Software Project Management

SOFE 3490U

Lab Instructor: Sifatul Mostafi

Lab #4 - Project Management

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Group 8

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Introduction

With any project, it is important that a thorough and effective plan is established before the commencement of any work. Doing so allows for the entire execution to remain organized and sturdy, from the entire development process all the way to the deployment of the final product. Going into a project blindly or with insufficient planning will only complicate the process, as specific activities that must be completed as well as the time in which it must be finished will not be known. This leads to additional stress and confusion that could have been avoided, as well as unsatisfied stakeholders. As well, if a final product is arrived at, not accounting previously for potential risks could lead in the product not being as successful as initially hoped for, resulting in all the effort and time put into development being a waste. By establishing initially the activities required in the development of a project and their associated time needs, all resources that must be utilized, and potential risks with corresponding countermeasure tasks, project execution will have a flow that is much more structured and seamless, leading to greater chances of a successful project.

Part 1 - Risks and Countermeasure Activities

- Stakeholders are not content with how the school management system looks and operates.
    - ***Countermeasure Task***: Conduct regular meetings and consistent communication with stakeholders, that show the progress of the product before the final form is completed.
- Students, alumni, professors, and staff are still leaning towards other methods of communication that are not the school management system's messaging feature.
    - ***Countermeasure Task***: Implement features that differentiate the messaging system from other communication methods.
        - Attaching different file types of varying sizes
        - Audibly create messages
        - Audio message capability
        - Large group chat creation
- Amount of initial system users is tremendously low.
    - ***Countermeasure Task***: Plan and conduct an advertising campaign.
        - Social media posts and emails
        - Posters on the school campus
        - Website
- Hackers attack the school management system.
    - ***Countermeasure Task***: Securely encrypt data, and implement alerts that detect possible signs of security attacks.
- School management system development falls behind schedule.
    - ***Countermeasure Task***: Allocate appropriate time ranges for each task, that account for additional days that may be required.

Part 2 - Resources

Let's divide the project into three core phases: Requirements Analysis and Design, Development, and Testing and Deployment. As our organization consists of three individuals; Alexy, Calvin, and Rodney. As such, we will split up our resources to each task as shown below:

- Requirements Analysis and Design
  (Requirements Gathering and System Design lead by Rodney)

  - System Analyst: In charge of acquiring and documenting precise requirements from stakeholders, as well as creating the overall system architecture.
  - UI/UX Designer: Responsible for designing the user interface, wireframes, and layouts for the mobile application.

- Development
  (Frontend: Calvin, Backend: Alexy, Integration: Calvin)

  - Frontend Developer: Create mobile application interfaces for iOS and Android platforms.
  - Backend Developer: Create backend services and APIs for user authentication, profile management, class creation, and messaging.
  - Full Stack Developer: Responsible for integrating the frontend and backend.

- Testing and Deployment
  (Quality Assurance (QA) Team: Calvin and Rodney
  Documentation, Advertising, and Deployment: Alexy)

  - Quality Assurance (QA) Team: In charge of the unit and user acceptance testing (UAT) to assure product quality, as well as security testing.
  - Documentation Specialist: Responsible for creating user documentation and tutorials to help users navigate and understand the programme.
  - Advertising Campaign Manager: Responsible for the advertising campaign for this application that will take place close to its release.
  - DevOps Engineer: Responsible for managing the deployment process and ensuring the application is successfully deployed to the production servers / app stores.

Past Activity Diagram:

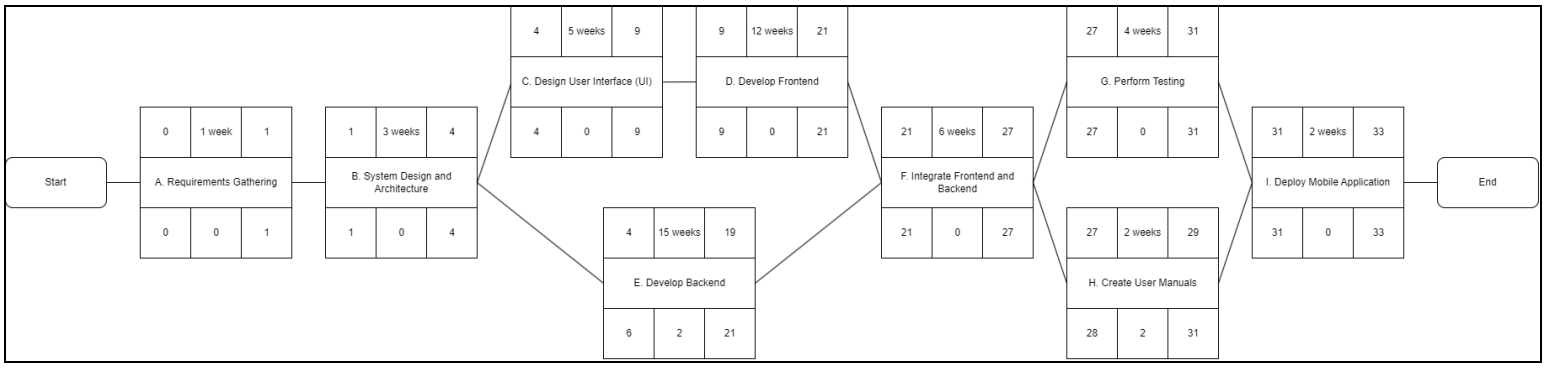

Figure 1: Activity Diagram created in Lab 3

We continued off of our previous work from the last lab and modified our scheduling accordingly with the following distributed tasks below:

Project Activities:

A. Requirements Gathering
- a. Description: Gather and document detailed requirements from stakeholders.
- b. Duration: 5 days
- c. This task will be completed by our System Analyst, Rodney

B. System Design and Architecture
- a. Description: Design the overall system architecture including frontend interfaces, backend services, and database schema.
- b. Duration: 12 days
- c. Dependencies: A - Requirements Gathering
- d. This task will be completed by our System Analyst, Rodney

C. Design User Interface (UI)
- a. Description: Create wireframes and layouts for the mobile application.
- b. Duration: 7 days
- c. Dependencies: B - System Design and Architecture
- d. This task will be completed by our UI/UX Designer, Rodney

D. Develop Frontend
- a. Description: Implement mobile application interfaces for iOS and Android platforms by using chosen frameworks.
- b. Duration: 13 days
- c. Dependencies: C - Design User Interface (UI)
- d. This task will be completed by our Frontend Developer, Calvin

E. Develop Backend
- a. Description: Develop backend services and APIs for user authentication, profile management, class creation, and messaging.
- b. Duration: 20 days
- c. Dependencies: B -System Design and Architecture
- d. This task will be completed by our Backend Developer, Alexy

F. Integrate Frontend and Backend

a. Description: Combine frontend and backend components to create a functional mobile application.
b. Duration: 6 days
c. Dependencies: D - Develop Frontend, E - Develop Backend
d. This task will be completed by our Full Stack Developer, Calvin

G. Perform Testing

a. Description: Conduct unit testing and user acceptance testing (UAT) to ensure quality as well as security testing.
b. Duration: 14 days (7 days for functionality testing and 7 days for security testing).
c. Dependencies: F - Integrate Frontend and Backend
d. This task will be completed by our Quality Assurance (QA) Team, Calvin and Rodney

H. Create User Manuals

a. Description: Develop user documentation and guides to help users navigate and understand the application.
b. Duration: 5 days
c. Dependencies: F - Integrate Frontend and Backend (Best to start the user manual creation process after the majority of the implementation tasks are completed)
d. This task will be completed by our Documentation Specialist, Alexy

I. Advertising Campaign

a. Description: Advertise the upcoming application through social media, emails, posters on campus, and promo websites.
b. Duration: 14 days (up until deployment)
c. Dependencies: H - Create User Manuals
d. This task will be completed by our Marketing Manager, Alexy.

J. Deploy Mobile Application

a. Description: Deploy the mobile application to the app stores.
b. Duration: 5 days
c. Dependencies: G - Perform Testing, H - Create User Manuals
d. This task will be completed by our DevOps Engineer, Alexy

Two activities have been changed after further revision to accommodate our risk countermeasure tasks.

- Testing has been split up to focus on two major points; the functionality of the application, and the security of the application and involved data.
- Advertising Campaign has been added to reduce the risk of low initial users on the platform.

The other three risk countermeasure tasks are also to be followed (or being followed, such as the allocating appropriate time ranges for each activity), but are not explicitly showcased through this view of the project.

Part 3 - Microsoft Project Professional

The.mpp file can be found at our GitHub repository
GitHub: https://github.com/SOFE3490-Group8-CRN74015/Lab4

Note: Three non-working days have been allocated and accounted for throughout this project's duration.

Snapshot of Project's Gantt Chart:

	Task Mode	Task Name	Duration	Start	Finish	Predece	Resource Names
1		Requirements Gathering	5 days	Mon 19-02-04	Fri 19-02-08		System Analyst
2		System Design and Architecture	12 days	Mon 19-02-11	Wed 19-02-27	1	System Analyst
3		Design User Interface (UI)	7 days	Thu 19-02-28	Fri 19-03-08	2	UI/UX Designer
4		Develop Frontend	13 days	Mon 19-03-11	Wed 19-03-27	3	Frontend Developer
5		Develop Backend	20 days	Thu 19-02-28	Wed 19-03-27	2	Backend Developer
6		Integrate Frontend and Backend	6 days	Thu 19-03-28	Thu 19-04-04	4,5	Full Stack Developer
7		**Perform Testing**	**14 days**	**Fri 19-04-05**	**Fri 19-04-26**		
8		Functionality Testing	7 days	Fri 19-04-05	Mon 19-04-15	6	Quality Assurance (QA) Team
9		Security Testing	7 days	Tue 19-04-16	Fri 19-04-26	8	Quality Assurance (QA) Team
10		Create User Manuals	5 days	Fri 19-04-05	Thu 19-04-11	6	Documentation Specialist
11		Advertising Campaign	14 days	Fri 19-04-12	Fri 19-05-03	10	Marketing Manager
12		Deploy Mobile Application	5 days	Mon 19-04-29	Fri 19-05-03	7,10	DevOps Engineer

Figure 2: Tasks Assignment

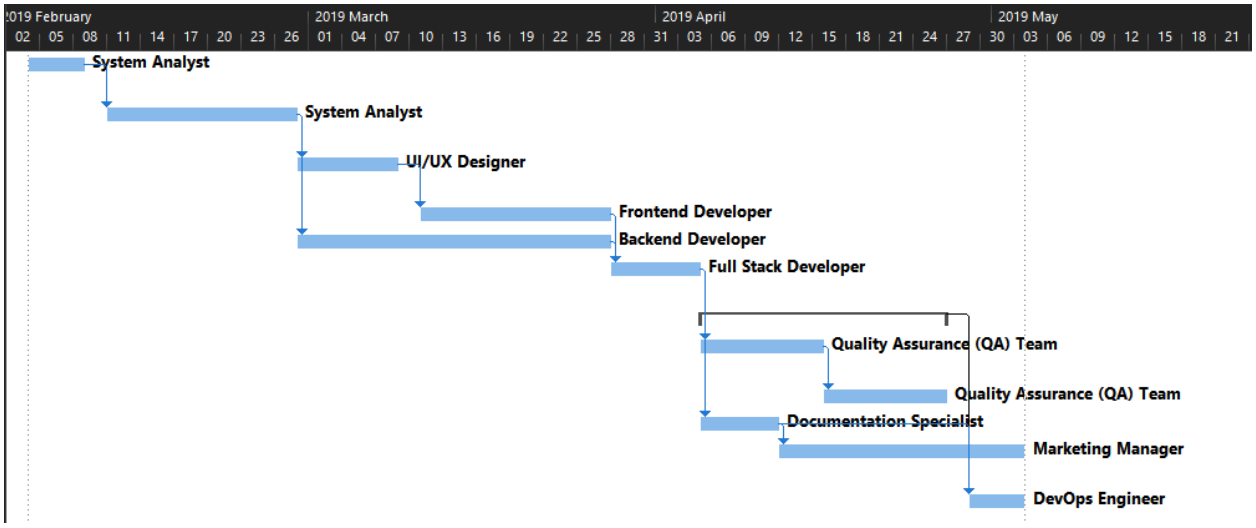

Figure 3: Gantt Chart

Timeline:

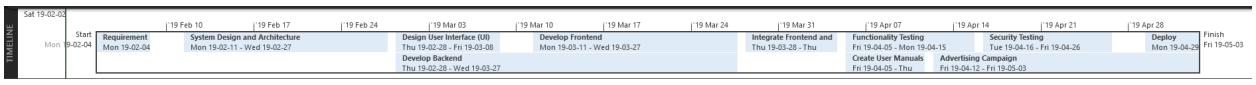

Figure 4: Timeline