[Document Submission System]

Project Plan

[Software Engineering Project | 28]

List of your Names:

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SWE40001 EAT40003, Software Engineering Project A, Semester 1 AND 03/04/2022

DOCUMENT CHANGE CONTROL

Version	Date	Authors	Summary of Changes
1	25/03/2022	Adrian Sim Huan Tze	The entire document is formatted to the Cambria font style with 10-11 font size. All remarks are removed and put in the comment panel.
2	26/03/2022	Adrian Sim Huan Tze	Overview of Terms of Reference is added. Project objectives are summarized and included,
3	27/03/2022	Adrian Sim Huan Tze	Project Scope and Critical Success Factors are added.
4	27/03/2022	Jun Wee Tan	Section 7: Schedule is added
5	28/03/2022	Jun Wee Tan	Project timeline (Gantt chart) has been added into section 7.1 Project timeline
6	30/03/2022	Jun Wee Tan	Section 8: Budget is completed and added into document
7	31/03/2022	Adrian Sim Huan Tze	Modify and make adjustment on Project Goals and Project Objectives.
8	03/04/2022	Adrian Sim Huan Tze	Revise and review every section of the document. Some tables are reformatted.

DOCUMENT SIGN OFF

Name	Position	Signature	Date
Jun Wee Tan	Team Leader		3/04/2022
Adrian Sim Huan Tze	Member		3/04/2022
Xin Zhe Chong	Member		3/04/2022
K.M. Yovinma M. Konara	Member		3/04/2022
Sandali T. Jayasinghe	Member		3/04/2022
Richard Ly	Member		3/04/2022

CLIENT SIGN OFF

Name	Position	Signature	Date
Caslon Chua	Client		
Organisation			
Department of Computing Technologies at Swinburne University of Technology			

CONTENTS

1. INTRODUCTION

1.1. BACKGROUND

The Document Submission System project came about from wanting students to increase their awareness of plagiarism and prevent students from committing it. This system will be predominately used by students and tutors in their respective courses at Swinburne University of Technology.

The purpose of this project is to conduct an analysis of the submitted work and check for plagiarism. Analysing submitted work will provide Swinburne University the necessary tools to check if students plagiarised and will serve as a reference for academic staff in grading students' work. This document will include a project goal, project scope, functional requirements, standard procedures, deliverables, organisation and structure, risks, schedule, budget and the overall description of the product.

1.2. KEY PROJECT PERSONNEL

The key personnel involve in this project are as follows:

1.2.1. CLIENT

Caslon Chua is the Department Chair in the Department of Computing Technologies at Swinburne University of Technology. Caslon Chua has requested to develop a web-based submission application which analyses submitted work and produce a text-based report of the submitted work.

1.2.2. OTHER STAKE HOLDERS

Stakeholders	Roles	Responsibilities	Email
Jun Han	Supervisor	Makes sure the project team is on track to produce this application and deliver it to the client on time.	jhan@swin.edu.au
Jun Wee Tan Xin Zhe Chong Adrian Sim Huan Tze K.M. Yovinma M. Konara Sandali T. Jayasinghe Richard Ly	Project Team Members	Develop the web application. Handle the development of the product. Ensure that the prototype can be produced before the due date.	101231636@student.swin.edu.au 103698851@student.swin.edu.au 101225244@student.swin.edu.au 102426323@student.swin.edu.au 102849357@student.swin.edu.au 103340644@student.swin.edu.au
Academic Staff	Tutors	Check the submitted work and see if there are any forms of plagiarism.	

	Swinburne School Departments	Departments from different faculties within Swinburne will also be using this to check and see if submitted works are plagiarised.	
Swinburne Students	Students	Submit their written work by uploading them to the application	

1.2.3. PROJECT SUPERVISOR, TEAM LEADER AND KEY PROJECT MEMBERS

Jun Han – Supervisor

Jun Wee Tan – Team Leader

Sandali Thathsarani Jayasinghe – Member

Yovinma Mandini Konara Konara Mudiyanselage – Member

Richard Ly – Member

Xin Zhe Chong – Member

Adrian Sim – Member

2. TERMS OF REFERENCE

Project Goal

The goal that drives the concept of the project is to develop a ***document submission system*** which accepts reports written by the students or researchers from different industry areas. This can be accomplished by introducing a unique feedback mechanism to help academic staff like markers, graders and students understand ***what constitutes plagiarism and to increase the awareness of plagiarism among them***. In other words, the project encourages students or researchers to use paraphrasing techniques and citation in their report instead of committing plagiarism deliberately or accidentally.

Membership

The project group will comprise:

- Jun Han, Supervisor
- Jun Wee Tan, Leader, Cybersecurity major
- Adrian Sim Huan Tze, Member, Software Development major
- Xin Zhe Chong, Member, Data Science major
- K.M. Yovinma M. Konara, Member, Data Science major
- Richard Ly, Member, Software Development major
- Sandali T.Jayasinghe, Member, Data Science major

Roles and Responsibilities

The supervisor is accountable for:

- fostering collaboration
- always maintaining the focus of the group on the decided outcomes, scope and benefits
- supervising and controlling the external factors that are critical to its success.

The members of the group are accountable for:

- attending every scheduled group/supervisor/client meeting
- sharing all information and communication across all group members
- making well-timed decisions and taking actions to avoid procrastinating the project
- informing the entire group, as soon as practical, if any matter arises which may be deemed to affect the development of the project
- stay vigilant and alert to possible risks and matters that could influence the project once they occur
- open and honest discussions, without resort to any misleading assertions

Meetings

All meetings will be led by Jun Wee Tan (Team Leader).

Meeting minutes will be presented by each of the team member on a rotating basis, this includes:

1. arranging supporting papers and relevant documents
2. preparing meeting notes and information.

There are three types of meetings will be conducted throughout the project development.

i. Client Meeting will be held on a fortnightly basis on Friday 2:30PM at Microsoft Team.
ii. Supervisor Meeting will be held on a weekly basis on Friday 9:00AM at Microsoft Team.
iii. Group Meeting will be held occasionally at Discord group channel.

If necessary, subgroup meetings will be organized outside of these times at a time convenient to subgroup members.

2.1. OBJECTIVES

- Collect and summarise **at least 10 references** on **contracting cheating and plagiarism** which focuses on studying their definitions and metrics. Present the result in a research report to the client before 8th April 2022 (Week 6).
- Setup and configure a **web server** using Amazon AWS lab account offered by the client. The Amazon service used will be EC2. The maximum budget of setting up the web server **should be below AUD100**, and this should be done by the end of Week 9.
- Setup and configure **MySQL database server** with Amazon RDS under AWS lab account offered by the client. The maximum budget of setting up the database server **should be below AUD100**, and this should be done by the end of Week 9.
- Build a web application prototype which is document submission system, particularly focusing on uploading assignments, report analysis, generating multiple-choice questions, web searching on title-matching and performing CRUD backend operations. The prototype implemented must have these **6 domain level requirements** and it should be launched by the end of **Week 24**.
- Ensures that the prototype passes all **5 main software testings**. These testings are Unit Testing, Functional Testing, Integration Testing, Regression Testing and UI Testing. They assist in detecting errors, gaps or missing requirements opposed to the actual requirements stated by the client.
- Prepare final report which provides a comprehensive overview of the architecture of the web application prototype by the end of **Week 10**. The report content should be provided with screenshots of sample output and clarification and should be at least 1 page long.

2.2. SCOPE

The project will be primarily adhered to the SDLC (***Software Development Life Cycle***). There will be a total of seven phases in SDLC consisting of planning, analysis, design, development, testing, implementation, and maintenance. The project inception starts off on ***18th March 2022*** which is during the planning phase while the estimated final day for this project will be on ***16th September 2022***. The estimated duration of the project is ***183 days*** including semester break.

Boundaries of the project:

- The project will conduct research regarding the current state of contracting cheating. The scope of the research report includes studying the definitions and metrics of plagiarism and contract cheating.

- The project will develop a prototype of a document submission system which is web-based. The website will be hosted using AWS EC2 services. As for the backend server, a MySQL server
- The prototype will be able to support assignment submission and perform a report analysis on the submitted assignment. The report analysis will be solely a text-based analysis where it will analyse the tone, writing style, reference summary and sentiment analysis.
- During submission, the prototype will be able to generate 5 multiple-choice questions with answers from the assignment submission. The questions will be presented to the user in a procedural approach where a unique link is sent to the user via email. The user is expected to access the link to answer all the questions to complete the submission. The prototype will generate questions from different report sections randomly including Introduction, Methodology, Abstract, Discussion etc.
- The prototype will store the result of the report analysis. The result would contain information like word count, reference summary, content matching score, author, date etc. This information will be kept in MySQL database table.
- The prototype will notify the convenor through email comprising the result of analysis and the result of the multiple-choice questions once the overall result is set.
- The project will develop an admin-view of interface to support data management in the web application. The management comprises of fundamental CRUD database operations.

Identify project and prototype constraints:

- The report analysis could only support document which is submitted in PDF format.
- Code files are not allowed to be submitted to the portal as code analysis is not integrated.
- The prototype is not portable as it is limited to web application only and mobile application is not currently endorsed.

List assumptions regarding decisions outside the project team's control.

1. Assume that all the submissions are English-based report without any coding files.
2. Assume that each of the assignment submitted are of PDF format.
3. Assume that there are sufficient fundings given to support the project in hosting the web application using AWS cloud services.

2.3. CRITICAL SUCCESS FACTORS

- Academic writing skills and fundamental digital literacies.
- Comprehensive knowledge in contracting cheating and plagiarism particularly on the metrics and definitions.
- Well-defined project objectives and specifications.
- Experienced software developers with expertise knowledge on skills of database design, web development and basic NLP.
- Sufficient finance support and knowledge for AWS website hosting services.

- Practice effective project management and risk management.
- Clear communication and trust over the project team.
- Consider End Users and Implement User Testing.

2.4. ACCEPTANCE CRITERIA

For the system to be considered acceptable by the client, the system should perform the 6 domain level requirements listed below:

a. **Assignment submission**

The system should be able to support assignment submission. The users can upload their assignments in PDF document to the system.

b. **Report analysis**

The algorithm in the prototype system should analyse sections of the report. It will summarize the report and provide information like word count, reference summary, content matching score, author, date, etc.

c. **Web Searching**

The system should conduct a web search in the submitted solution against posted in the assignment help based on title-matching.

d. **Data storing**

Storing of assignments, questions, results from report analysis and answers from the MCQ by the candidates. This information will be kept in MySQL database table.

e. **Generate multiple choice questions**

Utilize the report analysis function to generate a set of questions to be answered by the candidates.

3. ESTABLISHMENT

3.1. PROCESSES, PROCEDURES AND STANDARDS

The software methodology approached in this project would be the Scrum methodology; the project is of a larger scale and thus has many requirements that can alternate with the progress of the project. Therefore, undertaking scrum methodology for this project ensures frictionless adaptability and organization of tasks required to be completed within the expected timeframe. Furthermore, the team expects to show continuous improvement in the project development in an agile mindset, where the scrum methodology assists in.

Upon completion of the project, any further maintenance, or updates to the contents of the project would be communicated via the Github repository created by the team. The use of version control ensures that the product be deployed in a successful manner. Each update would also be described textually under a README file to ensure that developers keep a detailed track of any changes or fixes to the product's previous version.

During the design phase of the software, following the principles of user-centred design, the client is involved in the design planning from the beginning. Involving the client in the design planning process will help us clarify the requirements of the client with the team. Client's/user's feedback would be collected and analysed regularly to make more client focused decisions in the product lifecycle. After the completion of the project, new changes could also be introduced to improve the client experience.

Coding standards will be followed to produce a well-manageable solution that is easy to interpret in the future. These standards are as follows:

1. Minimum possible lines of code in the solution.
2. Writing functions such that each conventionally named function carries out a non-repetitive singular task.
3. Capitalizing of function names in SQL to distinguish from tables and rows.
4. Segmentation of code when HTML, CSS and PHP files are written.
5. Standardization of code in header sections using comments in code (This will include date created, summary of code and functions used)
6. Inclusion of error handling in code.
7. Commenting in the code must be included and its message must be comprehendible.

3.2. PROJECT ENVIRONMENT

The project environment would be cloud-based where the project will be utilizing Amazon Web Services (AWS EC2) and its Relational Database Services (RDS) to host the solution on the cloud. The server account used for the solution is offered by the client which is a lab account. The solution will also include the usage of a database management system; for this solution, the MySQL server will be used to manage all the database related activities. A user account will also be created to manage all admin and subscription services used in the project. This will be created by the team and handed over to the client upon project completion. When the project is deployed, the solution will be uploaded to a web server for the client to utilize.

3.3. PROJECT TEAM SKILL DEVELOPMENT REQUIREMENTS

The skills needed by the group members for this can be categorized as project planning skills, web development skills, web hosting skills, programming skills and database management skills. Most of the team members have experience working with the above skill sets throughout their studies of the degree.

For extra expertise knowledge on skills like web development and programming, resources like online courses and tutorials could be used. The team members can also share each other's knowledge by sharing their skills and helping with ideas when problem solving.

4. DELIVERABLES, ACTIVITIES AND CAPITAL RESOURCES

4.1. DELIVERABLES

In this project, there are some items that need to be delivered to the stakeholder. This includes:

a. Research report – The report regarding the current state, definition, and metrics of plagiarism and contract cheating
b. Completed web prototype – The prototype of the Document Submission System
c. Final report – The documented process and functionalities of the system
d. User training – Guiding the users to familiarise with the system

4.2. ACTIVITIES

The development process involved in this project primarily adheres to the Systems Development Life Cycle (SDLC). Therefore, the project is divided into stages.

The first stage of the project is **planning.** In this process, we identify the project's background issue, risk, key project personnel, and business goals with the client by conducting a fortnightly meeting. The supervisor meeting is also held weekly to provide updates and progression to the project supervisor. This stage will start at week 3 and will continue throughout both semesters.

The second stage of the project is **analysis**. In this process, we conduct studies and research on the topic of contracting cheating and plagiarism to better understand the current issues of contracting cheating and the metrics of plagiarism and cheating. This stage of the project begins on week 2 and ends at week 6. During this stage of the project, we will carry out a research report of existing work, materials and processes to comprehend on how students cheat and how they manipulate the flaws of existing solutions to their advantage.

The next stage of the project is the **system design** phase that lasted for one week since the beginning of week 6. Within this stage, we will design a suitable system as the solution to the document submission issue by identifying the input, output, and process that should be supported by the document submission system. This is achieved by:

- UML diagram to describe the business rules, processes and features
- Use case diagram and use case description
- User interface drafting to provide a general outline and visualisation of the functionalities included within the developed system

The fourth stage of the project is **system implementation**. This stage starts from Week 6 to the end of the following semester due to the complexity of the development. We will establish the development environment, configuring the tools and frameworks used, coordinating the code guidelines and standards as well as coding the system. At the end of this stage, the prototype system will be produced.

The following stage of the project is **testing** where the system will be evaluated to determine the system's effectiveness and whether the system conforms to the previously stipulated requirements and features. Thus, it is planned to conduct a usability testing on the prototype of the document submission system to discover flaws and shortcomings. Necessary changes will be made to incorporate improvements and fixes to the system based on the findings of the usability testing.

Lastly, the final stage of the project will be adding future enhancements and improvements which can be implemented into the developed system. Some additional features that may not be a fundamental part of the system but will provide more convenience to the users will be included at this stage to integrate better into the overall education management infrastructure to deliver a higher degree of automation

4.3. RESOURCES

For the project to be completed, certain software needs to be utilized for the system to perform its intended function.
In the software department, the website is hosted on Amazon EC2 by AWS so that the system can be carried out from multiple devices rather than relying on the host machine. The database system will be hosted on Amazon RDS so that the data can be stored on the cloud without relying on the host machine.

The campus library will be used for:

1. Carry out group meetings
2. Gather the information regarding contracting cheating
3. Programming technique development (PHP, MySQL)

5. ORGANISATION AND STRUCTURE

The following list provides the group of individuals involved with the project solution:

1. **Scrum team** – Responsible for providing project solution by analysing information related to creating the solution, developing and deploying the software and testing the solution with the users.
2. **Client** – Responsible for providing finances and feedback in the creation and deployment of the solution and approving of project components included for the solution.
3. **Business users** – Responsible for user testing the solution along with accurately and honestly providing feedback regarding the solution's functionality and interface.

The information presented in table 2 will be interpreted with the structure as follows with the example result presented in table 1:

Example: The research report deliverable will involve only the members of the scrum team (group 1), while the system design activity will include the groups scrum team and client (group 1 and 2). This will be presented in the structure as follows:

Activities / ***Deliverables***	***1***	***2***	***3***
Systems design	*Yes*	*Yes*	*No*
Research Report	*Yes*	*No*	*No*

Table 1 Activities and Deliverables

The group numbers are assigned based on the list presented above where the group number corresponds to the numbered point in the group list.

Activities ***Deliverables***	***Group 1***	***Group 2***	***Group 3***
Analysis	*Yes*	*No*	*Yes*
Research report	*Yes*	*Yes*	*No*
System development	*Yes*	*Yes*	*No*
Web prototype	*Yes*	*Yes*	*No*
Testing	*Yes*	*No*	*Yes*
Final report	*Yes*	*No*	*Yes*
	N/A	*N/A*	*N/A*
User training	*Yes*	*Yes*	*Yes*

Table 2 Activities and Deliverables

6. RISKS

The risks that will affect the project plan are the unforeseen events that we will have to face during the completion of the project. It is important to analyse the risks related to the project plan as it helps with identifying weaknesses and strengths during the completion of the project.

Scope variation

Scope variations may occur when the workload of an agreed iteration changes. It will impact the team members' ability to carry on the work according to the original timeline.

Poor productivity

The group may sometimes fall short on the planned works within a timeframe which will make the group's productivity poor.

Team member leaving the project

A team member may leave the project during the project completion period which may delay the project outcomes.

Schedule flaws

Hard to estimate and schedule the time.

Poor quality code

When the quality of the project code does not meet the expectations of the client, it can be a risk to a successful project completion. Poor code refers to code that it difficult to comprehend and not tested. Events such as this may occur when the developers are rushing to complete their work.

Resource risks

Resource risks occur if there are insufficient recourses like time, skills and budget to complete the project. It is important to communicate with the team about the status of the resources when available and needed.

Risks associated with this project.

Rank	Name / Description	Occurrence Probability (H/M/L)	Severity (H/M/L)	Mitigation Strategy Number	Contingency
1	Scope Variation	M	M	1	Carry out the project with the new scope
2	Poor Productivity	M	H	2	Introduce short iterations.
3	Team member leaving the project	L	H	3	Re-arrange the workload between the members.
4	Schedule flaws	M	M	4	
5	Poor quality Code	M	M	5	Recheck code for bugs and fix the code.
6	Resource Risks	M	M	6	Introduce new resources to the project.

Table 3 Risks

Strategies to mitigate the risks:

1) Constant involvement of client and team members to the project.
2) We can use burndown charts to track the group's productivity. Rather than having long project timelines, introduce short iterations (1-2 weeks) so that the work is manageable and there is always a sense of urgency to complete the workload.
3) Increasing the team's collaboration by sharing key information with the group and the supervisor during the weekly stand-up meetings. Practicing information sharing techniques like working in pairs, common code ownership will also reduce the risk.
4) Involving the team members in planning and estimating the project outcomes. Getting frequent feedback from the client and discuss the products regularly.
5) Carrying out code reviews. Creating clear code standards and guidelines. Testing all the codes for bugs and redundancy.
6) A resource allocation plan can be used to efficiently utilize the resources available to support the project goals. The chances of running out of resources in latter parts of the project can be minimized by this.

7. SCHEDULE

The schedule of this project is to ensure that every task, resource, and software development process is well managed and can be completed on time. Our group will be using the **Gantt Chart** from Microsoft Project to track our project timeline with start dates, end dates, and milestones in this software project.

7.1. PROJECT TIMELINE

Below is the Gantt chart that indicates all the due dates of the Document Submission System task in the planning, analysis, and design phase.

This timeline is in accordance to SDLC development phase which includes the Planning phase, Analysis phase, Design phase, Implementation phase, Testing and Integration phase and Maintenance phase. The estimated final day for this project will be on **16th of September 2022**.

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors
0		**Document Submission System Gantt Chart (Phase 1)**	**136 days**	**Fri 11/3/22**	**Fri 16/9/22**	
1		**Planning**	**50 days**	**Mon 28/3/22**	**Fri 3/6/22**	
2		Project requirement meeting	1 day	Fri 11/3/22	Fri 11/3/22	
3		**Weekly client meeting**	**51 days**	**Fri 18/3/22**	**Fri 27/5/22**	
4		Weekly client meeting 1	1 day	Fri 18/3/22	Fri 18/3/22	
5		Weekly client meeting 2	1 day	Fri 1/4/22	Fri 1/4/22	
6		Weekly client meeting 3	1 day	Fri 15/4/22	Fri 15/4/22	
7		Weekly client meeting 4	1 day	Fri 29/4/22	Fri 29/4/22	
8		Weekly client meeting 5	1 day	Fri 13/5/22	Fri 13/5/22	
9		Weekly client meeting 6	1 day	Fri 27/5/22	Fri 27/5/22	
10		**Weekly Supervisours meeting**	**56 days**	**Fri 18/3/22**	**Fri 3/6/22**	
11		Weekly Supervisours meeting 1	1 day	Fri 18/3/22	Fri 18/3/22	
12		Weekly Supervisours meeting 2	1 day	Fri 25/3/22	Fri 25/3/22	
13		Weekly Supervisours meeting 3	1 day	Fri 1/4/22	Fri 1/4/22	
14		Weekly Supervisours meeting 4	1 day	Fri 8/4/22	Fri 8/4/22	
15		Weekly Supervisours meeting 5	1 day	Fri 15/4/22	Fri 15/4/22	
16		Weekly Supervisours meeting 6	1 day	Fri 22/4/22	Fri 22/4/22	
17		Weekly Supervisours meeting 7	1 day	Fri 29/4/22	Fri 29/4/22	
18		Weekly Supervisours meeting 8	1 day	Fri 6/5/22	Fri 6/5/22	
19		Weekly Supervisours meeting 9	1 day	Fri 13/5/22	Fri 13/5/22	
20		Weekly Supervisours meeting 10	1 day	Fri 20/5/22	Fri 20/5/22	
21		Weekly Supervisours meeting 11	1 day	Fri 27/5/22	Fri 27/5/22	

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors
22		Weekly Supervisours meeting 12	1 day	Fri 3/6/22	Fri 3/6/22	
23		Plan for collaboration tools with all skateholders	6 days	Fri 18/3/22	Fri 25/3/22	4
24		Identify key project personnel	6 days	Fri 18/3/22	Fri 25/3/22	4
25		Identify goals and background issue of the project plan	6 days	Fri 18/3/22	Fri 25/3/22	4
26		Identify risk associated with project	6 days	Fri 18/3/22	Fri 25/3/22	4
27		**Analysis**	**37 days**	**Fri 18/3/22**	**Mon 9/5/22**	
28		Produce Project Plan	11 days	Fri 18/3/22	Sun 3/4/22	
29		Produce Software Quality Assurance Plan (SQAP)	12 days	Fri 18/3/22	Sun 3/4/22	
30		Project Specific Assessment Criteria	12 days	Fri 18/3/22	Sun 3/4/22	
31		Produce Software Requirement Specification (SRS)	16 days	Fri 18/3/22	Fri 8/4/22	
32		Produce Research plan for Definition of Plagiarism	11 days	Fri 25/3/22	Fri 8/4/22	
33		Software/System Design and Research Report (SDRR)	22 days	Fri 8/4/22	Mon 9/5/22	
34		**Design**	**26 days**	**Fri 18/3/22**	**Fri 22/4/22**	
35		Software Architectural Framework	26 days	Fri 18/3/22	Fri 22/4/22	
36		UML class diagram	26 days	Fri 18/3/22	Fri 22/4/22	
37		Entity Relationship Diagram (ERD) for database	26 days	Fri 18/3/22	Fri 22/4/22	
38		Use case diagram with task description	26 days	Fri 18/3/22	Fri 22/4/22	
39		User interface wireframe	26 days	Fri 18/3/22	Fri 22/4/22	

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors
40		defined coding guideline	26 days	Fri 18/3/22	Fri 22/4/22	
41		Software work-breakdown structure	26 days	Fri 18/3/22	Fri 22/4/22	
42		**Implementation**	**76 days**	**Fri 6/5/22**	**Fri 19/8/22**	
43		**Login module**	**11 days**	**Fri 6/5/22**	**Fri 20/5/22**	
44		Program user login form	11 days	Fri 6/5/22	Fri 20/5/22	
45		create login database schema	11 days	Fri 6/5/22	Fri 20/5/22	
46		validation for user	11 days	Fri 6/5/22	Fri 20/5/22	
47		testing login module	11 days	Fri 6/5/22	Fri 20/5/22	
48		**Activity module**	**36 days**	**Fri 20/5/22**	**Fri 8/7/22**	
49		Program user submitssion form	36 days	Fri 20/5/22	Fri 8/7/22	
50		create upload, delete file function	36 days	Fri 20/5/22	Fri 8/7/22	
51		create question page	36 days	Fri 20/5/22	Fri 8/7/22	
52		Generate question function	36 days	Fri 20/5/22	Fri 8/7/22	
53		create question database	36 days	Fri 20/5/22	Fri 8/7/22	
54		program connection to database	36 days	Fri 20/5/22	Fri 8/7/22	
55		Create CRUD function for question database	36 days	Fri 20/5/22	Fri 8/7/22	
56		testing activity module	36 days	Fri 20/5/22	Fri 8/7/22	
57		**Analysis module**	**31 days**	**Fri 24/6/22**	**Fri 5/8/22**	
58		program analysis module page	31 days	Fri 24/6/22	Fri 5/8/22	
59		create analysis function	31 days	Fri 24/6/22	Fri 5/8/22	
60		create generate anaylsis report functi	31 days	Fri 24/6/22	Fri 5/8/22	
61		download and email function	31 days	Fri 24/6/22	Fri 5/8/22	
62		testing analysis module	31 days	Fri 24/6/22	Fri 5/8/22	

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors
63		**Dashboard module**	**11 days**	**Fri 5/8/22**	**Fri 19/8/22**	
64		create navigation link to other page	11 days	Fri 5/8/22	Fri 19/8/22	
65		testing dashboard module	11 days	Fri 5/8/22	Fri 19/8/22	
66		**Testing and Intergration**	**126 days**	**Fri 11/3/22**	**Fri 2/9/22**	
67		integration testing	11 days	Fri 19/8/22	Fri 2/9/22	
68		Test Plan	57 days	Fri 11/3/22	Sun 29/5/22	
69		user case scenario	11 days	Fri 19/8/22	Fri 2/9/22	
70		collect feedback from usability test	11 days	Fri 19/8/22	Fri 2/9/22	
71		**Maintenance**	**11 days**	**Fri 2/9/22**	**Fri 16/9/22**	
72		debug any error after usability test	11 days	Fri 2/9/22	Fri 16/9/22	
73		weekly feedback	11 days	Fri 2/9/22	Fri 16/9/22	

7.2. EXTERNAL DEPENDENCIES

Aside from internal dependencies in this project, there are no external dependencies involved.

7.3. ASSUMPTIONS

Assumption in arriving at the schedule:

Planning phase:

1. Assume both the weekly client and supervisor meeting has no delays or postponements.
2. Assume the background of the Document Submission System has been understood by every project stakeholder.
3. Assume the business goals, objective and key issue has been identified by all stakeholders.
4. Assume the feasibility and risks of the software has been considered by all stakeholders.
5. Assume the key project personnel has been identified by all stakeholders.

Analysis phase:

1. Assume all the requirement of the project has been discovered by project team members.
2. Assume all the requirement of the project has been documented in project plan.
3. Assume all the aspect of the software project such as Background, Key holders, objectives, project scope, establishment, deliverables, risk, schedule, and risks has been documented into Software Quality Assurance Plan (SQAP)
4. Assume the result of the project research has fulfilled the client's expectations.
5. Assume the budget allocated for software project is sufficient.
6. Assume the project members acknowledge the project's environment and possess sufficient skills.

Design phase:

1. Assume all the requirements of the project such as SRS has been proposed prior to the model design.
2. Assume the architectural modules of the product are clearly defined by design.
3. Assume all the high-level design are created and revised by all stakeholders.

4. Assume all the design model such as Software Architectural Framework, UML diagram, use case scenario, user interface wireframe, work-breakdown structure is well designed, and all the requirements stated in document are included.
5. Assume the client has involved in Design phase for overviewing the big picture of the software.

Implementation phase:

1. Assume all the project members acknowledged their responsibilities on their assigned task(s).
2. Assume all the project members have started developing the software by following the given work schedule.
3. Assume the client did not intervene and adding any last-minute feature(s).
4. Assume there are no communication, technical, nor knowledge issue among the project team.
5. Assume every project member knows how the software works and its background mechanisms such as the connection between front-end and back-end.
6. Assume each module of the project has successfully passed the tests conducted.

Testing and Integration phase:

1. Assume the integration of the module in project is completed successfully without any errors.
2. Assume the use case is successfully examined by the client.
3. Assume the feedback from the client is documented by project teams.
4. Assume the client is satisfied with the software prototype to pass the usability test.

Maintenance phase:

1. Assume all issues provided in the feedback are solved by the project team.
2. Assume the process of debugging any error in current software is solved.

8. BUDGET

Below is the table that describes the ideal personnel cost for this software project.

Personnel Cost

Name	Rate per Hour
Web developers	
Jun Wee Tan	$27/hr
Sandali Thathsarani Jayashinghe	$27/hr
Yovinma Mandini Konara Konara Mudiyanselage	$27/hr
Richard Ly	$27/hr
Xin Zhe Chong	$27/hr
Adrian Sim	$27/hr

The rate per hour of web developers is referenced from payscale.com

Table 4 Personnel Cost

Time Estimated to Complete Each Task

The total contribute hours for this Document Submission System software will be control in 480 hours (80 hours x 6 project members). Each project members will be expected to work on project for maximum 10 hour(s) per week, 2 hour(s) per day, excluding weekends. The purpose of the time estimation is to ensure that all steps of software development are tracked and acknowledge by every stakeholder.

The subtasks under Analysis, Design, Implementation, Testing and Implementation, and Maintenance will be estimated 10 hour(s) per subtask, which is one week of working days.

Activity	Task	Estimated hours needed (hrs)	Total per activity (hrs)
Planning			
1	Produce requirement meeting	1	
2	Weekly Client meeting (total)	6	
3	Weekly Supervisors meeting (total)	12	
4	Plan for collaboration tools with all stakeholders	1	
5	Identify key project personnel	1	
6	Identify goals and background issue of the project plan	1	
7	Identify risk associated with project	1	**23**
Analysis			
1	Produce Project Plan	10	

2	Produce Software Quality Assurance Plan (SQAP)	10	
3	Project Specific Assessment Criteria	10	
4	Produce Software Requirement Specification (SRS)	10	
5	Produce Research plan for Definition of Plagiarism	10	
6	Software/System Design and Research Report (SDRR)	10	**60**
Design			
1	Software Architectural Framework	10	
2	UML class diagram	10	
3	Entity Relationship Diagram (ERD) for database	10	
4	Use case diagram with task description	10	
5	User interface wireframe	10	
6	Defined coding guideline	10	
7	Software work-breakdown structure	10	**70**
Implementation			
Login module			
1	Program user login form	10	
2	Create login database schema	10	
3	Validation for user	10	
4	Testing login module	10	**40**
Activity module			
1	Program user submission form	10	
2	Create upload, delete file function	10	
3	Create question page	10	
4	Generate question function	10	
5	Create question database	10	
6	Program connection to database	10	
7	Create CRUD function for question database	10	
8	Testing activity module	10	**80**
Analysis module			
1	Program analysis module page	10	
2	Create analysis function	10	
3	Create generate analysis report function	10	

4	Download and email function	10	
5	Testing analysis module	10	**50**
Dashboard module			
1	Create navigation link to other page	10	
2	Testing dashboard module	10	**20**
Testing and Integration			
1	Integration testing	10	
2	Test Plan	10	
3	User Case Scenario	10	
4	Collect feedback from usability test	10	**40**
Maintenance			
1	Debug any error after usability test	10	
2	Weekly feedback	10	**20**
Total Estimated hours			**403**

Table 5 Task time estimate

References

Hourly Rate for Industry: Web Development, payscale, viewed 1 April 2022,

<https://www.payscale.com/research/AU/Industry=Web_Development/Hourly_Rate>.

9. TABLES INDEX