



# **CAPSTONE PROJECT REPORT**

## **Report 2 – Project Management Plan**

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## I. Record of Changes

Date	A* M, D	In charge	Change Description
17/9/2024	A	NamDD	Scope & Estimation, Project Objective
18/9/2024	M	NamDD	WBS Item
20/9/2024	A	NamDD	Project Risk, Management Approach
23/9/2024	A	NamDD	Project Communication, Configuration Management, Project Deliverable
24/9/2024	M	AnhLQH	Add Responsibility Assignment
26/9/2024	M	AnhLQH	Fix Project Communication, Configuration Management, Project Deliverable
28/9/2024	A, M	DuyPA	Add and fix Configuration Management
29/9/2024	A, M	DucLM	Add and fix Document Management
30/9/2024	A, M	AnhND	Add and fix Source Code Management and Project Communication

\*A - Added M - Modified D - Deleted

## II. Project Management Plan

### 1. Overview

#### 1.1 Scope & Estimation

Project Scope with 7 simple, 18 medium, 9 complex functions

\*1 man-day of team = 8 hours (From Monday to Friday 1 days we have time for project is 4 hours.

Due to the fact that all members are having Japanese course, On Saturday and Sunday we have time for project is 6 hours so average per person per week is 4.125 man-days)

- Effort includes analysing, designing, coding, testing.
- Man-days capacity of team (man-days): 4 (day/week) \* 5 (member) \*14(weeks) = 280 (man-days)

#	Feature	WBS Item	Complexity	Est. Effort (man-days)
<b>1</b>		<b>Software Development</b>		<b>273</b>
<b>1.1</b>		<b>Iteration 1</b>		<b>110</b>
1.1.1	User	Login/Register/Logout	Medium	8
1.1.3	Library	Library	Medium	8
1.1.4	User	User Profile	Simple	3
1.1.5	Homepage	Homepage	Simple	3
1.1.6	User	Change Password	Medium	8
1.1.7	Quiz Set	Learning Quiz	Complex	12
1.1.8	Exam	Do Exam	Complex	12
1.1.9	Quiz	AI Generate Quiz	Complex	12
1.1.10	Quiz	CRUD Quiz (User)	Medium	8
1.1.11	Exam	CRUD Exam (User)	Complex	12
1.1.12	Exam	List Exam (Search, Filter) (User)	Medium	8
1.1.13	Quiz Set	CRUD Quiz Set (User)	Medium	8
1.1.14	Quiz Set	List Quiz Set (Search, Filter) (User)	Medium	8
<b>1.2</b>		<b>Iteration 2</b>		<b>80</b>
1.2.1	Subject	CRUD Subject	Medium	8
1.2.2	Subject	List Subject (Search, Filter)	Medium	8
1.2.3	Quiz	CRUD Quiz (Admin,Expert)	Medium	8

1.2.4	Quiz	Regenerate Quiz	Complex	12
1.2.5	Exam	Export Exam Shuffle Question	Complex	12
1.2.6	Quiz	Check duplicate quiz	Medium	8
1.2.7	Quiz Set	CRUD Quiz Set Official (Admin,Expert)	Medium	8
1.2.8	Quiz Set	List Quiz Set (Search, Filter) (User)	Medium	8
1.2.9	Dashboard	Dashboard	Medium	8
<b>1.3</b>		<b>Iteration 3</b>		<b>83</b>
1.3.1	Subscriptions	CRUD Subscriptions	Medium	8
1.3.2	Transaction	List Transaction History(View ,Search)	Medium	8
1.3.3	Chat	Chat with Expert	Complex	12
1.3.4	Chat	Chat with AI	Complex	12
1.3.5	Review AI	Review Error Analysis AI	Complex	12
1.3.6	User	Manage User	Medium	8
1.3.7	Transaction	Pay via VNPAY	Medium	8
1.3.8	Activity	Learning Streak	Simple	3
1.3.9	Exam	View Exam History	Simple	3
1.3.10	User	Share Exam/Quiz set	Simple	3
1.3.11	User	Buy Quiz set Official	Simple	3
1.3.12	User	Exam Leaderboard	Simple	3
<b>Total Estimated Effort (man-days)</b>				<b>273</b>

## 1.2 Project Objective

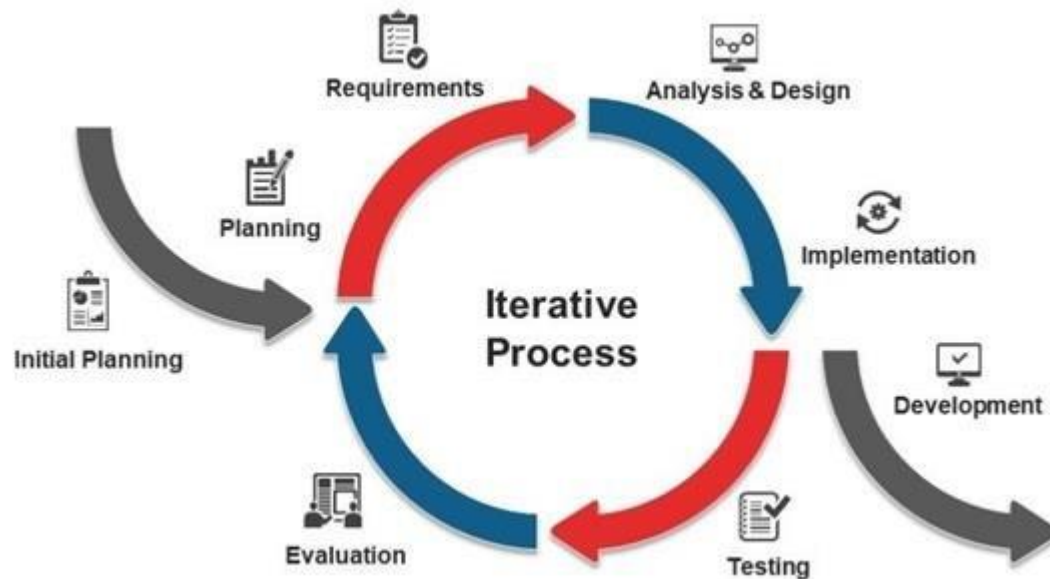
#	Metric	Unit	Committed	Actual	Notes / References
1	Effort Usage	Person-day	280	275	
2	Defect Rate	No. Def/MM	5.2	3.36	
3	Review Efficiency	%	40%	30%	Dev: 40/45/50 Maintain: 45/50/55
4	Leakage Rate	No. Def/MM	0.23	0.3	Dev: 0/0.13/0.53 Maintain: 0/0.07/0.38
5	Timeliness	%	100	100	90/95/100
6	Requirement Completeness		100	100	90/95/100 (failed if <=75%)

### 1.3 Project Risks

#	Risk Description	Impact	Possibility	Response Plans
1	Members have argued, conflicted with others, leads to stressful working environments.	Medium	High	Define clear tasks for each member and agree on ideas before starting work.
2	The questions generated by AI and those checked for duplicate content using a Python model may not be entirely accurate.	Low	Medium	Communicate the potential limitations to users, setting realistic expectations about AI outputs.
3	Essay marking may not be entirely accurate	Low	Low	Communicate the potential limitations to users, setting realistic expectations about python model outputs.
4	Change requirements	High	High	Members engage in discussions regarding the prioritisation of requirements desired by the staff for modification and addition. Subsequently, these requirements are incorporated into each sprint to execute high-priority tasks.

## 2. Management Approach

### 2.1 Project Process



### 2.2 Quality Management

#### 2.2.1 Defect Prevention

- If a defect is identified, the relevant team or individual must be notified immediately.
- Each defect must be thoroughly assessed, considering factors such as the severity of the defect, its potential impact on the system, and the estimated time required to resolve it.
- A clear deadline for resolving the defect must be established and communicated.
- A contingency plan should always be in place to address any unforeseen issues that may arise during the resolution process.

#### 2.2.2 Reviewing

- The project manager must remain impartial and objective, without showing favoritism toward any team member. If an issue is identified, they must promptly notify the individual responsible for addressing the defect.
- The person accountable for the identified defects must promptly provide solutions to resolve the issue as quickly as possible.

### 2.3 Project Training Plan

Training Area	Participants	When, Duration	Waiver Criteria
ReactJS	AnhLQH, DuyPA	Start 4/9/2024 Duration 2 weeks	Mandatory
Java Spring Boot	NamDD, DucLM, AnhND	Start 4/9/2024 Duration 2 weeks	Mandatory
Gitlab	AnhLQH, DuyPA, NamDD, DucLM, AnhND	Start 10/9/2024 Duration 1 day	Mandatory

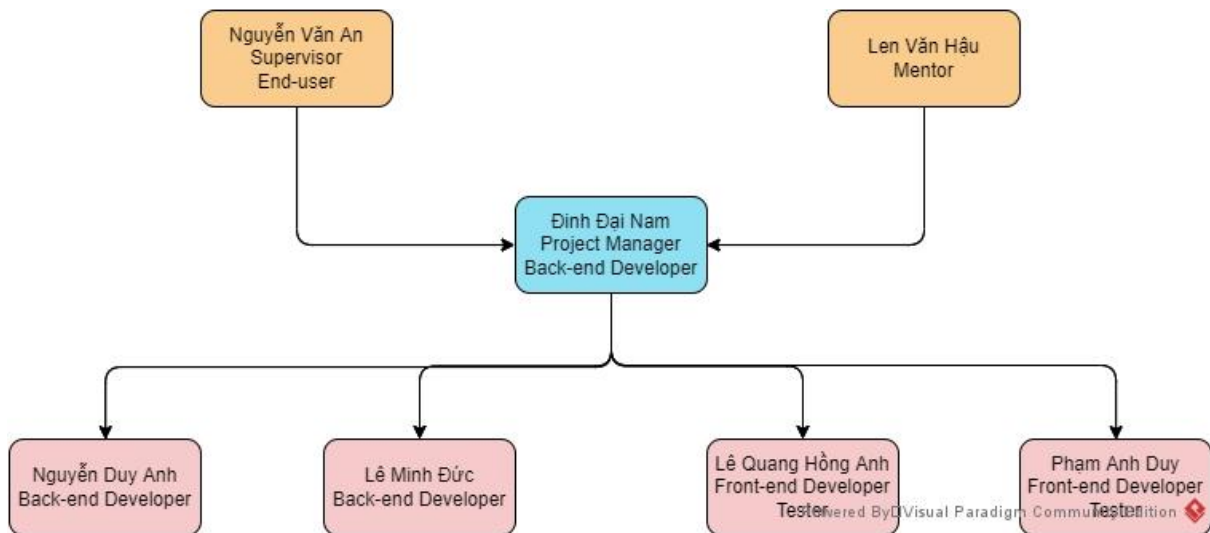
### 3. Project Deliverables

#	Deliverable	Due Date	Notes
1	Report 1 - Project introduction	13/9/2024	Overview, Product Background, Product Information, ...
2	Report 2 - Project management Plan	20/9/2024	Overview, Management Approach, Project Deliverables, ....
3	Report 3 - SRS	27/9/2024	Detail software requirements specification.
	Iteration 1		
4	Report 4 - SDS	11/10/2024	Provide software design specification, including architecture.
5	Report 5 - Test Document	18/10/2024	Outline the testing strategy, test cases and test results (UT, IT)
	Iteration 2		
6	Report 4 - SDS	25/10/2024	Provide software design specification, including architecture.
7	Report 5 - Test Document	1/11/2024	Outline the testing strategy, test cases and test results (UT, IT)
	Iteration 3		
8	Report 4 - SDS	8/11/2024	Provide software design specification, including architecture.
9	Report 5 - Test Document	15/11/2024	Outline the testing strategy, test cases and test results (UT, IT,ST)
10	Report 6 - Software User Guides	1/12/2024	User Guides



11	Report 7 - Final Report	16/12/2024	Final Codes & Documents
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#### 4. Responsibility Assignments



*R~Responsible; A~Accountable; C~Consult; I~Informed; <blank>- Omitted*

Responsibility	NamDD	DucLM	DuyPA	AnhLQH	AnhND
Document and Report					
Project Introduction Document	C	I	R	R	R
Project Management Plan	C	A	I	R	I
SRS Document	R	D	A	A	R
SDS Document	I	R	A	A	R
Software Testing Documentation	C	R	C	A	C

Software User Guide	A	R	R	C	I
Final Report	R	A	R	C	I
Presentation Slide	R	C	R	I	A
Analysis and Design					
System Architecture Design	R	A	I	A	R
Use case Diagram	A	I	C	A	R
Class Diagram	R	C	I	R	I
Sequence Diagram	C	R	I	I	R
Main Workflow	A		R	A	C
UI Design		C	A	R	R
Package Diagram	R	R	I	C	R
Implementation					
Decide technique and tools	R	C	R	I	A
Tracking of development work	R	A	C	R	I
Create coding convention				A	
Code back-end	C	A			
Code front-end		C			
Control source code	C	R	I	A	R
Deploy web to host server	I	R	R	C	A
Test					
Create Test Plan	C	R	A	I	R
Controlling testing activities	R	A	C	R	I
Create test report	R	A	I	A	C

Create unit test and bug log	A	R	R	C	I
Integration test	R	C	I	A	R
System test	A	R	C	I	A
Execute test	R	C	R	A	I
Report test result	C	A	R	R	A

## 5. Project Communications

Communication Item	Who/ Target	Purpose	When, Frequency	Type, Tool, Method(s)
Weekly Meeting	All team member	Report project progress	4 times per week	Offline/Online
End User Meeting	All team members	Explore and clarify the partner's requirements	Once per week	Offline
Daily Report	All team member	Report works to do, issue. Discuss about problems and tasks	Everyday	Online via Slack
Emergence Meeting	All team members	Find and brainstorm ideas to resolve urgent problems and issues	When someone has important problems	Online via Google Meet

## 6. Configuration Management

### 6.1 Document Management

#### Management tools:

- Docs Online: Document Reports, User Guide.
- Sheet Online: Test Case list.
- Canva: Slide Presentation.

### 6.2 Source Code Management

#### Management tools:

- Gitlab: Manage coding resource.

### 6.3 Tools & Infrastructures

Category	Tools / Infrastructure
Technology	ReactJS (Frontend), Java/Spring Boot (Backend), Python
Database	MySQL, Firebase
IDEs/Editors	Visual Studio Code, IntelliJ
Diagramming	Visual Paradigm
Documentation	Docs, Sheet, Canva
Version Control	GitLab (Source Codes), Google Drive (Documents)
Deployment server	Google Cloud
Project management	GitLab (Tasks, Defects, Issue Management)
Open Source	SBERT(UK PLab), MBART50(Facebook)
Testing	Postman, Junit