrying heavy bags.

4.0 Project Scope

Scope is all the work required and the only work required to complete the project successfully. Scope is primarily concerned with defining and controlling what is and is not included in the project.

4.1 Product Scope

Product scope shows the features and functions that characterize the product, service or result. Product scope is more oriented toward functional requirements.

4.1.1 Application Scope

Application scope describes the current system that the required application is expected to interfere with.

4.1.1.1 Provide notes for students

Students can access their Computer Organization and Architecture notes through this mobile application. Students can also use some extra features for the notes such as the highlighter and the sticky notes.

4.1.1.2 Students can do quizzes from Chapter 1 to Chapter 6

Quizzes are also provided to students at the end of every chapter. The quizzes provided can help students to have better understanding towards the topics that they are studying. Students can review the quizzes back when they want to study for tests or examinations.

4.1.1.3 Tutorials are provided for students

Students can find the tutorials for Chapter 1 to Chapter 6 in the application. The tutorials can be done within the application or the students can download the tutorials.

4.1.1.4 Students can join group discussions through the forum

There is a forum in this application where students can have discussions with each other. Students can discuss about their assignments, tasks and get more ideas for their projects.

4.1.2 Application Requirement

Application requirement identifies the functionality that is needed by a system in order to satisfy user's needs.

4.1.2.1 Requires MySQL database

The database that is used to make this application is MySQL database. MySQL database is used for a wide range of purposes including data storing, e-Commerce and logging applications.

4.1.2.2 Need to use HTML, PHP, CSS and Javascript

4.1.2.2.1 HTML

The standard markup language for documents designed to be displayed in a web browser. It can be assisted by technologies such as Cascading Style Sheets and scripting language.

4.1.2.2.2 PHP

Scripting language that is used to develop an application

4.1.2.2.3 CSS

Style sheet language used for describing the presentation of a document written in markup language like HTML.

4.1.2.2.4 Javascript

A programming language for HTML. It enables interactive web pages and it is an important part of the application.

4.1.2.3 Requires installation of ionic framework

An open source UI toolkit for building performant, high quality mobile and desktop app using web technologies.

4.1.2.4 Requires Lenovo Ideapad 330

Windows 7 and above is required. Lenovo Ideapad 330 uses Windows 10 Home.

4.2 User Scope

4.2.1 Students

This application requires students to provide their full names, course names, semesters, usernames and passwords. Students need to register their accounts first in order to use this mobile application. After the registration, students can log into their accounts using the usernames and passwords that have been set.

5.0 Target User

5.1 Students

Students is the primary users of this mobile application. Students must log in first using their usernames and passwords before accessing the notes. When reading the notes, students can also use some extra features such as the highlighter and the sticky notes to add extra notes. There are also tutorials and quizzes provided to allow the students to do some exercises regarding the topics that they learnt.

6.0 Project Requirements

6.1 Software Requirements

6.1.1 Ionic Framework

a platform that is used for coding

6.1.2 MySQL database

MySQL database is used for a wide range of purposes including data storing, e-commerce and logging applications.

6.2 Hardware Requirements

6.2.1 Processor

Minimum of 1GHz

6.2.2 Memory (RAM)

Minimum of 2GB RAM

6.2.3 Monitor Resolution

1024 X 768

6.2.4 Hard Drive

Minimum of 20GB

6.2.5 Internet Connection

4Mbps or higher

6.2.6 Lenovo IdeaPad 330

6.2.6.1 Processor

Celeron Dual Core

6.2.6.2 Memory (RAM)

8GB RAM

6.2.6.3 Display Resolution

1366 x 768 Pixels

6.2.6.4 Hard Disk

128GB

7.0 Methodology

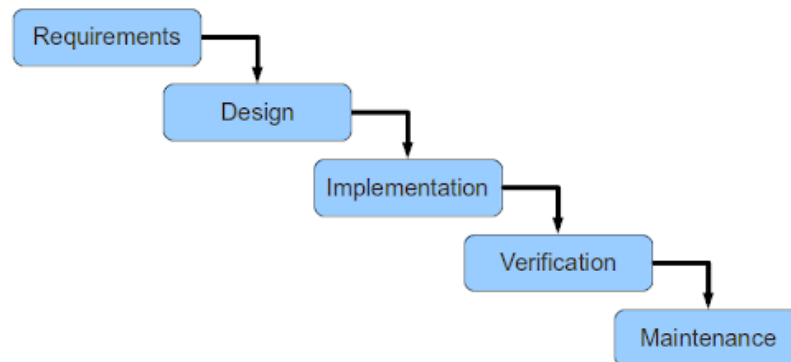


Figure 1: Waterfall Methodology

6.3 Requirement Gathering and Analysis

The first phase is gathering the requirement phase. All the requirement for the application is gathered from the users of this application and documented in a requirement specification document. This includes gathering all the software and hardware requirement too.

6.4 Design

This is the phase where the designing of the interfaces begins. The interfaces designed are the sign up and login page, home page, student profile page, the pages for notes, quizzes, tutorials and the forum. Some research has been made on how the pages for the forum should look like and it is implemented in the application. Besides that, the inspiration for the interface is also from bootstrap.

6.5 Implementation

During this phase, the code for this project is being written. The ionic framework is used as the platform for coding and HTML, PHP and Javascript as the programming language. The code that is written is based on the project requirement and design.

6.6 Verification

Once all the coding is done, the completed application is released and used by the users to test it. The users will review the application to make sure it meets the requirement laid out at the beginning of the project. The users will find any problems and report it.

6.7 Maintenance

The users will use the application while the developers will keep on fixing bugs and other errors that occur on the application until the users are satisfied.

8.0 Conclusion

The title of this project is Computer Organization and Architecture Notes for the Semester 1 students. This is a mobile application that is used by the students of Kolej Universiti Polytech MARA. This application is an educational application where it enables the students to easily access notes and do revision through mobile devices. To make it fun and interesting to read notes, this application provides notes that are short and simple. Students can also highlight the notes using different colors, add extra notes or add sticky notes. Besides that, students can take quizzes at the end of every chapter. By taking these quizzes, students can identify the topics that they do not understand and motivate them to do revision. The tutorials will help students to have a better understanding of the lessons and help students to prepare for their examinations. Students can use the forum to have discussions with their friends. The discussions in the forum can be seen by every user. Thus, everyone has a chance to give their opinions.

The problems which cause the development of this application is that students are having a hard time focusing on reading notes. Students are easily distracted when they are uninterested with what they are doing. Next, there is a lack of communication between the students. Students will not be able to improve their thinking skills when they do not communicate with others. They will also lose the opportunity to socialize and make new friends. Lastly, students are still using print out notes. Print out notes are not the best kind of notes as the quality of printing is not very good and the writing are very small and not clear.

The objectives of this project include to make students interested in reading notes. Students do not like to read notes and that is why most of them do not excel in their examination. Next, to encourage students to participate in group discussions. When students participate in group discussions, it will help them to socialize with others and increase their thinking skills. Last but not least, to allow students to have a platform to access notes.

Next, project scope is divided into two which is product scope and user scope. Product scope is categorized into application scope and application requirement. The application scope explains on what an application can do while application requirement explains the software and hardware that are required. The application scope for this project is to provide notes for students, to allow students to do quizzes from Chapter 1 to Chapter 6, to provide tutorials and to allow students to join group discussions through the forum. The application requirement are the MySQL database, that uses the language HTML, PHP, and Javascript, the installation of ionic framework and the use of Lenovo Ideapad 330.

The target user of this application is only the students of Kolej Universiti Polytech MARA who is in Semester 1 of the Faculty of Computing and Multimedia.

To develop this application, hardware and software are required. The software requirement is the ionic framework which is a platform for coding and MySQL database used for a wide range of purposes including data storing, e-Commerce and logging applications. The requirement for hardware is processor with minimum of 1 GHz, 2 GB Memory (RAM), 1024 x 768 or higher monitor resolution, hard drive with minimum of 20 GB and the internet connection speed must be 4Mbps or higher. As for the hardware, it uses Lenovo Ideapad 330.

For this project, the waterfall methodology is used. The reason why the waterfall methodology is used is because the waterfall model works well with a small project where the requirement is clear and very well understood. In this methodology, there are five phases which are requirement, design, implementation, verification and maintenance.

9.0 Gantt Chart

[illegible]

10.0 Reference

- 10.1 ProjectManager.com. 2020. Waterfall Methodology - Tools and Strategies - ProjectManager.com. [ONLINE] Available at: <https://www.projectmanager.com/software/use-cases/waterfall-methodology>. [Accessed 31 July 2020].
- 10.2 SDLC - Waterfall Model - Tutorialspoint. 2020. SDLC - Waterfall Model - Tutorialspoint. [ONLINE] Available at: https://www.tutorialspoint.com/sdlc/sdlc_waterfall_model.htm. [Accessed 31 July 2020]
- 10.3 agile.com. 2020. The Ultimate Guide to Educational App Development | Agile app development company blog . [ONLINE] Available at: <https://agile.com/en/blog/the-ultimate-guide-to-educational-app-development>. [Accessed 31 July 2020]
- 10.4 Wikipedia. 2020. eNotes - Wikipedia. [ONLINE] Available at: <https://en.wikipedia.org/wiki/ENotes>. [Accessed 31 July 2020].
- 10.5 Techopedia.com. 2020. What is a Mobile Application? - Definition from Techopedia. [ONLINE] Available at: <https://www.techopedia.com/definition/2953/mobile-application-mobile-app>. [Accessed 31 July 2020]
- 10.6 BeesApps - The Smart Collaborative Application to boost your business productivity. 2020. Digital Notes VS Handritten Notes. [ONLINE] Available at: <https://www.beesapps.com/en/the-lab-blog/digital-notes-vs-handritten-notes/>. [Accessed 31 July 2020].