**BIT302**

**SOFTWARE ENGINEERING**

**Assignment 1**

**Project Proposal**

**“Web-based Information System for MicroHousing System in Kuala Lumpur”**

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Introduction

In the last decade, the Internet and World Wide Web has been developed rapidly and gained so much popularity due to its usefulness in all aspect of our life. Almost all businesses nowadays are web – enabled to improve and enhance their operations. By taking advantage of web technologies, an organization can reach out to customers and provide them with not only general information about its products or services but also the opportunity of performing interactive business transactions [1].

Information system is an example of business needs that have migrated to the web as a web based application. A web-based application is a software package that can be accessed through the web browser. The software and database reside on a central server rather than being installed on the desktop system and is accessed over a network [2].

Information system itself can be described from two different perspectives: one that relates to the system’s purposes; the other relates to the system’s structure. It can be said that an information system is a technologically implemented medium for the purpose of recording, storing, and disseminating linguistic expressions as well as for the supporting of inference making. Structure-wise, an information system consists of a collection of people, processes, data, models, technology and partly formalized language, forming a cohesive structure that serves some organizational purpose or function [3].

Project Background

As what has been mentioned before, many organizations are using the web to improve their services to the customers. School is an example of organization that often uses web technologies. Many schools have a website for visitors to see information or news related to the school programs and activities. However, there aren’t many schools that has their own academic information system for the students.

In most schools, mark list of students is recorded in very simple form, for example in Microsoft Excel. Students can only see their marks through report cards that given to them only once every semester. Using Excel is still important to put formula and calculate final marks for students, but a report card is very traditional and cannot be accessed any time.

Because of that reason, we have chosen to create a web based academic information system for a junior high school. Through the system, we are hoping that students can check their marks for any subject anytime anywhere. Students can also see the summary of their marks and from previous years. For example, a student is now in 9th grade, he/she can see marks details for the current semester, but can only see the summary of marks when he/she was in 7th and 8th grade.

Additionally, students can check for recent announcement through the web application, so that they will not miss any information about the school upcoming activities. Students can also check their schedule and teacher information. Teacher information that can be viewed include address and phone number, to make it easier for students or parents to contact the teachers if there is any issue.

To build this system, we have to know what subjects are generally taught in junior high school. We also have to know how many tests and marks are given to a student in a semester, and what is the formula to calculate the final mark. This academic system will also show personal information of the student, so we have to know what kind of information will be included (student ID, student name, student address, etc.).

We will put the data of marks and personal information in a database and it will be handled by an admin. The admin will be given password to access the system to add, delete and update the data. Each student will get a user ID and password to see their own data and information, and the contact details of teachers in their school. The desired outcome will be a web – based academic information system that allows student to see their information anytime.

Project Aims

* To change the traditional way of showing marks to students from paper – based report card to online information system
* To ease communication between students and teachers, by providing them with teacher contact details
* To provide students with latest announcement from the school so that they will not miss any school’s activity
* To design a web based application which connect database to the website so that data can be updated anytime and information can be viewed anytime anywhere

Project Objectives

1. Conducting a research about how many and what subjects are generally taught in junior high school
2. Determining how many tests are being given to student per subject per year to know how many marks will be entered in the database
3. Select tools and programming language that are most suitable to develop an information system
4. Produce documents that are necessary for the completion of this project
5. Decide how the user interface will be designed and determine the color scheme
6. Creating database and input all the data that are needed
7. Integrating database and web design to produce a complete application

Project Scope

|  |
| --- |
| **Project Title:** Web based Academic Information System  **Date:** 27th October 2017  **Prepared by:** Lovely, Project Team Leader, lovelyzheng98@gmail.com |
| **Project Summary and Justification:**  This information system is made to help students in junior high school to see teachers’ information, mark details, schedule and announcements. Through the system, we are integrating database system and website design. The system will be managed by an admin to add, delete and update data. As a result, students don’t have to wait until the end of the semester to see their marks in form of paper – based report cards. Students also do not have to depend on hard – copied schedule to check their subject time table. |
| **Product Characteristics and Requirement:**  1. Do some research on junior high schools that have applied web based academic information system for their students  2. Providing content that suitable to solve problems that students have. The web based application should be informative and helpful by showing all data that are students need to see.  3. The web application will be tested with different browsers to make sure it is accessible and does not have any display problem.  4. All the link will be tested, to see if the link work properly or not. It will be tested once a week. |
| **Summary of Project Deliverables**  **Project management-related deliverables:** Project aims, project objectives, scope statement, WBS, schedule, cost baseline, requirements specification document, design and testing documentation, web based academic information system that is useful and can work, final project presentation, and other documents required to manage the project.  **Product-related deliverables:**   1. Web based academic information system that can be accessed by any registered student in a school 2. The content of the web allows student to know the marks that have obtained for the current semester and parents can see their child’s marks. 3. Ability to manage relationship with clients, which in this project are school and its students by answering their questions related to the system, to avoid confusion and misunderstandings. |
| **Project Success Criteria:** Our goal is to complete this project within three months. The project will be considered successful if it meets all of the product characteristic and requirement listed above, and does not misaligned with the project scope. The project team will succeed if they can follow team contract and stay on track of WBS and Gantt Chart that has been created. If the information system for junior high school is successful and very helpful for students, similar system can be developed and applied for primary and high schools too. |

Project Schedule

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Schedule** | **Start Date** | **End Date** | **Estimate Days** | **Responsible** |
| **Initiating** | | | | |
| Identifying Topic | Mon 16/10/17 | Mon 16/10/17 | 1d | All |
| Conducting Research | Tue 17/10/17 | Fri 20/10/17 | 4d | All |
| Identifying Project Aims and Objectives | Mon 23/10/17 | Tue 24/10/17 | 2d | All |
| Identifying Non – Functional and Functional Requirements | Wed 25/10/17 | Thu 26/10/17 | 2d | All |
| Complete Initiating Task | Thu 26/10/17 | Thu 26/10/17 | 0d | All |
| **Planning** | | | | |
| Develop Scope Statement | Fri 27/10/17 | Mon 30/10/17 | 2d | Lovely |
| Develop WBS | Tue 31/10/17 | Tue 31/10/17 | 1d | Denny |
| Create Project Schedule | Wed 01/11/17 | Wed 01/11/17 | 1d | Denny |
| Baseline Gantt Chart | Thu 02/11/17 | Thu 02/11/17 | 1d | Denny |
| Determine Development and Demonstration Platform | Fri 03/11/17 | Mon 06/11/17 | 2d | All |
| Develop Risk Management Plan | Tue 07/11/17 | Tue 07/11/17 | 1d | Lovely |
| Develop Use Case Diagram and Use Cases | Wed 08/11/17 | Thu 09/11/17 | 2d | All |
| Develop Expanded Use Cases | Fri 10/11/17 | Mon 13/11/17 | 2d | Denny |
| Develop Analysis Class Diagram | Tue 14/11/17 | Tue 14/11/17 | 1d | Lovely |
| Develop Sequence Diagram | Wed 15/11/17 | Wed 16/11/17 | 2d | Lovely |
| **Executing** | | | | |
| Collecting Data | Thu 02/11/17 | Tue 07/11/17 | 4d | All |
| Inputting Data to Database System | Thu 02/11/17 | Tue 07/11/17 | 4d | All |
| Designing the Web Page | Wed 08/11/17 | Fri 24/11/17 | 13d | All |
| Integrating the Database with the Web Design | Mon 27/11/17 | Mon 18/12/17 | 16d | All |
| Produce Prototype #1 | Mon 18/12/17 | Mon 18/12/17 | 0d | All |
| Improve and Update the System | Tue 19/12/17 | Tue 26/12/17 | 4d | All |
| Produce Complete System | Tue 26/12/17 | Tue 26/12/17 | 0d | All |
| **Monitoring and Controlling** | | | | |
| Update Gantt Chart | Mon 27/11/17 | Mon 27/11/17 | 1d | Denny |
| Testing Prototype #1 | Tue 19/12/17 | Wed 20/12/17 | 2d | All |
| Testing the Complete System | Tue 26/12/17 | Wed 27/12/17 | 2d | All |
| **Closing** | | | | |
| Presentation and Demonstration for Prototype #1 | Thu 21/12/17 | Thu 21/12/17 | 0d | All |
| Presentation and Demonstration for the Complete System | Thu 28/12/17 | Thu 28/12/17 | 0d | All |

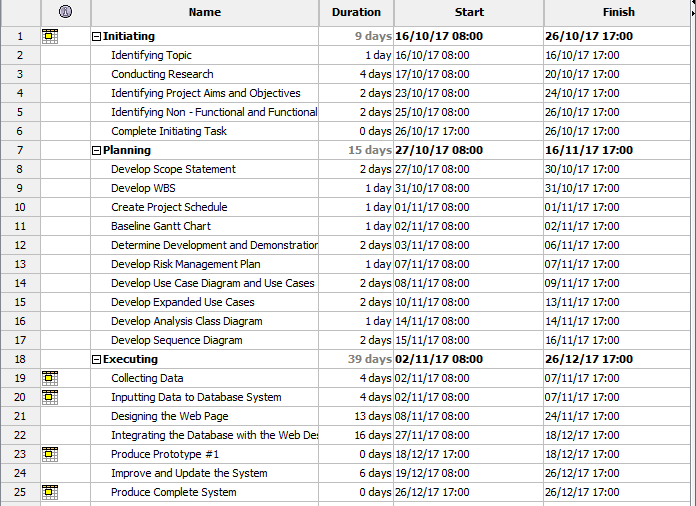
Work Breakdown Structure

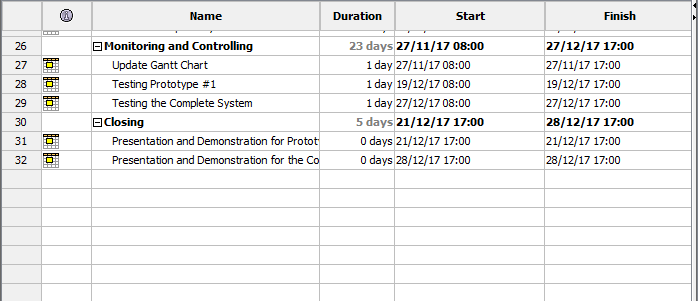
1. Initiating Tasks
   1. Identifying Topic
   2. Conducting Research
   3. Identifying Project Aims and Objectives
   4. Identifying Non – functional and Functional Requirements
   5. Complete Initiating Task
2. Planning Tasks
3. Scope Statement
4. WBS
5. Project Schedule
6. Baseline Gantt Chart
7. Development and Demonstration Platform
8. Risk Management Plan
9. Use Case Diagram and Use Cases
10. Expanded Use Cases
11. Executing Tasks
12. Collecting Data
13. Inputting Data to Database System
14. Designing the Web Page
15. Produce Prototype #1
16. Produce Complete System
17. Monitoring and Controlling Tasks
18. Update Gantt Chart
19. Testing Prototype #1
20. Testing the Complete System
21. Closing
22. Presentation and Demonstration for Prototype #1
23. Presentation and Demonstration for the Complete System

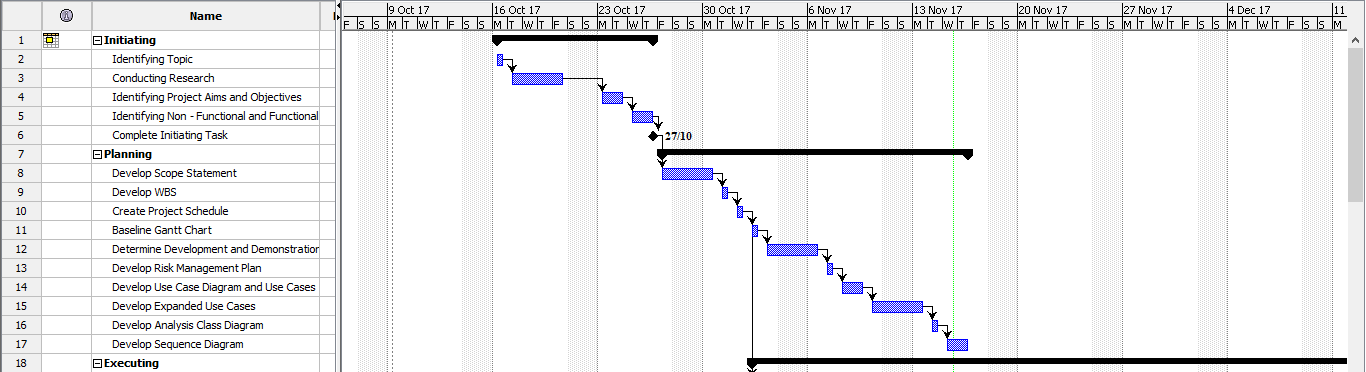
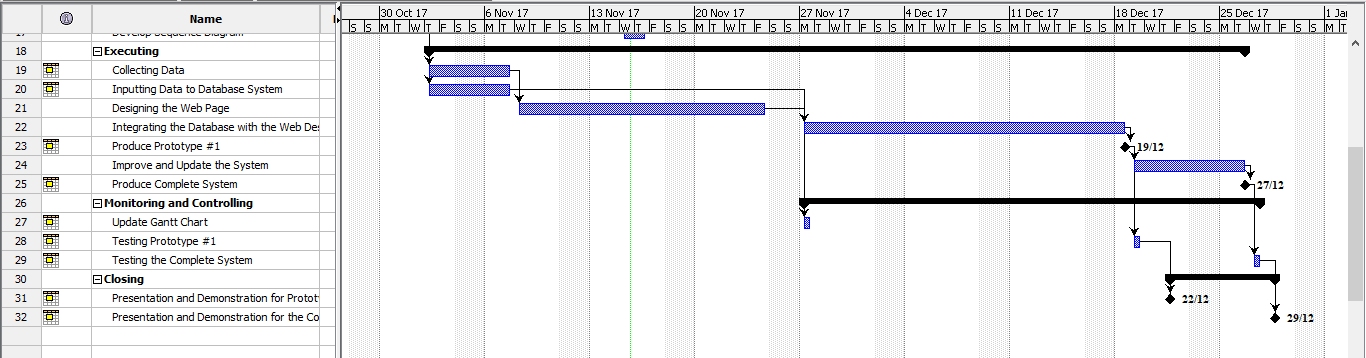
Milestones

* Complete Initiating Task
* Produce the Prototype #1
* Presentation and Demonstration for Prototype #1
* Produce the Complete System
* Presentation and Demonstration for the Complete System

Gantt Chart







Development Platform

**Software/tools:**

1. **Microsoft Excel**

We will use Excel to store data and formula that we have collected before inputting them to database in MySQL.

1. **Microsoft Word**

We will use Word to produce documents and reports related to this project.

1. **Microsoft Power Point**

Power Point will be used to create presentation to show the design of our system and what went right or wrong during the development of the system.

1. **StarUML**

This is an open – source tool for Unified Modelling Language diagrams and modelling. We will use this tool to create use case diagram, class diagram and sequence diagram.

1. **MySQL**

We choose MySQL as our relational database management system because it is open – source and has many features to help us managing our database.

1. **Notepad++**

Notepad++ will be used to write our html codes to design the interface for our web application.

1. **phpMyAdmin**

**We choose this tool because it is open – source and it can be connected to our database in MySQL. phpMyAdmin** provides a convenient graphical user interface to work with and it also has all common functions that we need to develop a MySQL-based application or website.

1. **Adobe Photoshop**

Photoshop is suitable to manipulate and edit images that will be used in our web application design.

1. **Project Libre**

Project Libre is an open – source project management software that we use to create Gantt chart which help us in scheduling works for this project.

**Hardware:**

1. **Laptop**

All the for developing this application will be done using laptops that run on Windows operating system.

Demonstration Platform

**Software:**

1. **Web browser – Google Chrome and Mozilla Firefox**

Because we are developing web based application, this application will be opened through a web browser. We choose Google Chrome and Mozilla Firefox to open our application because those are the most common browsers used nowadays. We also want to make sure our design and the data being displayed are consistent in both browsers.

**Hardware:**

1. **Laptop and PC**

Our application is intended to be opened through web browsers from laptop and personal computer.

Risk Management Plan

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Risk Management Plan for Development of Web Based Academic Information System | | | | | | | | | | | |
| Prepared by: Lovely Date: Monday 30th October 2017 | | | | | | | | | | | |
| No | **Rank** | **Risk** | **Description** | **Category** | **Root Cause** | **Triggers** | **Potential Responses** | **Risk Owner** | **Probability (1 – 10)** | **Impact** | **Status** |
| 1 | 1 | Project would not be done on time | Team members could overwhelm by the tasks and might not finish them all on time | Process Risk | Not enough time to complete the project | One or more tasks might take longer than expected to complete | Follow the project schedule and do better time management to avoid tasks being unfinished after the due date | Lovely  Denny | 4 | High | This issue has not happened yet and so far tasks are being done on time. |
| 2 | 2 | There is possibility that the system will have some malfunction | The system might have some errors and crash, or cannot perform its function correctly | System Risk | There are errors during the development process | Team members do not check the system carefully during the testing stage | Test each function of the system thoroughly to ensure system crash would not happened | Lovely  Denny | 3 | High | This issue has not happened yet. |
| 3 | 3 | The team may not understand all the requirements to develop and complete the system | When requirements are not fully understood, the system that is produced may not as useful as what was planned | Process Risk | Lack of research and understanding about the subject | Not enough time to carry out research | Spare some times to conduct more research about similar application to learn about requirements that needed to be fulfill | Lovely | 3 | Medium | Team members have done more research and have understood what are the requirements to complete the system. |
| 4 | 4 | Lack of communication that may lead to misunderstanding between team members | Tasks that are not clearly divided and communicate may cause misunderstanding and conflict | People Risk | Each team member is busy with other activities | Have different schedules which make it difficult to have same spare time to meet and communicate about the project | Do online discussion if it is not possible to physically conduct a meeting, make a meeting schedule from the beginning of the project | Denny | 3 | Medium | This issue has not happened yet and so far team members communicate each other clearly. |

References

[1] Worwa, K., Stanik, J. (2010, December). Quality of Web-based information systems. Journal of Internet Banking and Commerce, vol. 15, no.3. Retrieved from <http://www.icommercecentral.com/open-access/quality-of-webbased-information-systems.php?aid=38469>

[2] Web Based Application. Retrieved from <http://www.netsity.com/webbasedapplication.htm>

[3] Fuad, S. (2011). Information Systems: Definitions and Components [PDF]. Retrieved from <http://www.uotechnology.edu.iq/ce/Lectures/SarmadFuad-MIS/MIS_Lecture_3.pdf> (University of Technology – Iraq)