
# SECD2613 - ANALISIS DAN REKABENTUK SISTEM (SYSTEM ANALYSIS AND DESIGN)

## SESSION 20232024/2

## Project Proposal


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GROUP NAME : BLACKBOX

SECTION : 01

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DATE : 18 APRIL 2024

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## 1.0 INTRODUCTION

We as undergraduate students specializing in Bioinformatics at University Teknologi Malaysia (UTM), In compliance with the stipulations of our academic curriculum, specifically the System Analysis & Design (SECD2613) course, we are tasked with undertaking a project to demonstrate our proficiency in this field of study. Our objective is to propose a comprehensive solution aimed at enhancing the management efficiency of a corporate entity while simultaneously addressing the operational challenges it faces.

## 2.0 BACKGROUND STUDY

WorkStudio is a renowned tech firm headquartered in Skudai, Johor Bahru, with a decade-long expertise in web development. Specializing in tailored website solutions, it offers businesses a chance to bolster their online presence. With a team of skilled developers and designers, WorkStudio ensures each site is user-friendly and visually captivating. Clients can choose from diverse templates, ensuring brand consistency and audience appeal.

Moreover, WorkStudio's websites are equipped with easy-to-use content management systems, enabling clients to update content in real-time. Alongside website development, the firm provides services like SEO, social media integration, and e-commerce functionality, ensuring optimal online performance. These solutions cater to businesses striving for digital success.

In conclusion, WorkStudio stands as a reliable partner for businesses seeking effective digital solutions. Its commitment to innovation and client satisfaction solidifies its position as a leader in the web development industry

## 3.0 PROBLEM STATEMENT

The efficiency of task management within educational institutions is crucial for professors and postgraduate students as they navigate the complexities of the publication and paper writing processes. However, the prevalent use of digital notepads and Excel spreadsheets for manual task management poses significant challenges, impacting accuracy, productivity, and collaborative efforts.

One of the primary drawbacks of relying on manual methods is the inefficiency and time consumption they entail. Maintaining and updating Excel spreadsheets or notepad programs requires considerable effort, diverting valuable time and attention away from academic pursuits. Juggling multiple tools simultaneously further exacerbates this inefficiency, hindering progress on important academic tasks.

Moreover, the absence of real-time collaboration mechanisms in manual systems presents a considerable obstacle to effective communication and coordination among stakeholders. Without the ability to collaborate in real-time, delays and unnecessary work often arise, impeding teamwork and overall productivity. This lack of synchronization can lead to disjointed efforts and missed opportunities for efficient collaboration.

Additionally, manual task management is inherently prone to errors, particularly within the fast-paced and demanding academic environment. Oversights such as ignored updates, mishandled document versions, and missed deadlines can compromise the accuracy and integrity of academic outcomes, potentially impacting scholarly reputation and credibility.

Accessibility is another critical issue associated with manual methods of task management. When essential documents and information are confined to local storage or inaccessible shared drives, communication barriers arise, impeding effective collaboration and information sharing among team members. This limitation hampers the seamless flow of information essential for successful academic endeavors.

Furthermore, as the volume and complexity of tasks increase, the limitations of manual approaches become more apparent. The lack of scalability inherent in manual methods makes them impractical for managing large-scale academic projects efficiently. To address these challenges, there is a pressing need for a systematic redesign of task management systems within academic environments.

A specialized task management system tailored to the specific requirements of postgraduate paper writing and publication efforts could significantly enhance academic efficiency and collaborative study. By addressing the inefficiencies, lack of collaboration, error-prone practices, limited accessibility, and poor scalability inherent in manual methods, such

a system could revolutionize task management within educational institutions, fostering a more productive and streamlined academic environment.

## 4.0 PROPOSED SOLUTION

To solve the problems with traditional academic task management, we suggest creating a web platform, called WorkStudio, designed for postgraduate students and lecturers. This platform combines user-friendly task organization, flexible scheduling, instant collaboration, and automated progress monitoring to simplify academic processes and boost efficiency.

The platform is built around a simple interface that makes it easy to create tasks, track progress, and work together. Users have the ability to quickly generate comprehensive lists of tasks, which include deadlines, priority rankings, and designated stakeholders. Categorization and tagging help with the smooth organization and handling of tasks for efficient navigation.

Automatic scheduling features update project timelines dynamically, guaranteeing precision and clarity in managing tasks. Real-time collaboration tools make it easy for team members to communicate, edit, leave comments, and receive notifications for immediate feedback on academic projects.

Automated progress tracking mechanisms make project management processes more efficient by automatically updating task statuses using user inputs or predefined triggers. Integrated communication channels improve collaboration by facilitating efficient sharing of information and cooperation among stakeholders.

WorkStudio provides personalized reminders and alerts to help users stay organized with upcoming deadlines and key milestones. While prioritizing accessibility, the website is responsive on all devices and browsers, with strong security measures protecting academic data.

### ***4.1 Feasibility Study*:**

#### 4.1.1 Technical Feasibility:

The platform shows high technical feasibility due to advancements in web technologies and skilled developers being readily available. Expertise in web development and database management is necessary for developing the platform, and both of these skills are easily obtainable. With the appropriate technical framework and resources in place, the platform can be efficiently constructed and implemented to fulfill user requirements.

4.1.2 Operational Feasibility:

The operational feasibility of the platform is an important consideration in its implementation and acceptance. A user-friendly design, thorough training materials, and continuous support are necessary for guaranteeing user acceptance. The platform ensures that it is useful and meets the needs of users by easily fitting into existing work processes.

4.1.3 Economic Feasibility:

Although the budget for this project and its possible expenses were not directly mentioned in the case study, we have prepared an estimated Cost Benefit Analysis to study its economic feasibility. Even though the early development expenses could need a significant amount of money, the long-term advantages outweigh the cost. Ongoing development and updating costs can be compensated for through possible earnings flow from subscription-based systems or partnerships with educational institutions. With a profitability index of 1.07, the project clearly shows a little gain which results as a successful and good investment.

To sum up, the proposed online task management platform, WorkStudio, offers a creative solution to the problems associated with traditional academic assignment management. It makes academic endeavors more successful for professors and graduate students by enhancing productivity, effectiveness, and cooperation.

| **Assumptions** | |
|---|---|
| Discount rate | 8% |
| Sensitivity factor (costs) | 1.1 |
| Sensitivity factor (benefits) | 1.2 |
| Annual change in production costs | 2% |
| Annual change in benefits | 3.5% |

| **Estimated costs** | |
|---|---|
| **Development costs** | |
| Hardware | RM 3000 |
| Software development | RM 2000 |
| **Production costs** | |

| | |
|---|---|
| Cloud service | RM 1000 per year |
| IS Salaries | RM 3000 per year |
| Advertisement/Marketing | RM 3000 per year |
| Maintenance | RM 2000 per year |

| **Estimated benefits** | |
|---|---|
| Increase Users | RM 4 500 |
| Savings | RM 7 200 |

| **Costs** | **Year 0** | **Year 1** | **Year 2** | **Year 3** |
|---|---|---|---|---|
| Development cost | | | | |
| Hardware | 3300 | | | |
| Software development | 2200 | | | |
| **Total** | 5500 | | | |
| **Production cost** | | | | |
| Cloud service | | 1100 | 1122 | 1144 |
| IS Salaries | | 3300 | 3366 | 3433 |
| Advertisement/Marketing | | 3300 | 3366 | 3433 |
| Maintenance | | 2200 | 2244 | 2289 |
| **Annual Production Cost**<br>**(Present Value)** | | 9900<br>9167 | 10098<br>8657 | 10299<br>8176 |
| **Accumulated Costs** | | 14667 | 23324 | 31500 |

| **Benefits** | **Year 0** | **Year 1** | **Year 2** | **Year 3** |
|---|---|---|---|---|
| Increase Users | | 5400 | 5589 | 5785 |
| Saving | | 8640 | 8942 | 9255 |
| **Annual benefits** | | 14040 | 14531 | 15040 |
| **Present Values** | | 13000 | 12458 | 11939 |
| **Accumulated Benefits** | | 13000 | 25458 | 37397 |
| **Gain or Loss** | | (1667) | 2134 | 5897 |
| **Profitability index** | 1.07 (Justification: The profitability index is more than 1.0 so, this shows that it is a good investment) | | | |

## 5.0 OBJECTIVES

1. The objective of our initiative is to promote cooperation by motivating members to work together to solve problems and come up with creative solutions.
2. Team members will have opportunities for ongoing education, skill development, and personal development throughout the project.
3. This project will increase productivity and efficiency by encouraging genuine and forthright interaction among all members of the team.
4. For a project to be successful and finished on schedule, team members must develop a sense of accountability and responsibility for the tasks and deliverables they are given.
5. To guarantee the creation of high-quality deliverables, we are dedicated to continuously abiding by best practices, standards, and quality assurance procedures at every stage of the project.

## 6.0 SCOPES

### 6.1 System

This project's scope includes creating an advanced web platform specifically designed to cater to the requirements of professors and postgraduate students at educational institutions. To improve efficiency and expedite academic procedures, this platform will incorporate a wide range of capabilities, such as task organization, scheduling, collaboration tools, and progress tracking systems.

### 6.2 User

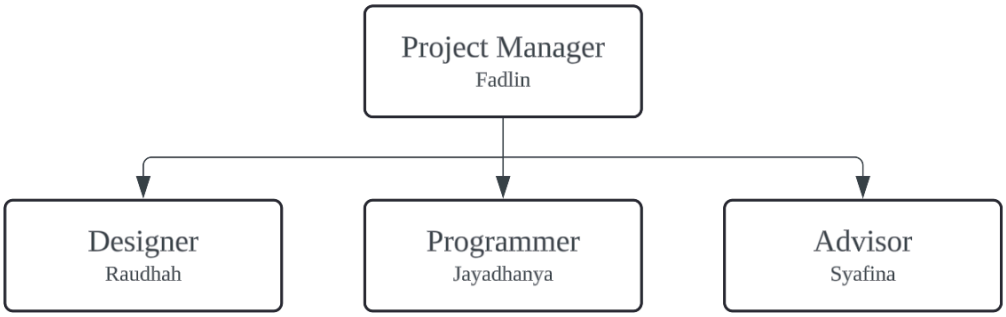
The target users of this platform are postgraduate students and lecturers within educational institutions. They will benefit from an intuitive interface designed to minimize the learning curve, accompanied by comprehensive training materials and ongoing support to ensure seamless adoption and utilization of the platform. Additionally, the platform aims to address technological feasibility concerns by leveraging readily accessible developer skills and advancements in web technology tailored to the needs of postgraduate students and lecturers.

### 6.3 Feasibility

Initial development expenses, prospective subscription income streams, and long-term cost reductions through higher productivity are all factors to be taken into account when determining economic feasibility. Ensuring user acceptance through intuitive design, smooth integration into current workflows, and continuous assistance to handle any user concerns or technical challenges are all critical components of operational feasibility. Language that will be used to create the website is HTML, and google sites for easier website maker. Platforms to develop HTML coding are textedit, notepad and google collaborator. We also use GitHub to compile and keep track of our works.

## 7.0 PROJECT PLANNING

### 7.1 Human Resource




**Project Manager:** Fadlin Afina binti Daud

- Manages tasks and progress of such tasks
- Assigns tasks to team members

**Designer:** Wan Nur Raudhah binti Maszmanie

- Prepare rough design for website wireframe
- Refine design for website prototype

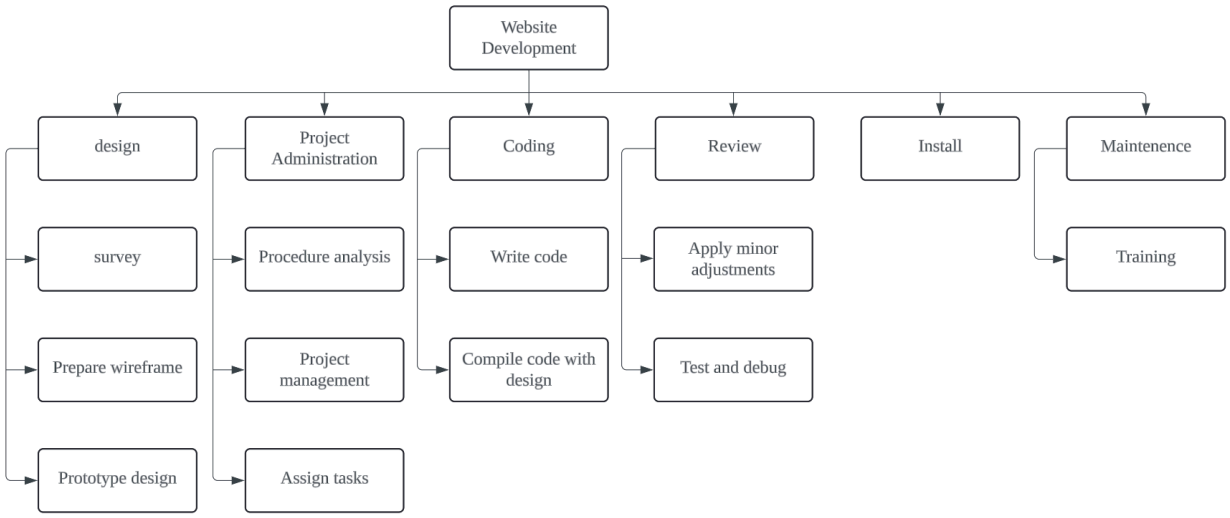
**Programmer:** Jayadhanya A/P Vijayalingam

- Create a rough draft for features and tools
- Build a programmable website based on design

**Advisor:** Nur Aina Syafina binti Kamasuahadi

- Reviews progress and track errors
- Acknowledge and points out parts that can be improved

### 7.2 Work Breakdown Structure (WBS)




### 7.3 PERT Chart

| Activity | Description | Predecessor | Expected Time |
|---|---|---|---|
| A | Survey different types of learning and productivity website. | None | 1 Day (14/04/2024) |
| B | Prepare wireframes | A | 2 Days (15/04/2024 - 16/04/2024) |
| C | Design prototype. | B | 5 Days (17/04/2024 - 21/04/2024) |
| D | Analyse project procedure. | C | 2 Days (22/04/2024 - 23/04/2024) |
| E | Manage project resources and tasks. | C | 3 Days (24/04/2024 - 26/04/2024) |
| F | Assign tasks to people in charge. | D,E | 1 Day (27/04/2024) |
| G | Write website code. | F | 20 Days (28/04/2024 - 17/05/2024) |
| H | Compile code with design prototype. | B,G | 10 Days |

| | | | |
|---|---|---|---|
| | | | (18/05/2024 - 27/05/2024) |
| I | Apply minor adjustments. | H | 3 Days<br>(28/05/2024 - 30/05/2024) |
| J | Test and debug website code. | I | 7 Days<br>(31/05/2024 - 06/06/2024) |
| K | Install software for application management. | J | 2 Days<br>(07/06/2024 - 08/06/2024) |
| L | Provide training for new users | K | 7 Days<br>(09/06/2024 - 15/06/2024) |

## 7.4 Gantt Chart

**WorkStudio Project**

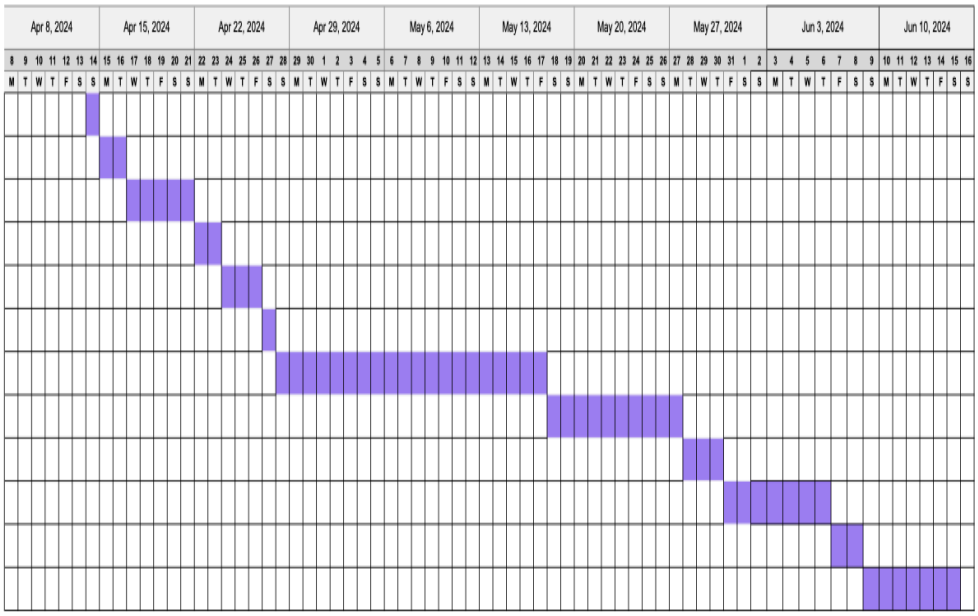
Project start: Sab, 4/13/2024

BlackBox

Display week: 1

GANTT CHART

| TASK | START | END |
|---|---|---|
| Survey different types of learning and productivity web | 14/04/2024 | 14/04/2024 |
| Prepare wireframes | 15/04/2024 | 16/04/2024 |
| Design prototype. | 17/04/2024 | 21/04/2024 |
| Analyse project procedure. | 22/04/2024 | 23/04/2024 |
| Manage project resources and tasks. | 24/04/2024 | 26/04/2024 |
| Assign tasks to people in charge | 27/04/2024 | 27/04/2024 |
| Write website code | 28/04/2024 | 17/05/2024 |
| Compile code with design prototype | 18/05/2024 | 27/05/2024 |
| Apply minor adjustments. | 28/05/2024 | 30/05/2024 |
| Test and debug website code | 31/05/2024 | 6/6/2024 |
| Install software for application management. | 7/06/2024 | 8/06/2024 |
| Provide training for new employees. | 9/06/2024 | 15/06/2024 |



## 8.0 Benefit and Overall Summary of Proposed System

1. **Enhancing Productivity and Efficiency:** By providing a wide range of features that make collaborative work, scheduling, task management, and progress tracking easier, the platform seeks to simplify academic procedures. In order to free up users' time and focus for their primary academic endeavors—research, writing, and publication—the platform aims to reduce laborious manual processes and maximize workflow efficiency by offering a centralized center for managing academic assignments.

2. **Enhancing Cooperation and Communication:** In academic settings, effective cooperation is crucial, but conventional approaches frequently lack real-time communication capabilities, which causes delays and inefficiencies. In order to solve this problem, the platform provides strong collaboration tools that let all parties involved easily exchange documents, give input, and monitor changes in real time. The platform encourages teamwork, which speeds up project completion, improves decision-making, and allows information sharing.

3. **Ensuring Accuracy and Integrity of Academic Work:** Manual task management systems are prone to mistakes including data discrepancies, missing deadlines, and problems with version control. The platform includes version control tools and automated progress tracking to reduce these risks and guarantee accurate and ethical completion of academic assignments. The software reduces the possibility of errors and discrepancies by giving real-time updates on task progress and document versions, protecting the caliber and reputation of academic work.

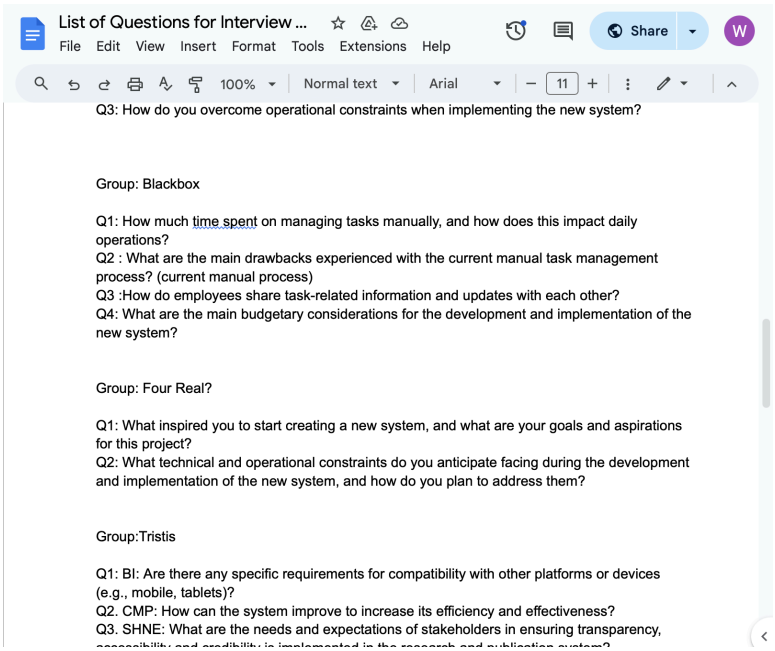
4. **Encouraging Flexibility and Accessibility:** In the current digital world, where collaboration frequently occurs across geographic borders, accessibility is very important. No matter where they are or what kind of device they prefer, users can access critical information and work together with colleagues thanks to the platform's universal browser compatibility. The platform also provides customers with customization and scalability options, enabling them to modify their workflows to meet project requirements and personal preferences.

5. **Ensuring Feasibility and Sustainability:** The project's ability to move forward is contingent upon its operational, technical, and sustainable elements. The platform technically uses cutting-edge web technologies and frameworks to deliver a scalable and reliable user experience. The project aims to be financially sustainable through

collaborations with academic institutions or other income sources such as subscription models. Operationally speaking, the platform prioritizes user demands by offering a user-friendly interface, copious documentation, and ongoing support, all of which contribute to ensuring a seamless integration with existing workflows and procedures.

6. **Seamless Integration into Current Work Processes:** The goal is to provide a platform that easily integrates into postgraduate students' and lecturers' current work processes by providing them with a user-friendly interface, extensive training resources, and ongoing support. By lowering the learning curve, optimizing feature consumption, and offering continuous support to handle any problems or technical challenges, this method seeks to ensure user approval.

# APPENDIX



List of Questions for Interview ...

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Q3: How do you overcome operational constraints when implementing the new system?

Group: Blackbox

Q1: How much time spent on managing tasks manually, and how does this impact daily operations?
Q2 : What are the main drawbacks experienced with the current manual task management process? (current manual process)
Q3 :How do employees share task-related information and updates with each other?
Q4: What are the main budgetary considerations for the development and implementation of the new system?

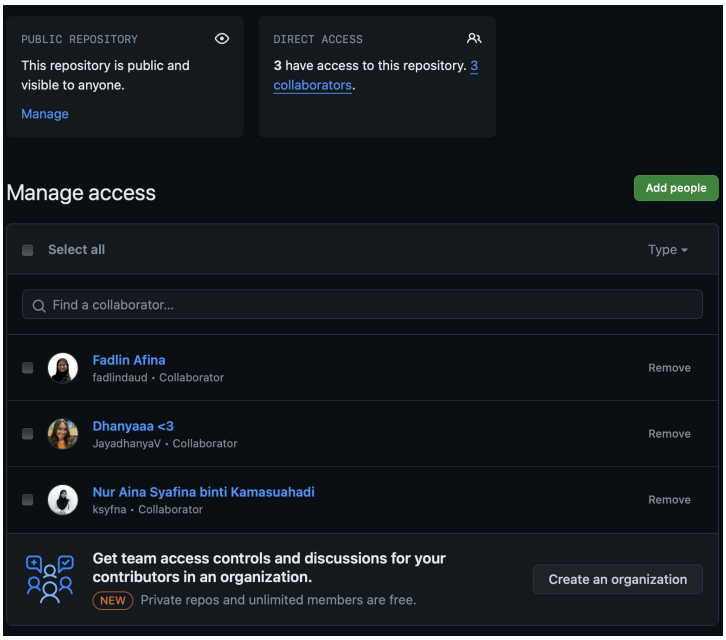
Group: Four Real?

Q1: What inspired you to start creating a new system, and what are your goals and aspirations for this project?
Q2: What technical and operational constraints do you anticipate facing during the development and implementation of the new system, and how do you plan to address them?

Group:Tristis

Q1: BI: Are there any specific requirements for compatibility with other platforms or devices (e.g., mobile, tablets)?
Q2. CMP: How can the system improve to increase its efficiency and effectiveness?
Q3. SHNE: What are the needs and expectations of stakeholders in ensuring transparency,

*Appendix 1: questions proposed for the interviewee, Dr Alif*




*Appendix 2: Github repository in which all the members collaborate*