



Capstone Project 2

CMU-SE 451

SENIOR PROJECT MANAGEMENT SYSTEM FOR INTERNATIONAL SCHOOL

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Capstone Project 2

CMU-SE 451

Proposal

Version 1.1

Date: 25 Feb 2022

SENIOR PROJECT MANAGEMENT SYSTEM FOR INTERNATIONAL SCHOOL

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PROJECT INFORMATION

Project acronym	Senior Project Management System for International School		
Project Title	SPMS		
Start Date	18 Feb 2022	End Date	15 May 2022
Lead Institution	International School, Duy Tan University		
Project Mentor	Chau, Truong Ngoc		
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REVISION HISTORY

Version	Date	Comments	Author	Approval
v1.0	18/02/2022	Initial Release	All Members	x
v1.1	25/02/2022	Update document	Tien	x

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Tien, Nguyen Van <i>Scrum Master</i>		Date:
Phuoc, Ha Duc <i>Product Owner</i>		Date:
Huy, Truong Dong <i>Member</i>		Date:
Dat, Nguyen Thanh <i>Member</i>		Date:

1. Introduction

1.1. Purpose of document

- Define the business needs and problems in detail.
- Provide solutions for business needs.
- Provide an overview of resources, schedule, solution, and budget for the project.

The proposal merely introduces the project to the student development teams and provides the up-front information necessary for the team to develop a specification.

1.2. Project goal

During the current epidemic, organizing students to do projects has become difficult when all jobs have to be done online. It is difficult for students to access the project implementation process and the scientific council is also very difficult to organize for students to carry out the project. To solve this problem, the team decided to create SPMS to help organize and manage graduation projects for students easily. Students easily understand the implementation program and implement the management process. The Scientific Council easily manages students to carry out projects, view progress, evaluate or update notifications for students of timely changes, helping to reduce risks and capacity.

2. Problem definition

Currently, it becomes difficult for students to manage project implementation and students find it difficult to grasp and understand the process. The faculty uses google forms to collect student information and uses excel to store student information, mentors, registered topics, and timelines for projects. The implementation of changes or plans via email by each student also presents some risks as some students do not receive emails due to the wrong email supply or the dean is not able to send all students. To solve this problem, the team came up with an idea for a web-app capstone management system. It will help students easily register to participate and implement the project. The Faculty of International Studies will easily collect student information quickly and save time. Faculty will easily divide groups, mentors, and topics for students. After having a mentor, students will easily connect with group members and mentors instead of spending time sharing social media accounts. The website allows the Dean and team to control the student

project implementation process by stage, easily control the quality of each student group's work, and make timely adjustments. The Dean will easily divide the schedule for the project defense sessions and the council to attend that defense session. Students can easily receive the schedule in each stage and notify about their project defense session.

2.1. User needs

- Student

- Easily register and execute projects.
- Easy to understand the process and how to implement the project to be able to plan the work properly.
- Easy to manage task of project.
- Present and receive an assessment of the project at each stage to find a timely solution.
- Receive notifications about adjustments and plans from the faculty quickly so you can be well prepared for the project.

- Mentor

- Easily get the work schedule.
- Easily share topics for students.
- Easily manage the implementation process and evaluate the quality of students' work through each stage.

- Evaluator

- Easily score capstone project protection.

- Moderator

- Easily manage students registered to do projects and mentors.
- Easily create defenses.
- Perform group division and mentoring quickly by requirements.
- Easily create a notification.

- **Admin**

- Manage account.
- Manage template document.

2.2. Non-functional requirements

Below are the non-functional requirements that are being offered for the system:

- Portability and compatibility: The system is operated on a web-based platform and can run on any web browser.
- Usability: The system has a friendly and flexible user interface and a Filename great user experience.
- Reliability: The system has accurate and transparent data, functions that do exactly their jobs.

2.3. Functional requirements

Below are the functional requirements that are being offered for the system, which are the backbone of the project:

- **Admin**

- Manage account.
- Manage a document template.

- **Student**

- Register and execute projects.
- Register topic.
- Manage project implementation process.
- View information of group.
- View information of defense.
- Work schedule management.

- **Mentor**

- Submit topic template.
- View information of groups.
- Evaluate the work quality of team members.
- Manage project implementation process.

- **Moderator**
 - Manage group.
 - Manage defenses.
 - Manage mentor.
 - Notify plans and changes.
- **Evaluator**
 - Manage score.

3. Current status of art

Up to now, many schools are still implementing the same management method and there are not many websites to support the management. In some student projects such as Management project graduation project of students of some universities such as Da Nang Polytechnic University.

Table 3: Compare SPMS with other the project.

Feature	SPMS	Capstone Management Project
Manage students	x	x
Manage mentors	x	x
Manage topics	x	x
Manage document of project	x	
Manage a performance of project each stage	x	
Register and execute project	x	
Manage a schedule	x	
Manage a document template	x	
Manage a score	x	x
Evaluate and compare the level of labor	x	
Notify plans and changes.	x	
Work schedule management	x	

4. Engineering approach

4.1. Context diagram

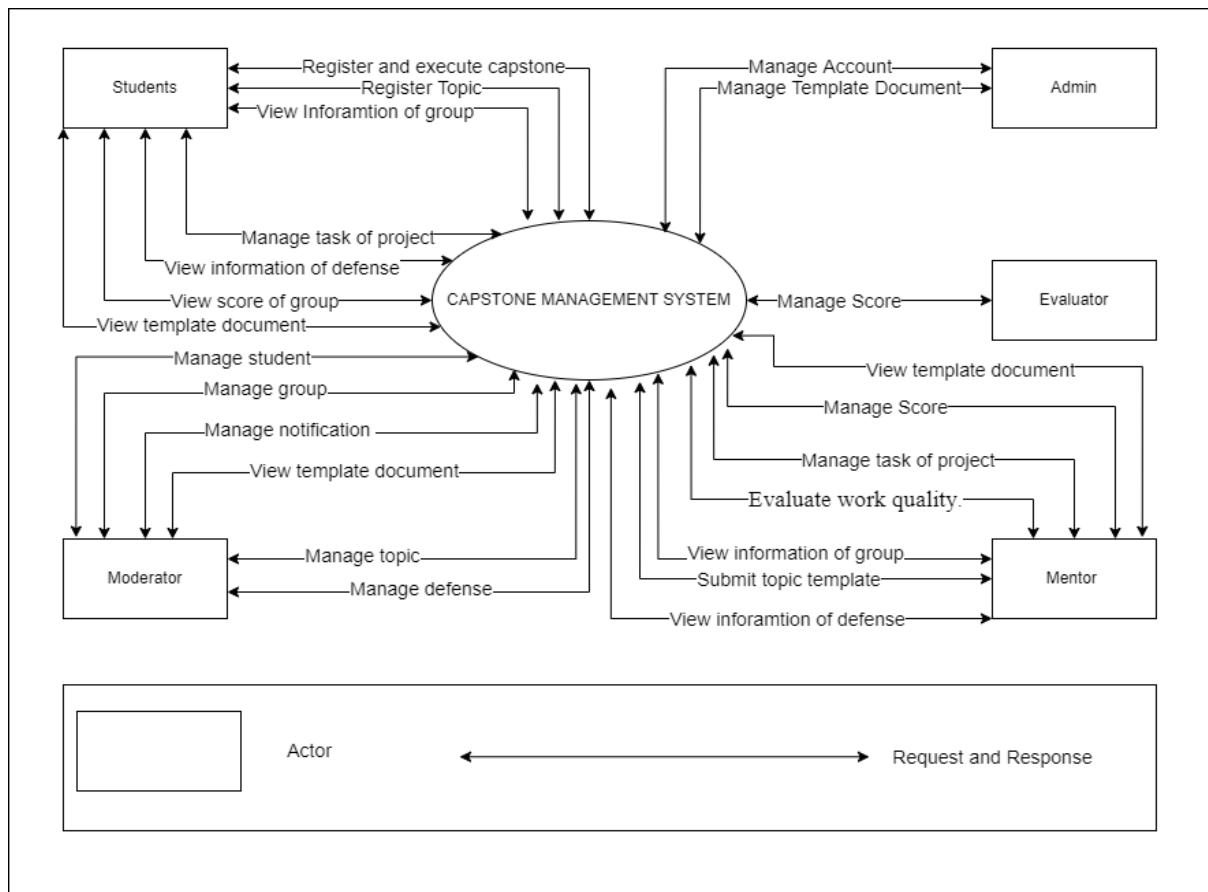


Figure 4.1: Context diagram.

- **Manage Account**
- Admin can add, update, delete account of user.
- **Manage template topic**
- Admin can upload, delete template document.
- Student can view and download template document.
- **Register and execute capstone**
- Student can fill in form information and submit it to register execute capstone.
- Student will wait to moderator approve and system will send account to mail of student.

- **Register topic**
 - Student can fill in form register topic and submit it to register topic for project.
 - Student can choose topic template of mentor in topic template list.
 - Moderator will approve and student can use it for capstone project.
- **Manage task for project**
 - Student can create stage for project.
 - In each stage student can create task and assign it for members.
 - In each task member can comment issue and report task done or late.
 - Mentor can see stage and comment in each task of project.
- **Manage student**
 - Moderator can add, update, delete student.
 - Moderator can approve for student can execute project and system will send account for student.
- **Manage group**
 - Moderator can create group and divide student and mentor for each group.
 - Moderator can update, delete and export file excel group list.
- **Manage defense**
 - Moderator can divide defense and assign positions to each person.
 - Moderator can update, delete and export file excel defense list.
- **Manage topic**
 - Moderator can view topic template list and topic of student list.
 - Moderator can approve for topic of student.
- **Manage notification**
 - Moderator can create, update, delete notification.
- **Submit topic template**
 - Mentor can upload file topic template or fill in form topic template for student.
- **Manage score**
 - Mentor and Evaluator can input score of each member of group.
 - Evaluator can export file summary score.

- **Evaluate work quality**
 - The system will aggregate the percentage of each member's contribution and sum it up.
 - Mentor can see and evaluate work quality of each member.

4.2. Technical to develop system

- **Database:**
 - Postgres SQL.
- **Back-end:**
 - Programming Language: JavaScript.
 - Framework: Express (NodeJS), Nodemon, sequenlize.
- **Front-end:**
 - Programming language: HTML, CSS, JavaScript.
 - Framework: React, Redux, Material-UI.
- **Client:**
 - Operating System: Windows.
 - Web Browser: Chrome.

5. Tasks and deliverables

5.1. Tasks

Table 5.1: Task schedule.

No.	Task name	Description
1		Startup
1.1	Project kick off meeting	Encountering the developer team and stakeholders to clear out the goal, defining the base elements for the project, and other project planning activities.
1.2	Discuss Project	Brighten up the current ideal to both the developer team and stakeholder.
1.3	Create Document	Release the artifacts or schematics relate to the project to the product owner, including proposal, user story, Product backlog, Project Plan....

2	Development	
2.1	Sprint Planning	A Sprint begins with a sprint planning session that sets goals and plans details for the work to be done.
2.2	Sprint 1	Design Database Design UI Code function Moderator and Student Data connection with application Integration API Testing
2.3	Sprint 2	Code function for Mentor Update function to Student Data connection with the application Integration API Testing
2.4	Sprint 3	Code function for Evaluator Update function to Mentor Data connection with the application Integration API Testing
2.4	Sprint 4	Code function for Admin Update function to Evaluator Data connection with the application Integration API Testing
3	Project's meeting	A private meeting between members to make a plan what will be presented to the customer in the final release.
4	Final Release	Release the final version to product owner with complete function.

5.2. Deliverables

Table 5.2: Deliverable document.

No.	Activities	Deliverables
1	Project Proposal	Project Proposal Document
2	Project Plan	Project Plan Document
3	Product Backlog	Product Backlog Document
4	Architecture Document	Architecture Document
5	Database Design	Database Design Document
6	Interface Design	Interface Design Document
7	Test Plan	Test Plan Document
8	Test Case	Test Case Document
9	Acceptance Criteria	Acceptance Criteria
10	Sprint Backlog & Burndown Chart	Sprint Backlog & Burndown Chart
11	Team Reflection	Team Reflection
12	Technologies Stack	Technologies Stack Document

6. Project management

6.1. About Scrum

Scrum is an agile method, so it follows the principles of the Agile Manifesto (see also Agile Manifesto). In addition, Scrum operates on three core values, also known as Scrum Scripps, including Scrutiny, Inspection, and Adaptation.

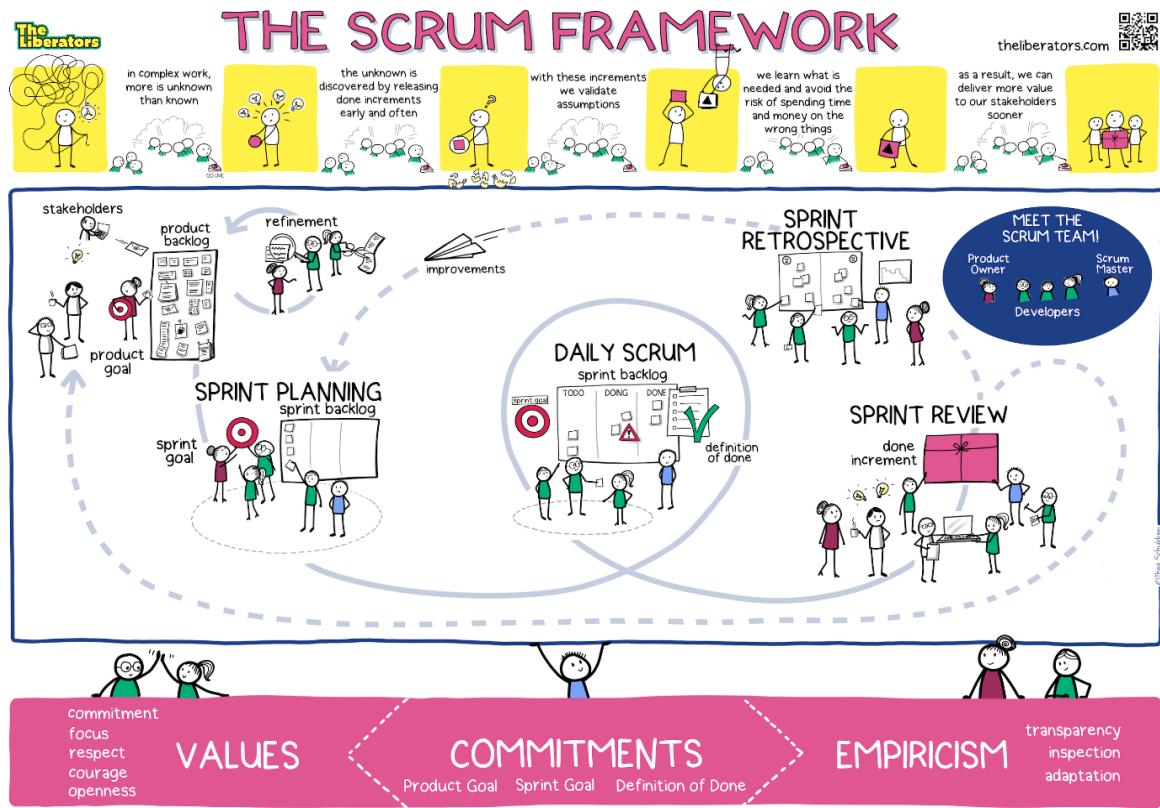


Figure 6.1: Scrum process.

Based on the empirical process control theory, Scrum uses iterative and incremental algorithms to optimize efficiency and control risk. Scrum is simple, easy to learn, and has wide applicability. To be able to use Scrum, we need to understand and apply the elements that makeup Scrum include the core values (also known as the “three legs”, or the three pillars of Scrum), roles, Events, and Scrum-specific artifacts.

6.2. Why Scrum

- Our team has 4 people.
- The project will be continuously horizontally scaled up.
- There is only a short amount of time to finish the project.

So based on those constraints, we decided to choose SCRUM as the project lifecycle.

6.3. Cost person/hours

Table 6.3.: Cost person/hour.

Resource Name	Type	Max. Units	Std. Rate	Ovt. Rate
Tien, Nguyen Van	Work	100%	\$2.00/hr	\$3.00/hr
Phuoc, Ha Duc	Work	100%	\$2.00/hr	\$3.00/hr
Huy, Truong Dong	Work	100%	\$2.00/hr	\$3.00/hr
Dat, Nguyen Thanh	Work	100%	\$2.00/hr	\$3.00/hr

6.4. Total cost estimate

Table 6.4.1: Details of the teamwork.

Description	Amount	Unit
Number of members	4	Person
Number of working per day	4	Hours
The cost per hour per number	2	USD
The number of working days	90	Days

Table 6.4.2: Total cost estimate of the project.

No.	Criteria	Price(USD)	Total (USD)
1	Working hours	2	Number of members * Number of working per day * The cost per hour per number * The number of working days = $4*4*2*90 = 2880$
2	Other costs	200	Other cost * Number of members= 200 * 4 =800
Total (USD)			Working hours + Other costs = 2880+ 800 = 3680

6.5. Detail of task assignment

Table 6.5: Schedule description.

No.	Task name	Duration (days)	Start	Finish
	SPMS	90	15 Feb 2022	15 May 2022
1	Initial and plan	14	15 Feb 2022	28 Feb 2022
1.1	Project's kick-off meeting	3	15 Feb 2022	17 Feb 2022
1.2	Discuss a project idea	1	18 Feb 2022	18 Feb 2022
1.3	Create proposal document	1	19 Feb 2022	19 Feb 2022
1.4	Present proposal & approval project	1	20 Feb 2022	20 Feb 2022
1.5	Create user story	2	21 Feb 2022	22 Feb 2022
1.6	Create product backlog	1	23 Feb 2022	23 Feb 2022
1.7	Create project plan	2	24 Feb 2022	25 Feb 2022
1.8	Create architecture document	1	26 Feb 2022	26 Feb 2022
1.9	Create database document	1	27 Feb 2022	27 Feb 2022
1.10	Create user interface	1	28 Feb 2022	28 Feb 2022
2	Development	72	01 Mar 2022	11 May 2022
2.1	Sprint 1	18	01 Mar 2022	18 Mar 2022
2.2	Sprint 2	26	19 Mar 2022	13 Apr 2022
2.3	Sprint 3	18	14 Apr 2022	01 Apr 2022
2.4	Sprint 4	10	02 May 2022	11 May 2022

3	Closing	4	12 May 2022	15 May 2022
3.1	Release	1	12 May 2022	12 May 2022
3.1	Project meeting	2	13 May 2022	14 May 2022
3.2	Final submission	1	15 May 2022	15 May 2022

7. Project constraints

Table 7: A table describing the constraints affecting the project.

Constraint	Constraints Description	Guidelines for Acceptance
Economic	Because most of the topics are for students to do, the project currently has no funding.	Elements for consideration are design costs, production costs, maintenance costs, operating costs, and sales price.
Environmental	Due to the impact of the epidemic, everyone works online, so the performance may be lower but all is to the best of everyone's ability.	The impact of the design on the environment as well as the impact of the environment (e.g. temperature range, humidity, vibration, electromagnetic interference immunity, and shock) on the design should be considered. Design for recycling and design to use recycled materials should also be considered
Ethical	None	Ethical considerations can be broad. Areas that are typically addressed include intellectual property, reverse-engineering, privacy, security, and the conflict between cost and safety.
Public health, safety, and welfare	None	Includes safety standards as well as the impact of the design on users (for

		example, electrical or physical hazards).
Social and Global	The system was created to support students in the Department of International Studies of DTU.	Addresses aspects such as benefits, risks, the man-machine interface, the acceptance of products by the intended user or by society at large, global and socially responsible engineering.
Cultural	None	Which cultural characteristics could influence the approach? How does the design from different cultures differ?
Sustainability	None	Refers to the sustainability of resources, including material, energy, supplies, manufacturing techniques, personnel, operation, and the need for additional infrastructure, as well as the sustainability of the design including reliability, lifetime, durability, reusability, maintainability.

8. Conclusion

It is expected that the company will complete it in 90 days and divide it into 4 sprint. Through the process of implementing the project, the group has synthesized the knowledge during their time at the school. In the future, the center will handle projects, support the management and implementation of projects of the International Faculty and support students to easily implement. Security is easy to use, reducing time and risk for students and faculty. This is a special product in the field of learning where online techniques do not respond.

9. References

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DESCRIPTION OF PRODUCT REQUIREMENTS

Group: C2SE.23

Project: Senior Project Management System for International School

Date: 18/02/2022

I. Short description of product ideas (less than 7 statements)

- Managing a Capstones project is an important and necessary task for the university. Previously, the school only organized manually using available support tools such as google form to get student information to register for capstones projects, using excel to temporarily store information, and using drop box software students submit documents. This makes it time-consuming for teachers and difficult for students to access the capstone project process.
- Realizing this problem, the team decided to build a system that could help the lecturer manage students' capstones, manage student workflow, grades and communicate plans to students in a timely manner. Fast and accurate way to save time and effort. Students can track and understand their capstone process.

II. Requirements

High-level Functional Requirements	1. Manage students 2. Manage project implementation process 3. Manage topics 4. Manage group 5. Notice of plans and changes.
------------------------------------	--

	6. Report the working status of the groups.
	7. Manage Score of students.
	8. Manage mentor and the board of members

Quality Attributes Requirements (example related to issues: Ease Use, Easy to Like, Easy to Learn, Easy to Understand, Easy to Buy / Yes, ...)	1. Easy to use
	2. Easy to understand

Operation Requirements (related to issues: Speed, Accuracy, Performance, Stability, Load Resistance, Scalability, Safety, ...)	1. The system has accurate and transparent data, functions that do exactly their job.
	2. Performance (processing lower than 30s)
	3. Low latency (Time to respond to user)

Environment & Operation Requirements (related to issues: physical impacts on the environment, interact with relevant or existing systems, conditions for product commercialization, ...)	1. Run in web browser
	2. Windows, Linux, Mac OS.

Requirements for Maintenance & Support	1.
	2.
	3.
	4.
	5.

Security/ Safety Requirements (related to issues: conditions of use / access to products, personal freedom, inspection, ...)	1. Personal freedom (Guest user)
	2. Inspection (System Admin)

Culture Requirements	1.
	2.
	3.
	4.
	5.

Evaluate the complexity of engineering problems	✓	1. Involving wide-ranging or conflicting technical issues
		2. Having no obvious solution
		3. Addressing problems not encompassed by current standards and codes

	4. Involving diverse groups of stakeholders
✓	5. Including many component parts or sub-problems
	6. Involving multiple disciplines
	7. Having significant consequences in a range of contexts

Standard requirements	✓	1. Code standard. (GNU, Oracle standard for Java, ...)
		2. Design standard. (design patterns, object-oriented analysis and design,...).
		3. IEEE (1058, 1540, 830, 1016, 829, 1012, 1008)
		4. ISO/IEC/IEEE 12207:2017 (TCVN 10539:2014); ISO/IEC 25051:2006(TCVN 10540:2014);
		5. Other standards. (related to specific topics)



Capstone Project 2

CMU-SE 451

Project Plan

Version 1.2

Date: 13 May 2022

SENIOR PROJECT MANAGEMENT SYSTEM FOR INTERNATIONAL SCHOOL

Submitted by

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Huy, Truong Dong

Dat, Nguyen Thanh

Approved by

Chau, Truong Ngoc

Proposal Review Panel Representative:

Name _____ Signature _____ Date _____

Capstone Project 2- Mentor:

Name _____ Signature _____ Date _____

PROJECT INFORMATION

Project acronym	Senior Project Management System for International School		
Project Title	SPMS		
Start Date	18 Feb 2022	End Date	15 May 2022
Lead Institution	International School, Duy Tan University		
Project Mentor	Chau, Truong Ngoc		
Scrum master / Project Leader & contact details	Tien, Nguyen Van Email: cnnguyenvantien@gmail.com Tel: 0704.042.832 Student ID: 24211208536		
Partner Organization			
Project Web URL			
Team members	Name	Email	Tel
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24211206470	Dat, Nguyen Thanh	ngthanhdat521@gmail.com	0767836541

REVISION HISTORY

Version	Date	Comments	Author	Approval
v1.0	27/02/2022	Initial Release	All Members	x
v1.1	14/04/2022	Update document	Tien	x
v1.2	13/05/2022	Format document	Phuoc	x

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Phuoc, Ha Duc <i>Product Owner</i>		Date:
Huy, Truong Dong <i>Member</i>		Date:
Dat, Nguyen Thanh <i>Member</i>		Date:

1. Project overview

1.1. Project description

Table 1.1: Project description.

Project code	SPMS	Contract type	Internal project
Customer		End-user	Students and lecturers of Duy Tan University
Project type	Internal	Project Manager/ Scrum master	Tien, Nguyen Van
Project Category	Development	Business domain	Application
Application type	Website		

1.2. Scope and purpose

1.2.1. Purpose

- Define the business needs and problems in detail.
- Provide solutions for business needs.
- Provide overview about resources, schedule, solution and budget for the project.

The proposal merely introduces the project to the student development teams, and provides the up-front information necessary for the team to develop a specification.

1.2.2. Scope

During the current epidemic, organizing students to do projects has become difficult when all jobs have to be done online. It is difficult for students to access the project implementation process and the scientific council is also very difficult to organize for students to carry out the project. To solve this problem, the team decided to create SPMS to help organize and manage graduation projects for students easily. Students easily understand the implementation program and implement the management process. The Scientific Council easily manages students to carry out projects, view progress, evaluate or update notifications for students of timely changes, helping to reduce risks and capacity.

1.3. Assumptions and constraints

Table 1.3: Assumptions and constraints.

No	Description	Note
Assumptions		
1	Nodejs version v14.8.0 (or above) and lower version not supported.	Scope
Constraints		
1	The project is developed within 90 days.	Schedule
2	The project shall conform to security requirements specified.	Security
3	The product operates at a high level of performance.	Quality
4	The application operation in website.	Scope
5	The project will be implemented by a team including 4 members.	Resources
6	The financial estimation for the project is at a budget limit of \$3680	Budget

1.4. Project objectives

1.4.1. Standard Objectives

Table 1.4.1: Standard Objectives.

Metric	Unit	Committed	Note
Start Date	dd-mm-yyyy	15-02-2022	
End Date	dd-mm-yyyy	15-05-2022	
Duration	days	90	
Team Size	Person	4	
Billable Effort	Person-day	\$2	
Number of work hours per day for one engineer	Person-hour	4	

1.4.2. Specific Objectives

- Based on human resources, allowable time and budget, we will build a Senior Project Management System for International School.
- The system operates with high performance and safety for the user. User security data is encrypted and stored carefully, avoiding data loss.
- The deployment system is minimized defects and good control of risks by the project team.
- Strengthen brand promotion activities and bring products to users.

1.5. Project risk

Table 1.5: Project risk.

Risk	Description	Probability	Impact	Mitigation Strategy
Incorrect requirements	Developing the product which does not accord with the requirements	3	5	Discuss and communicate frequently with Stakeholders
Estimate working time	Actual working time is not enough to finish a task compared to the estimated previous time	2	4	Review old tasks and evaluations to estimate for the new task. Replan for each sprint.
People	Team member who is ill, has health problems, or busy	4	3	Notify the scrum master (or ask a colleague to help you) Complete the assigned tasks when possible

Team Communication	Team members can conflict with each other while discussing something related to the project. Working online	4	2	Conduct a meeting to share knowledge, experience and learning methods
External problems	It has power problems, laptop, personal computer, network system	3	3	Find another workplace (library, coffee shop, ...) Notify the scrum master to assign appropriate tasks

2. Project development approach

2.1. Technical process

2.1.1. Reasons for selecting

- To keep up with today's increasingly changing technology trends, we want a truly flexible and easy project development model to adapt to that change. Our project will develop more new features in the future. We will continuously update and apply new technologies that increase the attractiveness and intelligence of the application.
- Currently, our team is a small team with little experience in project development. Therefore, we cannot avoid problems that arise in the software development stages and requirements can be changed to be more suitable. For the traditional model that requires managerial skills and high accuracy, it will not suit our team.

2.1.2. Agile methodology

- Agile software development refers to a group of software development methodologies based on iterative development, where requirements and solutions evolve through collaboration between self-organizing cross-functional teams.
- Agile software development is more than frameworks such as Scrum, Extreme Programming, or Feature-Driven Development (FDD).
- Agile software development is an umbrella term for a set of frameworks and practices based on the values and principles expressed in the Manifesto for Agile Software Development and the 12 Principles behind it. When you approach software development in a particular manner, it's generally good to live by these values and principles and use them to help figure out the right things to do given your particular context.

2.1.3. Scrum process

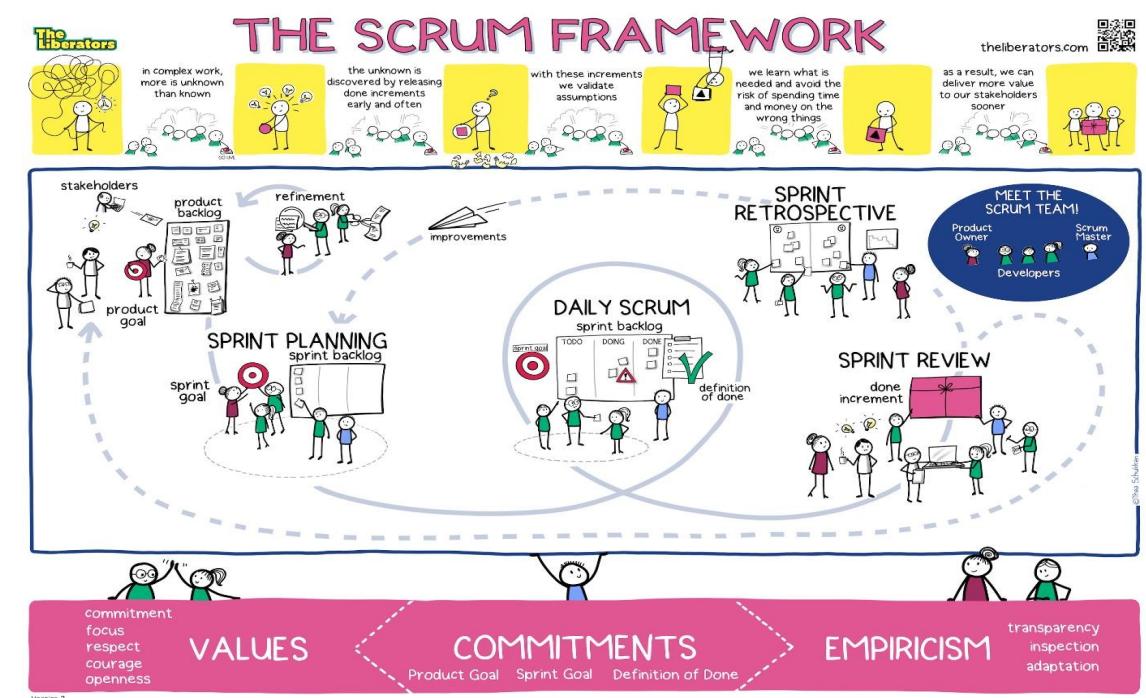


Figure 2.1.3: Scrum model.

- Scrum is a subset of Agile. It is a lightweight process framework for agile development, and the most widely-used one.
- Scrum is most often used to manage complex software and product development, using iterative and incremental practices. Scrum significantly increases productivity and reduces time to benefits relative to classic “waterfall” processes. Scrum

processes enable organizations to adjust smoothly to rapidly-changing requirements and produce a product that meets evolving business goals.

- An agile Scrum process benefits the organization by helping it to
- Increase the quality of the deliverables.
- Cope better with change (and expect the changes).
- Provide better estimates while spending less time creating them.
- Be more in control of the project schedule and state.

2.2. Quality management

2.2.1. Strategy for meeting quality objectives

Table 2.2.1: *Strategy for meeting quality objectives.*

Strategy	Expected benefits
Do defect prevention using the standard defect prevention guidelines and process; use standards developed in JavaScript for coding.	10–20% reduction in defect injection rate and about 2% improvement in productivity.
Group review of program specs for first few/ logically complex use cases. Group review of design docs/first time generated code by project leader, developer, and one consultant.	Improvement in quality as overall defect removal efficiency will improve; some benefits in productivity as defects will be detected early.
Introduction of Agile methodology and implementing the project in iterations. Milestone analysis and defect prevention exercise will be done after each Iteration.	Approximately 5% reduction in defect injection rate and 1% improvement in overall productivity.

2.2.2. Quality control

Table 2.2.2: *Quality control.*

Review Item	Type of Review	Reviewer	When
Project plan, Project schedule, CM Plan	One-person review	Mentor	End of Initiation stage
Product Backlog, User story	Group review	Mentor	End of 90% requirements
Design document, object model	Group review	Mentor	End of 90% design
Sprint Backlog	One-person review	Scrum master	Beginning of each stage
Test case	Group review	Team member	End of detailed
Code	Group review One-person review	Team member Mentor	After coding for first few programs

2.2.3. Measurements program

Table 2.2.3: *Measurements program.*

Data to be collected	Purpose	Responsible	When
Size: No. of KLOC/ FP	Early estimate project cost	PM/SM	At the end of stages
Effort: No. person-day	Calculate project effort for scheduling	Team members	Daily
Quality: No. defects detected	Early evaluate product quality and the feasibility of the project	Reviewer, Tester	Right after the review/test
Schedule	Divide work and allocate resources properly, ensure the project is completed on time and on budget	PM/SM	Weekly and at the end of stages

2.3. Unit testing strategy

Grey Box:

- It is a combination of a Black Box and White Box testing. It is the type of testing in which the tester is aware of the internal functionality of a method or unit but not in a deep level like white box testing. In this, the user is partially aware of the internal functionality of a system.
- Write test cases before fixing the defect and independent of each other.
- Write cases to verify behavior, also write test cases to ensure the performance of the code
- Execute test cases continuously and frequently.

2.4. Integration testing strategy

Big bang Strategy:

- All components are put together at the same time, there is no order, except all are integrated at the same time.
- Towards the end of the project, we started to apply this tactic to test the entire application. Beta testing is a type of user acceptance testing where the product team gives a nearly finished product to a group of target users to evaluate product performance in the real world.

3. Estimate

3.1. Size

Table 3.1: Size.

Software Scale Drivers	
Precedence	Nominal
Development Flexibility	Nominal
Architecture / Risk Resolution	Nominal
Team Cohesion	Very High
Process Maturity	Nominal

3.2. Effort

Table 3.2: Effort.

Activity/ Process	Total budge ted Effort Usage (USD)	Total % budg eted Effor t Usage (%)	Sprint 1		Sprint 2		Sprint 3		Sprint 4	
			USD	%	USD	%	USD	%	USD	%
Requirement	350	9.51	150	12.5	100	9.52	100	12.82	0	0
Design	300	8.15	100	8.33	100	9.52	50	6.41	50	9.09
Coding & Unit Testing	1500	40.76	500	41.67	500	47.62	300	38.46	200	36.36
Testing	230	6.25	50	4.167	50	4.76	80	10.27	50	9.09
Deployment	250	6.79	50	4.167	50	4.76	50	6.41	100	18.18
Support for accepting	150	4.08	50	4.167	50	4.76	50	6.41	0	0
Project planning	250	6.79	50	4.167	50	4.76	50	6.41	50	9.09
Project review	250	6.79	50	4.167	50	4.76	50	6.41	50	9.09
Training	400	10.87	200	16.67	100	9.52	50	6.41	50	9.09
Total (USD)	3680	100	1200	100	1050	100	780	100	550	100

3.3. Schedule

3.3.1. Project milestone & deliverables

Table 3.3.1: *Project milestone & deliverables.*

No.	Task	Duration (days)	Time Start	Time Finish
1	Initial and plan	14	15 Feb 2022	28 Feb 2022
2	Development	72	01 Mar 2022	11 May 2022
2.1	Sprint 1	18	01 Mar 2022	18 Mar 2022
2.2	Sprint 2	26	19 Mar 2022	13 Apr 2022
2.3	Sprint 3	18	14 Apr 2022	01 Apr 2022
2.4	Sprint 4	10	02 May 2022	11 May 2022
3	Final Release	1	15 May 2022	15 May 2022

3.3.2. Schedule detail

Table 3.3.2: *Schedule detail..*

No.	Task Name	Duration (Days)	Start	Finish	Assign to
1	Initial and plan	14	15 Feb 2022	28 Feb 2022	Team
1.1	Project's Kick-off Meeting	3	15 Feb 2022	17 Feb 2022	Team
1.2	Discuss about project idea	1	18 Feb 2022	18 Feb 2022	Mentor, Team
1.3	Create Proposal Document	1	19 Feb 2022	19 Feb 2022	Team
1.4	Present Proposal & Approval Project	1	20 Feb 2022	20 Feb 2022	Team
1.5	Create User Story	2	21 Feb 2022	22 Feb 2022	Tien
1.6	Create Product Backlog	1	23 Feb 2022	23 Feb 2022	Tien
1.7	Create Project Plan	2	24 Feb 2022	25 Feb 2022	Tien
1.8	Create Architecture Document	1	26 Feb 2022	26 Feb 2022	Dat
1.9	Create Project Plan	3	15 Sep 2021	17 Sep 2021	Tien

1.10	Create Database document	1	27 Feb 2022	27 Feb 2022	Phuoc
1.11	Create User Interface	1	28 Feb 2022	28 Feb 2022	Huy
2	Development	72	01 Mar 2022	11 May 2022	Team
2.1	Sprint 1	18	01 Mar 2022	18 Mar 2022	Team
2.1.1	Initial Sprint 1	3	01 Mar 2022	03 Mar 2022	Team
2.1.1.1	Sprint planning meeting	1	01 Mar 2022	01 Mar 2022	Team
2.1.1.2	Create Sprint Backlog for Sprint 1	1	02 Mar 2022	02 Mar 2022	Tien
2.1.1.3	Create Test Plan document for Sprint 1	1	03 Mar 2022	03 Mar 2022	Tien
2.1.2	Design UI	2	02 Mar 2022	03 Mar 2022	Huy, Dat
2.1.3	Design Test Case	2	02 Mar 2022	03 Mar 2022	Phuoc
2.1.4	Code	10	04 Mar 2022	14 Mar 2022	Team
2.1.4.1	[Front-end] Home [User]	1	04 Mar 2022	04 Mar 2022	Huy
2.1.4.2	[Front-end] Login [User]	1	05 Mar 2022	05 Mar 2022	Dat
2.1.4.3	[Front-end] Logout [User]	1	06 Mar 2022	06 Mar 2022	Dat
2.1.4.4	[Front-end] Register [User]	1	06 Mar 2022	06 Mar 2022	Dat
2.1.4.6	[Front-end] User Information [User]	1	07 Mar 2022	07 Mar 2022	Dat
2.1.4.7	[Front-end] Update Information [User]	1	08 Mar 2022	08 Mar 2022	Dat
2.1.4.8	[Front-end] List Account[User[Admin]]	1	05 Mar 2022	05 Mar 2022	Huy
2.1.4.9	[Front-end] Update Account[User[Admin]]	1	10 Mar 2022	10 Mar 2022	Dat
2.1.4.10	[Front-end] Create Account[User[Admin]]	1	11 Mar 2022	11 Mar 2022	Dat

2.1.4.11	[Front-end] get List Students[User[Moderator]]	1	06 Mar 2022	06 Mar 2022	Huy
2.1.4.12	[Front-end] Create Students[User[Moderator]]	1	07 Mar 2022	07 Mar 2022	Huy
2.1.4.13	[Front-end] Update Students[User[Moderator]]	1	08 Mar 2022	08 Mar 2022	Huy
2.1.4.14	[Front-end] Introduce Capstone[User]	1	09 Mar 2022	09 Mar 2022	Huy
2.1.4.15	[Front-end] get List Mentor[User[Moderator]]	1	12 Mar 2022	12 Mar 2022	Dat
2.1.4.16	[Front-end] Update Mentor [User[Moderator]]	1	13 Mar 2022	13 Mar 2022	Dat
2.1.4.17	[Front-end] get list Notification [User]	1	13 Mar 2022	13 Mar 2022	Dat
2.1.4.18	[Front-end] update Notification [User[Moderator]]	1	07 Oct 2021	07 Oct 2021	Dat
2.1.4.19	[Back-end] Sign in [User]	2	04 Mar 2022	05 Mar 2022	Tien
2.1.4.20	[Back-end] Register to execute capstone	2	06 Mar 2022	07 Mar 2022	Tien
2.1.4.21	[Back-end] get All Account[User]	1	04 Mar 2022	04 Mar 2022	Phuoc
2.1.4.22	[Back-end] insert Account[User]	1	05 Mar 2022	05 Mar 2022	Phuoc
2.1.4.23	[Back-end] delete Account[User]	1	06 Mar 2022	06 Mar 2022	Phuoc
2.1.4.24	[Back-end] update Account[User]	1	07 Mar 2022	07 Mar 2022	Phuoc
2.1.4.25	[Back-end] get All Student[User]	1	07 Mar 2022	07 Mar 2022	Tien
2.1.4.26	[Back-end] delete Student[User]	1	08 Mar 2022	08 Mar 2022	Tien

2.1.4.27	[Back-end] approve for Student[User]	1	09 Mar 2022	09 Mar 2022	Tien
2.1.4.28	[Back-end] update Student[User]	1	10 Mar 2022	10 Mar 2022	Tien
2.1.4.29	[Back-end] get All Mentor [User]	1	08 Mar 2022	08 Mar 2022	Phuoc
2.1.4.30	[Back-end] insert Mentor [User]	1	09 Mar 2022	09 Mar 2022	Phuoc
2.1.4.31	[Back-end] delete Mentor[User]	1	09 Mar 2022	09 Mar 2022	Phuoc
2.1.4.32	[Back-end] update Mentor [User]	1	10 Mar 2022	10 Mar 2022	Phuoc
2.1.4.33	[Back-end] export file Mentor [User]	1	11 Mar 2022	11 Mar 2022	Tien
2.1.4.34	[Back-end] get All Notification[User]	1	11 Mar 2022	11 Mar 2022	Phuoc
2.1.4.35	[Back-end] Create Notification[User]	1	12 Mar 2022	12 Mar 2022	Phuoc
2.1.4.36	[Back-end] delete Notification[User]	1	13 Mar 2022	13 Mar 2022	Phuoc
2.1.4.37	[Back-end] update Notification[User]	1	14 Mar 2022	14 Mar 2022	Phuoc
2.1.5	Testing	2	15 Mar 2022	16 Mar 2022	Huy, Dat
2.1.6	Fix bug	2	16 Mar 2022	17 Mar 2022	Huy, Dat
2.1.7	Re-testing	1	17 Mar 2022	17 Mar 2022	Huy, Dat
2.1.8	Release Sprint 1	1	18 Mar 2022	18 Mar 2022	Team
2.1.8.1	Sprint review meeting	1	18 Mar 2022	18 Mar 2022	Team
2.1.8.2	Retrospective	1	18 Mar 2022	18 Mar 2022	Team
2.2	Sprint 2	26	19 Mar 2022	13 Apr 2022	Team

2.2.1	Initial Sprint 2	3	19 Mar 2022	21 Mar 2022	Team
2.2.1.1	Sprint planning meeting	1	19 Mar 2022	19 Mar 2022	Team
2.2.1.2	Create Sprint Backlog for Sprint 2	1	20 Mar 2022	20 Mar 2022	Tien
2.2.1.3	Create Test Plan document for Sprint 2	1	21 Mar 2022	21 Mar 2022	Tien
2.2.2	Design UI	4	20 Mar 2022	23 Mar 2022	Huy, Dat
2.2.3	Design Test Case	2	20 Mar 2022	21 Mar 2022	Phuoc
2.2.4	Code	14	24 Mar 2022	06 Apr 2022	Team
2.2.4.1	[Front-end] List Group [User]	3	24 Mar 2022	26 Mar 2022	Huy
2.2.4.2	[Front-end] detail Group [User]	3	27 Mar 2022	29 Mar 2022	Huy
2.2.4.3	[Front-end] Create Group [Moderator]	3	30 Mar 2022	01 Apr 2022	Huy
2.2.4.4	[Front-end] update Group [Moderator]	2	02 Apr 2022	03 Apr 2022	Huy
2.2.4.5	[Front-end] assign mentor for Group [Moderator]	2	04 Apr 2022	05 Apr 2022	Huy
2.2.4.6	[Front-end] Delete Group [Moderator]	1	06 Apr 2022	06 Apr 2022	Huy
2.2.4.7	[Front-end] Submit Topic[User[Student]]	1	24 Mar 2022	24 Mar 2022	Dat
2.2.4.8	[Front-end] Update Topic[User[Student]]	1	25 Mar 2022	25 Mar 2022	Dat
2.2.4.9	[Front-end] Topic List[User]	1	26 Mar 2022	26 Mar 2022	Dat
2.2.4.10	[Front-end] Detail Topic[User]	2	27 Mar 2022	28 Mar 2022	Dat
2.2.4.11	[Front-end] Approve Topic[User[Moderator]]	1	29 Mar 2022	29 Mar 2022	Dat

2.2.4.12	[Front-end] Submit Topic Template[User[Moderator]]	2	30 Mar 2022	31 Mar 2022	Dat
2.2.4.13	[Front-end] Topic template List[User]	1	01 Apr 2022	01 Apr 2022	Dat
2.2.4.14	[Front-end] Upload file Topic Template[User]	1	02 Apr 2022	02 Apr 2022	Dat
2.2.4.15	[Front-end] Group List [User]	2	24 Mar 2022	25 Mar 2022	Tien
2.2.4.16	[Back-end] detail Group [User]	2	26 Mar 2022	27 Mar 2022	Tien
2.2.4.17	[Back-end] Group List of mentor [Mentor]	1	28 Mar 2022	28 Mar 2022	Tien
2.2.4.18	[Back-end] Create Group [Moderator]	2	29 Mar 2022	30 Mar 2022	Tien
2.2.4.19	[Back-end] update Group [Moderator]	2	31 Mar 2022	01 Apr 2022	Tien
2.2.4.20	[Back-end] assign mentor for Group [Moderator]	1	02 Apr 2022	02 Apr 2022	Tien
2.2.4.21	[Back-end] Delete Group [Moderator]	1	03 Apr 2022	03 Apr 2022	Tien
2.2.4.22	[Back-end] export file Group List [Moderator]	1	04 Apr 2022	04 Apr 2022	Tien
2.2.4.23	[Back-end] Submit Topic of Student[Student]	1	24 Mar 2022	24 Mar 2022	Phuoc
2.2.4.24	[Back-end] Submit Topic of mentor[Mentor]	1	25 Mar 2022	25 Mar 2022	Phuoc
2.2.4.25	[Back-end] Upload file Topic template[Mentor]	2	26 Mar 2022	27 Mar 2022	Phuoc
2.2.4.26	[Back-end] approve for Student[Moderator]	1	28 Mar 2022	28 Mar 2022	Phuoc
2.2.4.27	[Back-end] Topic Student List [User]	1	29 Mar 2022	29 Mar 2022	Phuoc

2.2.4.28	[Back-end] Topic template List [User]	1	29 Mar 2022	29 Mar 2022	Phuoc
2.2.4.29	[Back-end] update topic [Student]	1	30 Mar 2022	30 Mar 2022	Phuoc
2.2.4.30	[Back-end] update topic [Mentor]	1	31 Mar 2022	31 Mar 2022	Phuoc
2.2.4.31	[Back-end] delete topic[Student]	1	01 Apr 2022	01 Apr 2022	Phuoc
2.2.4.32	[Back-end] delete topic[Mentor]	1	01 Apr 2022	01 Apr 2022	Phuoc
2.2.4.33	[Back-end] export file Topic Student List[Moderator]	2	02 Apr 2022	03 Apr 2022	Phuoc
2.2.4.34	[Back-end] Upload file document template[Moderator]	2	03 Apr 2022	04 Apr 2022	Dat
2.2.5	Testing	2	05 Apr 2022	06 Apr 2022	Huy, Dat
2.2.6	Fix bug	4	07 Apr 2022	10 Apr 2022	Huy, Dat
2.2.7	Re-testing	1	11 Apr 2022	11 Apr 2022	Huy, Dat
2.2.8	Release Sprint 2	2	12 Apr 2022	13 Apr 2022	Team
2.2.8.1	Sprint review meeting	1	12 Apr 2022	12 Apr 2022	Team
2.2.8.2	Retrospective	1	13 Apr 2022	13 Apr 2022	Team
2.3	Sprint 3	18	14 Apr 2022	1 May 2022	Team
2.3.1	Initial Sprint 3	3	14 Apr 2022	16 Apr 2022	Team
2.3.1.1	Sprint planning meeting	1	14 Apr 2022	14 Apr 2022	Team
2.3.1.2	Create Sprint Backlog for Sprint 3	1	15 Apr 2022	15 Apr 2022	Tien
2.3.1.3	Create Test Plan document for Sprint 3	1	16 Apr 2022	16 Apr 2022	Phuoc

2.3.2	Design UI	2	15 Apr 2022	16 Apr 2022	Huy, Dat
2.3.3	Design Test Case	1	16 Apr 2022	16 Apr 2022	Tien
2.3.4	Code	10	17 Apr 2022	26 Apr 2022	Team
2.3.4.1	[Front-end] List stage and task [User]	4	17 Apr 2022	20 Apr 2022	Dat
2.3.4.2	[Front-end] View stage of project [User]	3	21 Apr 2022	22 Apr 2022	Dat
2.3.4.3	[Front-end] Report contribution	3	23 Apr 2022	25 Apr 2022	Dat
2.3.4.4	[Front-end] Create Defense [Moderator]	2	17 Apr 2022	18 Apr 2022	Huy
2.3.4.5	[Front-end] assign group for Defense [Moderator]	2	19 Apr 2022	20 Apr 2022	Huy
2.3.4.6	[Front-end] Update Defense [Moderator]	2	21 Apr 2022	22 Apr 2022	Huy
2.3.4.7	[Front-end] List Defense [Moderator]	2	23 Apr 2022	24 Apr 2022	Huy
2.3.4.8	[Front-end] Detail Defense [Moderator]	2	22 Apr 2022	26 Apr 2022	Huy
2.3.4.9	[Back-end] List stage and task [User]	2	17 Apr 2022	18 Apr 2022	Phuoc
2.3.4.10	[Back-end] View stage of project [User]	2	19 Apr 2022	20 Apr 2022	Phuoc
2.3.4.11	[Back-end] Report contribution [Student]	2	21 Apr 2022	22 Apr 2022	Phuoc
2.3.4.12	[Back-end] Group contribution [Student]	2	23 Apr 2022	24 Apr 2022	Phuoc
2.3.4.13	[Back-end] Create Defense [Moderator]	2	17 Apr 2022	18 Apr 2022	Tien
2.3.4.14	[Back-end] assign group for Defense [Moderator]	1	19 Apr 2022	19 Apr 2022	Tien

2.3.4.15	[Back-end] Update Defense [Moderator]	1	20 Apr 2022	20 Apr 2022	Tien
2.3.4.16	[Back-end] List Defense [Moderator]	2	21 Apr 2022	22 Apr 2022	Tien
2.3.4.17	[Back-end] Detail Defense [Moderator]	2	23 Apr 2022	24 Apr 2022	Tien
2.3.4.18	[Back-end] Export defense list file [Moderator]	2	22 Apr 2022	26 Apr 2022	Tien
2.3.4.19	[Back-end] Delete Defense [Moderator]	2	22 Apr 2022	26 Apr 2022	Tien
2.3.5	Testing	1	27 Apr 2022	27 Apr 2022	Huy, Dat
2.3.6	Fix bug	1	28 Apr 2022	28 Apr 2022	Huy, Dat
2.3.7	Re-testing	1	29 Apr 2022	29 Apr 2022	Huy, Dat
2.3.8	Release Sprint 3	2	30 Apr 2022	01 May 2022	Team
2.3.8.1	Sprint review meeting	1	30 Apr 2022	30 Apr 2022	Team
2.3.8.2	Retrospective	1	01 May 2022	01 May 2022	Team
2.4	Sprint 4	11	02 May 2022	12 May 2022	Team
2.4.1	Initial Sprint 4	1	02 May 2022	02 May 2022	Team
2.4.1.1	Sprint planning meeting	1	02 May 2022	02 May 2022	Team
2.4.1.2	Create Sprint Backlog for Sprint 4	1	02 May 2022	02 May 2022	Tien
2.4.1.3	Create Test Plan document for Sprint 4	1	02 May 2022	02 May 2022	Phuoc
2.4.2	Design UI	1	03 May 2022	03 May 2022	Huy, Dat
2.4.3	Design Test Case	1	04 May 2022	04 May 2022	Tien
2.4.4	Code	6	05 May 2022	10 May 2022	Team
2.4.4.1	[Front-end] Submit Grade of Group	4	05 May 2022	08 May 2022	Huy

2.4.4.2	[Front-end] Report Grade of Group	2	09 May 2022	10 May 2022	Huy
2.4.4.3	[Back-end] Submit Grade of Group	4	05 May 2022	08 May 2022	Phuoc
2.4.4.4	[Back-end] Report Grade of Group	2	09 May 2022	10 May 2022	Phuoc
2.4.5	Testing	1	11 May 2022	11 May 2022	Huy, Dat
2.4.6	Fix bug	1	11 May 2022	11 May 2022	Huy, Dat
2.4.7	Re-testing	1	11 May 2022	11 May 2022	Huy, Dat
2.4.8	Release Sprint 4	1	12 May 2022	12 May 2022	Team
2.4.8.1	Sprint review meeting	1	12 May 2022	12 May 2022	Team
2.4.8.2	Retrospective	1	12 May 2022	12 May 2022	Team
3	Closing	3	13 May 2022	15 May 2022	Team
3.1	Release	1	13 May 2022	13 May 2022	Team
3.2	Project Meeting	1	14 May 2022	14 May 2022	Team
3.3	Final Submission	1	15 May 2022	15 May 2022	Team

3.3.3. Project schedule

The Effort estimation is documented in Sprint Backlog

3.4. Resource

Table 3.4: Resource.

Position	Member	Effort
Back-end Developer	Tien, Phuoc	
Front-end Developer	Huy, Dat	
Designer	All members	
Data Engineer	Tien, Phuoc	
Tester	Huy, Dat	

3.5. Infrastructure

Table 3.5: Infrastructure.

Work/Product	Purpose	Expected availability by	Note
Development Environment			
Win 10	Operating system to run application and tools for project	Construction stage	
Postgres SQL	Use open source database to management and store data	Construction stage	
HTML5, CSS3, JavaScript, material-ui	Development language for Web interface	Initiation stage	
React, Redux, hook	Framework, library for User Interface	Initiation stage	
Win 10	Operating system to run application and tools for project	Construction stage	
Hardware & Software			
Laptop	Deployment application		
Other Tools			
Git	Source version control	Definition stage	
Slack	Communication	Initiation stage	
Trello	Task tracking	Initiation stage	

3.6. Training plan

Table 3.6: Training plain.

Training Area	Participants	When, Duration	Waiver Criteria
Technical			
HTML, CSS, JavaScript	All members	7 days	Mandatory
ReactJS, NodeJS.	All members	7 days	Mandatory
Process			
Configuration management	All members	2 hrs.	If already trained
Group review	All members	4 hrs.	Mandatory
Git, Slack	All members	4.5 hrs.	Mandatory
Agile	All members	2 hrs.	Mandatory

4. Project organization

4.1. Organization structure

Table 4.1: Organization structure.

Role	Responsibility	Name
Scrum Master	<ul style="list-style-type: none"> - Communicate the value of Scrum. - Teach the organization on Scrum to maximize business value. - Preserve the integrity and spirit of the Scrum framework. - Serve as a coach and mentor to members of the Team. - Respectfully hold the Team, Product Owner and Stakeholders accountable for their commitments. - Continually work with the Team and business to find and implement improvements. 	Tien, Nguyen Van

	<ul style="list-style-type: none"> - As a timekeeper. - Helping the team agree on what they can achieve during each development sprint (or other period of time). - Facilitating the daily standup (sometimes called the daily scrum) and helping the team reach consensus on each of the three questions. - Helping the team continuously make progress on the project by making sure each person is working on the right tasks, helping to remove any obstacles to the team members' progress, and protecting the team from distractions. 	
Product Owner	<ul style="list-style-type: none"> - A spokesperson for the customer and needs to represent them. - Gathers, manages, and prioritizes the product backlog. - Has technical product knowledge or specific domain expertise. - Tracks progress towards the release of a product. 	Phuoc, Ha Duc
Developer	<ul style="list-style-type: none"> - Responsible for quality. - Responsible for delivering the potentially shippable product of the Application each sprint. - Report progress based on the remaining time. - Self-organized. - Owns the Sprint backlog. 	All members
Mentor	<ul style="list-style-type: none"> - Guide on the process. - Monitoring all activities of the Team. - Help with anything. - Reviews project documents - Reviews product. 	Chau, Truong Ngoc

4.2. Project team

Table 4.2: *Project team.*

Full Name	Position
Chau, Truong Ngoc	Mentor
Tien, Nguyen Van	Dev-team, Scrum master
Phuoc, Ha Duc	Dev-team, Product Owner
Huy, Truong Dong	Dev-team
Dat, Nguyen Thanh	Dev-team

5. Communication and reporting

Table 5: *Communication and reporting.*

Audience / Attendees	Topic / Deliverable	Frequency	Method
Scrum Master, Members	Daily meeting	Daily	Google Meeting/Slack Chat
Scrum Master, Members	Sprint Planning Meeting	When starting a sprint	Google Meeting
Scrum Master, Members, Mentor	Sprint Review Meeting	When finishing a sprint	Google Meeting
Scrum Master, Members	Sprint Retrospective	When the sprint review finish	Google meeting
Scrum Master, Members	Individual Meeting	When need	Google Meeting/Message
Scrum Master, Members, Mentor	Working report, review problems	Once a week	Google meeting

6. Configuration management

Table 6: Configuration management.

No	Tool	Content
1	Trello	Track member activities. Track the changing of the document.
2	Slack	Store document resource and designed components, daily scrum.
3	Google Meet	Discuss, meet online, stream and share problems.
4	Git hub	Repositories for open-source code of the project .

7. Security aspect

- The credential data is carefully secured by multi-layer encryption and data integrity is ensured. Regularly back up system data.
- Research on network attack prevention solutions to ensure data security, avoid being exploited and stolen data by hackers.
- Deploy project architecture with a high priority in security. Optimized architectural solutions enable the deployment of data security with 99% reliability.
- Social media, sharing and use of data must be approved by the end user and verified by the organization's management.

8. References

No	Reference item	Source	Note
1	Agile Scrum	https://www.atlassian.com/agile https://www.cprime.com/resources/what-is-agile-what-is-scrum/ https://www.agilealliance.org/article101/ The Scrum Framework by International Scrum Institute	
2	Software Standards	https://www.nws.noaa.gov/oh/html/developers_docs/General_Software_Standards.pdf https://standards.ieee.org/standard/12208-2017.html https://sw-eng.larc.nasa.gov/	

9. Definitions and acronyms

Acronym	Definition	Note
PM	Project Manager	
PTL	Project Technical Leader	
QA	Quality Assurance Officer	
CC	Infrastructure Configuration Controller	
DV	Developer	
URD	User Requirement Document	
SRS	Software Requirement Specification	
ADD	Architecture Design Document	
DDD	Detail Design Document	
TP	Test Plan	
TC	Test Case	
SC	Source Code	
CM	Configuration Management	
CSCI	Computer Software Configuration Items	
CI	Configuration Item	
CCB	Change Control Board	



Capstone Project 2

CMU-SE 451

Product Backlog

Version 1.1

Date: 23 Feb 2022

SENIOR PROJECT MANAGEMENT SYSTEM FOR INTERNATIONAL SCHOOL

Submitted by

Tien, Nguyen Van

Phuoc, Ha Duc

Huy, Truong Dong

Dat, Nguyen Thanh

Approved by

Chau, Truong Ngoc

Proposal Review Panel Representative:

Name _____ Signature _____ Date _____

Capstone Project 2- Mentor:

Name _____ Signature _____ Date _____

PROJECT INFORMATION

Project acronym	Senior Project Management System for International School		
Project Title	SPMS		
Start Date	18 Feb 2022	End Date	15 May 2022
Lead Institution	International School, Duy Tan University		
Project Mentor	Chau, Truong Ngoc		
Scrum master / Project Leader & contact details	Tien, Nguyen Van Email: cnnguyenvantien@gmail.com Tel: 0704.042.832 Student ID: 24211208536		
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Project Web URL			
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REVISION HISTORY

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v1.0	23/02/2022	Initial Release	All members	x
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SIGNATURE

Document Approvals: *The following signatures are required for approval of this document.*

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Phuoc, Ha Duc <i>Product Owner</i>		Date:
Huy, Truong Dong <i>Member</i>		Date:
Dat, Nguyen Thanh <i>Member</i>		Date:

1. Introduction

The agile product backlog in Scrum is a prioritized features list, containing short descriptions of all functionality desired in the product. When applying Scrum, it's not necessary to start a project with a lengthy, upfront effort to document all requirements. Typically, a Scrum team and its product owner begin by writing down everything they can think of for agile backlog prioritization. This agile product backlog is almost always more than enough for a first sprint. The Scrum product backlog is then allowed to grow and change as more is learned about the product.

1.1. Purpose

- Provide a prioritized features list, containing a short description of all functionality desired in the product.
- Lists everything that the product owner and Scrum team feels should be included in the software they are developing.

1.2. Scope

- Lists the user's role.
- Write all the user's requirements.
- Lists some main functions of the system.
- Short description of all the functionality desired in the product.
- Given the priority of each feature and function of the product.

1.3 References

No	Source	Note
1	https://www.visual-paradigm.com/scrum/what-is-product-backlog-in-scrum/	What is Product Backlog in Scrum? Who Responsible for It?
2	https://www.scrum-institute.org/The_Scrum_Product_Backlog.php	The Scrum Product Backlog - International Scrum Institute

2. Product backlog specification

Priority and Estimates

Priorities are set from high (H), medium (M) and low (L):

- Priorities of some user stories can be the same with others.
- If a user story has dependencies, it must have lower priority than its dependencies.

Table 2.1: Product backlog specification (Sprint 1).

No.	As a/an	I want	so that I can	Priority (H, M, L)
PB01	User	Access into the system	I can use features of system with my role	M
PB02	User	Log out of the system	I can stop using the system. I can login after I want to use the system next time	L
PB03	Admin	Manage account for user	User can receive an account and use a system	L
PB04	Moderator	I can update, approve an information of student	Student can receive account to use system	M
PB05	Moderator	I can create, update, delete notification for user use system	Student and mentor can receive a notification easily and quickly	M
PB06	Student	Register to execute capstone	I can have account after moderator approved it	M
PB07	Moderator	I can create, update, delete an information of mentor	I can export file mentor list	M

Table 2.2: Product backlog specification (Sprint 2).

No.	As a	I want to	so that	Priority (H, M, L)
PB08	Moderator	I can create, update, delete an information of group and assign mentors for each group	Student can view information of group and quickly connect with member in group	H
PB09	Moderator	View list topic and approve or reject topic of each team	student can know result topic	M
PB10	Student	Submit topic or choose topic template of mentor to execute project	I can wait to moderator approve or reject topic.	H
PB11	Mentor	Submit or upload topic template for student	Student can choose topic to execute project	M
PB12	Admin	Upload file template document	Student can view or download to use it for project	M

Table 2.3: Product backlog specification (Sprint 3).

No.	As a	I want to	so that I can	Priority (H, M, L)
PB13	Student	Create stage and task for each stage	I can easily manage project and assign task for member	H
PB14	Mentor	Mentor can see and evaluate work quality of each member	I can evaluate a performance working of each member in group to give their score	H
PB15	Student	The student will aggregate the percentage of each member's contribution and sum it up	Mentor can see and evaluate work quality of each member	H
PB16	Moderator	I can create, update, delete an information of defense and assign evaluator for each group	Student can view information of defense	H

Table 2.4: Product backlog specification (Sprint 4).

No.	As a	I want to	so that I can	Priority (H, M, L)
PB17	Mentor	Submit score for group in defense	Student can see score and I can export file summary score	M
PB18	Student	Submit score for group in defense	Student can see score and evaluator can export file summary score	M

3. Challenges

Table 3: Challenges.

No.	Challenge	Condition
1	Time	Project completion time limit in 90 days so time to complete project be restricted
2	Budget	Budget limit \$3680
3	Human Resources	Team limit with 4 members and 1 mentor develops the system
4	Technical	Apply many new current technique
5	Requirements	Follow owner requirements and market

4. Stakeholders and user description

Table 4: Stakeholders and user description.

No.	Name	Description	Role
1	Student	Main user who will see follow capstone and submit assignment	Interact with the application include: view information, group, project timeline, topic, news & announcements and manage project
2	Mentor	Manager of group student	Manage group and up topic of the system
3	Moderator	Manager of group mentor, student, evaluator	Interact with the application include : manage Student, group, mentor, defenses, project, news & announcements, schedule
4	Evaluator	Manager of evaluate	Manage evaluate
5	User	Include all student, mentor, moderator, evaluator	Use the functions available on the system
6	Admin	System administrator	Manage all user accounts, backup data and maintain the system



Capstone Project 2

CMU-SE 451

User Story

Version 1.1

Date: 23 Feb 2022

SENIOR PROJECT MANAGEMENT SYSTEM FOR INTERNATIONAL SCHOOL

Submitted by

Tien, Nguyen Van

Phuoc, Ha Duc

Huy, Truong Dong

Dat, Nguyen Thanh

Approved by

Chau, Truong Ngoc

Proposal Review Panel Representative:

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Capstone Project 2- Mentor:

Name _____ Signature _____ Date _____

PROJECT INFORMATION

Project acronym	Senior Project Management System for International School		
Project Title	SPMS		
Start Date	18 Feb 2022	End Date	15 May 2022
Lead Institution	International School, Duy Tan University		
Project Mentor	Chau, Truong Ngoc		
Scrum master / Project Leader & contact details	Tien, Nguyen Van Email: cnnguyenvantien@gmail.com Tel: 0704.042.832 Student ID: 24211208536		
Partner Organization			
Project Web URL			
Team members	Name	Email	Tel
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SIGNATURE

Document Approvals: *The following signatures are required for approval of this document.*

Chau, Truong Ngoc <i>Mentor</i>		Date:
Tien, Nguyen Van <i>Scrum Master</i>		Date:
Phuoc, Ha Duc <i>Product Owner</i>		Date:
Huy, Truong Dong <i>Member</i>		Date:
Dat, Nguyen Thanh <i>Member</i>		Date:

1. Introduction

In software development, a User Story is one or more sentences that describe the natural language (not the technical language) or the business language of the end user or system user to record what User need to do or not do their job or duty. User stories are used in methods such as Agile software development as the basis for defining system functions such as business development and to facilitate management of requirements. Help yourself know "who", "what" and "why" in a short, simple request, often limited only by details that can be written on a piece of sticky note or scrap paper. small.

User stories written by business User are the primary way of User because they understand most of the system's processes, workflows and functions so it is working right now. User stories can also be written by Dev to make non-functional requirements (like security, performance, quality, etc.).

1.1. Purpose

- Provide a prioritized features list, containing a short description of all functionality desired in the product.
- Lists everything that the product owner and Scrum team feels should be included in the software they are developing.

1.2. Scope

- Write all the user's requirements.
- Lists some main functions of the system and acceptance criteria of each function.
- Short description of all the functionality desired in the product.
- Given the priority of each feature and function of the product.

1.3. References

No	Source	Note
1	https://www.visual-paradigm.com/guide/agile-software-development/what-is-user-story/	What is User Story?
2	https://www.atlassian.com/agile/project-management/user-stories	User Stories with Examples and Template

2. User Stories

Priority and Estimates

Priorities are set from high (H), medium (M) and low (L):

- Priorities of some user stories can be the same with others.
- If a user story has dependencies, it must have lower priority than its dependencies.

2.1. Sprint 1

2.1.1. Login

Table 2.1.1: Login (PB01).

As a User		
I want to access into the system so that I can use features of system with my role.		
Login	Project: Senior Project Management System for International School	Priority: High
Actor: User	Acceptance Criteria	
Story: User want to access into the system.	<ul style="list-style-type: none"> - Minimum password length 8 characters maximum 50 characters. - Enter the correct username and password, then I can log into the system. - Enter wrong username or password, then I can't login to system. 	

2.1.2. Logout

Table 2.1.2: Logout (PB02).

As a User		
I want to log out of the system so that I can stop using the system. I can login after I want to use the system next time.		
Logout	Project: Senior Project Management System for International School	Priority: High
Actor: User	Acceptance Criteria	
Story: User want to log out of the system.	<ul style="list-style-type: none"> - The actor clicked the logout button, I will exit the system and return home. - Delete actor login sessions (including user information). 	

2.1.3. Register and execute projects

Table 2.1.3: Register and execute projects (PB06).

As a student		
I want to register to execute capstone so that I can receive an account to use CMS after moderator approved.		
Register and execute projects	Project: Senior Project Management System for International School	Priority: Medium
Actor: Student	Acceptance Criteria	
Story: The student want to register to execute capstone.	<ul style="list-style-type: none"> - Minimum password length 6 characters maximum 50 characters. - Enter the correct username and password, then I can log into the system. - I entered wrong username or password, I want to be told exactly what I am wrong. 	

2.1.4. Create a new account

Table 2.1.4: Create a new account (PB03.1).

As a admin		
I want to manage account for user so that user can receive an account and use a system		
Create a new account	Project: Senior Project Management System for International School	Priority: Medium
Actor: Admin	Acceptance Criteria	
Story: Admin wants to manage account for user.	<ul style="list-style-type: none"> - Admin wants to send any password to the user's email. - Generate notification of failed or successful processing. - Display error message when information is invalid. 	

2.1.5. View account list

Table 2.1.5: *View account list (PB03.2).*

As a admin		
I want to view list account so that I can check information of account.		
List account	Project: Senior Project Management System for International School	Priority: Medium
Actor: Admin	Acceptance Criteria	
Story: Admin view list account was register execute a capstone.	<ul style="list-style-type: none"> - The admin can see all existing information account in the system on the home screen. 	

2.1.6. Update an account

Table 2.1.6: *Update an account (PB03.3).*

As an admin		
I want to update information of account so that I can update an information of account		
Update the account	Project: Senior Project Management System for International School	Priority: Low
Actor: Admin	Acceptance Criteria	
Story: Admin wants to update information of account.	<ul style="list-style-type: none"> - Admin wants to change information about a user account. He/she must login to admin account, choose right account, change account information and click update button. - Displays the support buttons for adding, deleting and editing. - Information must be updated every day after a change has been made. - The system will send a success message if valid. Opposite, the system must inform an error message. 	

2.1.7. Delete an account

Table 2.1.7: Delete an account (PB03.4).

As a admin		
I want to delete an account so that account can't use system		
Delete account	Project: Senior Project Management System for International School	Priority: Low
Actor: Admin	Acceptance Criteria	
Story: Admin wants to delete an account.	<ul style="list-style-type: none"> - Admin wants to delete an account. He/she must choose the user account and click the delete button. - The system will send a success message if valid. Opposite, the system must inform an error message. - Displays the support buttons for deleting and editing. - Information must be updated every day after a change has been made. 	

2.1.8. Approve account

Table 2.1.8: Approve account (PB04.1).

As a Moderator		
I want to view list student was register execute a capstone so that I can check information of Student and approve to send account.		
Approve account	Project: Senior Project Management System for	Priority: Medium
Actor: Moderator	Acceptance Criteria	
Story: The moderator wants to view list student was register execute a capstone and approve to send account.	<ul style="list-style-type: none"> - The actor can see all existing information Student in the system on the home screen. 	

2.1.9. Update a student

Table 2.1.9: *Update a student (PB04.2).*

As a Moderator		
I want to update information for student so that I can update some information of student		
Update a student	Project: Senior Project Management System for International School	Priority: Medium
Actor: Moderator	Acceptance Criteria <ul style="list-style-type: none"> - Displays the support buttons for edit and approved. - Information must be updated every day after a change has been made. - The system will send a success message if valid. Opposite, the system must inform an error message. 	
Story: The moderator wants to update information for student.		

2.1.10. View a student

Table 2.1.10: *View a student (PB04.3).*

As a Admin or Moderator or Lecturer or Student		
I want to view student's information.		
View a student	Project: Senior Project Management System for International School	Priority: Low
Actor: Admin, Moderator, Lecturer, Student	Acceptance Criteria <ul style="list-style-type: none"> - The actor signed 	
Story: view student's information.		

2.1.11. View student list

Table 2.1.11: *View student list(PB04.4).*

As a Admin or Moderator		
I want to view student list so that I can see amount of student involve.		
View student list	Project: Senior Project Management System for International School	Priority: Low
Actor: Admin, Moderator	Acceptance Criteria	
Story: View student list.		

2.1.12. Update a lecturer

Table 2.1.12: *Update a lecturer (PB07.1).*

As a Moderator		
I want to update information for lecturer so that I can update a name, degree and some information of lecturer.		
Update a lecturer	Project: Senior Project Management System for International School	Priority: Medium
Actor: Moderator	Acceptance Criteria	
Story: The moderator wants to update information for lecturer.	<ul style="list-style-type: none"> - Displays the support buttons for show, random, delete and edit. - Information must be updated every day after a change has been made. - The system will send a success message if valid. Opposite, the system must inform an error message. 	

2.1.13.View a lecturer

Table 2.1.13: *View a lecturer (PB07.2).*

As a Admin or Moderator or Lecturer or Student		
I want to view lecturer's information		
View a lecturer	Project: Senior Project Management System for International School	Priority: Low
Actor: Admin, Moderator, Lecturer, Student	Acceptance Criteria	
Story: view lecturer's information.		

2.1.14.View lecturer list

Table 2.1.14: *View lecturer list (PB07.3).*

As a Moderator		
I want to view list lecturer was join execute a capstone so that I can check information of lecturer.		
View lecturer list	Project: Senior Project Management System for International School	Priority: Medium
Actor: Moderator	Acceptance Criteria	
Story: View list lecturer was joined execute a capstone.	<ul style="list-style-type: none"> - The Moderator can see all existing lecturer's information in the system on the home screen. 	

2.1.15.Export lecturer list file

Table 2.1.15: Export lecturer list file (PB07.4).

As a Moderator		
I want to export file lecturer list so that I can share it for student.		
Export lecturer list file	Project: Senior Project Management System for International School	Priority: Medium
Actor: Moderator	Acceptance Criteria	
Story: Moderator export lecturer list file.		

2.1.16.View notification list

Table 2.1.16: View notification list (PB05.1).

As a Moderator		
I want to view list notification was created so that I can update notification		
View notification list	Project: Senior Project Management System for International School	Priority: Medium
Actor: Moderator	Acceptance Criteria	
Story: Moderator view notification list was created.	<ul style="list-style-type: none"> - The moderator can see all existing information notification in the system on the screen. 	

2.1.17.Create a notification

Table 2.1.17: Create a notification (PB05.2).

As a Moderator		
I want to create an information so that I can inform plan or change for student and lecturer.		
Create a notification	Project: Senior Project Management System for International School	Priority: Medium
Actor: Moderator	Acceptance Criteria	
Story: Moderator wants to create an information.	<ul style="list-style-type: none"> - Moderator wants to create an information. He/she must login to admin account. - Displays the support buttons for adding. - The system will send a success message if valid. Opposite, the system must inform an error message. 	

2.1.18.Delete a notification

Table 2.1.18: Delete a notification (PB05.3).

As a Moderator		
I want to delete notification from notification list.		
Delete a notification	Project: Senior Project Management System for International School	Priority: Low
Actor: Moderator	Acceptance Criteria	
Story: Moderator wants to delete a notification.	<ul style="list-style-type: none"> - Displays the support buttons for deleting and editing - Actor want to delete evaluator. - Actor want to a notification when I complete a task. - Information must be updated every day after a change has been made. - The system will send a success message if valid. <p>Opposite, the system must inform an error message.</p>	

2.1.19.Update a notification

Table 2.1.19: Update a notification (PB05.4).

As a Moderator		
I want to update notification a notification list.		
Update a notification	Project: Senior Project Management System for International School	Priority: Low
Actor: Moderator	Acceptance Criteria	
Story: Moderator wants to update a notification.	<ul style="list-style-type: none"> - Actor want to a notification when I complete a task. - Information must be updated every day after a change has been made - The system will send a success message if valid. <p>Opposite, the system must inform an error message.</p>	

2.2. Sprint 2

2.2.1. Submit a topic for project

Table 2.2.1: *Submit a topic for project(PB08.1).*

As a student		
I want to submit a topic for their project so that lecturer, moderator can see topic for project.		
Submit a topic for project	Project: Senior Project Management System for International	Priority: High
Actor: Student	Acceptance Criteria	
Story: The student wants to submit a topic for their project.	<ul style="list-style-type: none"> - Input the topic and click the submit button. - The system will send a success message if valid. Opposite, the system must inform an error message. - Information must be updated every day after a change has been made. 	

2.2.2. Update a topic for project

Table 2.2.2: *Update a topic for project (PB08.2).*

As a Student		
I want to update information for topic so that I can update a title and description.		
Update a topic for project	Project: Senior Project Management System for International School	Priority: Medium
Actor: Student	Acceptance Criteria	
Story: The student wants to update topic for project.	<ul style="list-style-type: none"> - Topic isn't approve by moderator 	

2.2.3. Active topic for project

Table 2.2.3: Active topic for project(PB09.1).

As a Moderator		
I want to approve or reject topic of each team so that student can know result topic.		
Active topic for project	Project: Senior Project Management System for International School	Priority: Medium
Actor: Moderator	Acceptance Criteria	
Story: The moderator wants to approve or reject topic.	<ul style="list-style-type: none"> - Choose the topic and click the submit button or refuse. - The system will send a success message if valid. Opposite, the system must inform an error message. - Information must be updated every day after a change has been made 	

2.2.4. View topic list of all group

Table 2.2.4: View topic list of all group (PB09.2).

As a Lecturer or Student or Moderator		
I want to view a list all topic submitted by groups so that I can check information of topic and a can active or reject a topic and comment for each topic.		
View topic list of all group	Project: Senior Project Management System for International School	Priority: High
Actor: Lecturer, moderator, student	Acceptance Criteria	
Story: The lecturer wants to view a list all topic submitted by groups.	<ul style="list-style-type: none"> - The actor can see all existing information topic in the system on the home screen. 	
Story: The student wants to view topic of my group.		

2.2.5. Create a group

Table 2.2.5: *Create a group (PB08.1).*

As a Moderator I want to assign student, lecturer to each group according to the rules so that I can manage member in each group.		
Create Group	Project: Senior Project Management System for International School	Priority: High
Actor: Moderator Story: The moderator wants to assign student, lecturer to each group according to the rules.	Acceptance Criteria <ul style="list-style-type: none"> - Generate notification of failed or successful processing. - Display error message when information is invalid. - Actors want to create the group lists assign member. - The group must be clear, with a lecturer, student and clear division of information. - Create notification of failure or success on processing. - Display error messages when the information is not valid. 	

2.2.6. Update a group

Table 2.2.6: *Update a group (PB08.2).*

As a Moderator I want to update information for each group so that I can remove or add new member for group.		
Update group	Project: Senior Project Management System for International School	Priority: Medium
Actor: Moderator Story: The moderator wants to update information for each group.	Acceptance Criteria <ul style="list-style-type: none"> - Choose right group, change account information. - Displays the support buttons for updating, deleting and editing. - Information must be updated every day after a change has been made. - The system will send a success message if valid. - Opposite, the system must inform an error message. 	

2.2.7. View a group

Table 2.2.7: View a group (PB08.3).

As a Lecturer		
I want to see detail a list group so that I can know member in my group and get information to contact.		
View a group	Project: Senior Project Management System for International School	Priority: Medium
Actor: Lecturer	Acceptance Criteria	
Story: The lecturer wants to see detail a list group.	<ul style="list-style-type: none"> - The actor chooses a group. I will be able to see details of the trip such as Full name, GPA, email, phone, note... 	

2.2.8. View group list

Table 2.2.8: View group list (PB08.4).

As a Moderator		
I want to see list group so that I can check information each group.		
View group list	Project: Senior Project Management System for International School	Priority: Medium
Actor: Moderator	Acceptance Criteria	
Story: The moderator wants to see list group.	<ul style="list-style-type: none"> - The actor can see all existing information in the system on the home screen. 	

2.2.9. Export group list and project file

Table 2.2.9: Export group list and project file (PB08.5).

As a Moderator		
I want to export file include group and project information so that I can share it for student.		
Export group list and project file	Project: Senior Project Management System for International School	Priority: Medium
Actor: Moderator	Acceptance Criteria	
Story: Moderator export group list and project file.		

2.2.10.Upload template document

Table 2.2.10: *Upload template document (PB11).*

As an Admin		
I want to upload template document so that student can use it for capstone.		
Upload template document	Project: Senior Project Management System for International School	Priority: Medium
Actor: Admin	Acceptance Criteria	
Story: The admin wants upload template document.	<ul style="list-style-type: none"> - The actor can see all existing information in the system on the home screen. 	

2.2.11.Upload template topic

Table 2.2.11: *Upload template topic(PB12).*

As a lecturer		
I want to upload template topic so that student can use it for capstone		
Upload template topic	Project: Senior Project Management System for International School	Priority: Medium
Actor: Lecturer	Acceptance Criteria	
Story: The Lecturer wants upload template topic.	<ul style="list-style-type: none"> - The actor can see all existing information in the system on the home screen. 	

2.3. Sprint 3

2.3.1. Create stages and tasks

Table 2.3.1: *Create stages and tasks(PB13).*

As a student (leader)		
I want to create a stage for project so that I can manage and assign task for member.		
Create stages and tasks	Project: Senior Project Management System for International School	Priority: High
Actor: Student	Acceptance Criteria	
Story: student want to create a stage and task to assign for member in group.		

2.3.2. Report contribution

Table 2.3.2: *Report contribution(PB4).*

As a Mentor		
I want to see and evaluate work quality of each member so that I can evaluate a performance working of each member in group to give their score.		
Report contribution	Project: Senior Project Management System for International School	Priority: Low
Actor: Mentor	Acceptance Criteria	
Story: The mentor wants to see and evaluate work quality of each member.	<ul style="list-style-type: none"> - The actor chooses an id group. - Mentor have a group 	

2.3.3. Group contribution

Table 2.3.3: *Group contribution(PB15).*

As a student		
I want to aggregate the percentage of each so that I can evaluate a performance working of group.		
Group contribution	Project: Senior Project Management System for International School	Priority: Medium
Actor: Student (leader)	Acceptance Criteria	
Story: The student (leader) wants to give a evaluate for each member of group.	<ul style="list-style-type: none"> - Otherwise create a message about the processing failed. - Show error messages when the information is not valid. 	

2.3.4. Create a defense

Table 2.3.4: *Create a defense (PB16.1).*

As a Moderator		
I want to create a defense and assign an evaluator for each group so that the council point for group's project		
Create a defense	Project: Senior Project Management System for International School	Priority: High
Actor: Moderator	Acceptance Criteria	
Story: The moderator wants to create defense and assign evaluator for each group.	<ul style="list-style-type: none"> - The lecture's defense time not duplicate. - The actor choose create 	

2.3.5. View a defense

Table 2.3.5: *View a defense (PB16.2).*

As a Moderator or Lecturer or Student		
I want to view a defense's information so that I can know start time, location, assign a group.		
View a defense	Project: Senior Project Management System for International School	Priority: High
Actor: Moderator, Lecturer, Student	Acceptance Criteria <ul style="list-style-type: none"> - The actor choose a defense. Application will display detail. 	
Story: view a defense detail.		

2.3.6. View defense list

Table 2.3.6: *View defense list (PB16.3).*

As a Moderator		
I want to view defense list so that I can manage it.		
View defense list	Project: Senior Project Management System for International School	Priority: Medium
Actor: Moderator	Acceptance Criteria	
Story: View defense list.		

2.3.7. Export defense list file

Table 2.3.7: *Export defense list file(PB16.4).*

As a Moderator		
I want to export defense list file		
Export defense list file	Project: Senior Project Management System for International School	Priority: Medium
Actor: Moderator	Acceptance Criteria	
Story: Moderator want to export defense list file.		

2.3.8. Update a defense

Table 2.3.8: *Update a defense (PB16.5).*

As a Moderator		
I want to update information for each defense so that I can remove or add new member and change information for defense.		
Update a defense	Project: Senior Project Management System for International School	Priority: Medium
Actor: Moderator	Acceptance Criteria	
Story: Moderator want to update a defense.	<ul style="list-style-type: none"> - The actor choose update button. - Defense is created. - Assign lecturer don't duplicate the differ defense time. 	

2.3.9. Delete a defense

Table 2.3.9: *View defense list (PB16.6).*

As a Moderator		
I want to delete a defense		
Delete a defense	Project: Senior Project Management System for International School	Priority: Medium
Actor: Moderator	Acceptance Criteria	
Story: Moderator want to delete a defense.	<ul style="list-style-type: none"> - The actor choose delete button. 	

2.4. Sprint 4

2.4.1. Submit student grade for lecturer

Table 2.4.1: *Submit student grade for mentor (PB17).*

As a Lecturer (Mentor)		
I want to Give a evaluate and grade for each member of group so that I can evaluate a performance working of group		
Submit student grade for lecturer	Project: Senior Project Management System for International School	Priority: High
Actor: Lecturer	Acceptance Criteria	
Story: The mentor gives a evaluate and grade for each member of group.	<ul style="list-style-type: none"> - Actors choose the group they will to give a evaluate detail from the list. - If a detailed evaluate of that group appears, see it as approved. - Otherwise create a message about the processing failed. - Show error messages when the information is not valid. 	

2.4.2. Submit student grade for evaluator

Table 2.4.2: *Submit student grade for evaluator (PB18).*

As an Lecturer (evaluator)		
I want to see a report the grade of group so that I can check a final grade for each student.		
Report a grade of group	Project: Senior Project Management System for International School	Priority: High
Actor: Lecturer (evaluator)	Acceptance Criteria	
Story: The moderator wants to see a report the grade of group.	<ul style="list-style-type: none"> - Actors choose the group they will to give a score detail from the list. - If a detailed score of that group appears, see it as approved. - Otherwise create a message about the processing failed. - Show error messages when the information is not valid. 	



Capstone Project 2

CMU-SE 451

Architecture Design

Version 1.2

Date: 08 May 2021

SENIOR PROJECT MANAGEMENT SYSTEM FOR INTERNATIONAL SCHOOL

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PROJECT INFORMATION

Project acronym	Senior Project Management System for International School		
Project Title	SPMS		
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1. Introduction

1.1. Project overview

The SPMS system is a system that could help the lecturer manage students' capstones, manage student workflow, grades and communicate plans to students in a timely manner. Fast and accurate way to save time and effort. Students can track and understand their capstone process.

1.2. Purpose

This specification covers following:

- Brief specification of the project, high level requirement.
- Detail quality attribution.
- System context, sequence diagrams.
- Architecture presented by various view types: Component and Connect, Module view and Allocation view.

2. Architecture driver

Business Problems:

- Students need assistance with details of a capstone.
- Users need an automated system to support submission, comment, assessment, project information or score information.

Business Need:

- A students can communication with group or mentor.
- Support for their students can assign, see project & document template when they need it.
- Students can view group details, score, evaluate and notification.
- Administrators can manage account user, project template and document.
- Teacher can manage students, mentor, group, new & announcements, defenses, schedule, project.

2.1. Business constraints

- Sources: 4 people.
- Project was started on: 15/02/2022.
- Project will be ended on: 15/05/2022.
- Project will be finished in 90 days (1440 hours).
- Cost: \$3680.

2.2. Technical constraints

- **Database:** Postgres SQL.
- **Back-end:**
 - Programming Language: Javascripts.
 - Framework: Express (NodeJS), Nodemon.
 - Libraries: Node-Postgres.
- **Front-end:**
 - Programming language: HTML, CSS, Javascript.
 - Framework: React, Hook.
- **Client:**
 - Operating System: Windows.
 - Web Browser: Chrome.

2.3. Function requirements

References to Product Backlog specification of ProductBacklogV1.0.docx.

2.4. Quality attributes

2.4.1. Utility table

There are following quality attributes that drive the design of architecture. Each quality attribute scenario is ranked with importance (I) defined by the Product Owner, and the estimated level difficulty (D). Both values are based on a scale of High (H) - Medium (M) - Low (L).

2.4.2. Quality attributes

2.4.2.1. Security

Table 2.4.2.1: Security.

Scenario: When user login into the system, the system will ensure security with user's account.	
Type	Security
Stimulus	Ensure security in the account.
Source of stimulus	User
Environment	Normal
Artifact stimulated	System
Response	Encode password
Response measure	Account protection

2.4.2.2. Usability

Table 2.4.2.2: Usability.

Scenario: When user has logged in successfully, the system will save user's session.	
Type	Usability
Stimulus	Save user's session
Source of stimulus	User
Environment	Normal
Artifact stimulated	System
Response	User access into the system
Response measure	User don't need to login more

2.4.2.3. Correctness

Table 2.4.2.3: Correctness.

Scenario: When the user performs operations, the corresponding information will be updated correctly.	
Type	Correctness
Stimulus	Performs operations
Source of stimulus	User
Environment	Normal
Artifact stimulated	System
Response	Change the information
Response measure	The corresponding information will be updated correctly.

2.4.2.4. Performance

Table 2.4.2.4: Performance.

Scenario: When user access the system, the requests from user will be processed maximum 3 seconds.	
Type	Performance
Stimulus	The requests from user will be process quickly
Source of stimulus	User
Environment	Normal
Artifact stimulated	System
Response	Data will display
Response measure	Maximum 3 seconds

2.4.2.5. Modifiability

Table 2.4.2.5: Modifiability.

Scenario: When user access into the system, user want to operate easily with features.	
Type	Modifiability
Stimulus	Update the User Interface after modifying data.
Source of stimulus	User
Environment	Normal
Artifact stimulated	System
Response	Make modification without affecting other functionality, Test modification, Deploy modification
Response measure	Repair time not exceed 3 hours (Time interval when the system is in degraded mode)

2.4.2.6. Availability

Table 2.4.2.6: Availability.

Scenario: When user access into the system, the website can usually access.	
Type	Availability
Stimulus	User access usually the website
Source of stimulus	User
Environment	Normal
Artifact stimulated	System
Response	Usually access
Response measure	20 hours / day

3. Architecture overview

This section shows the diagrams which bounds our target system and describes the architecture and interaction between components

3.1. System context

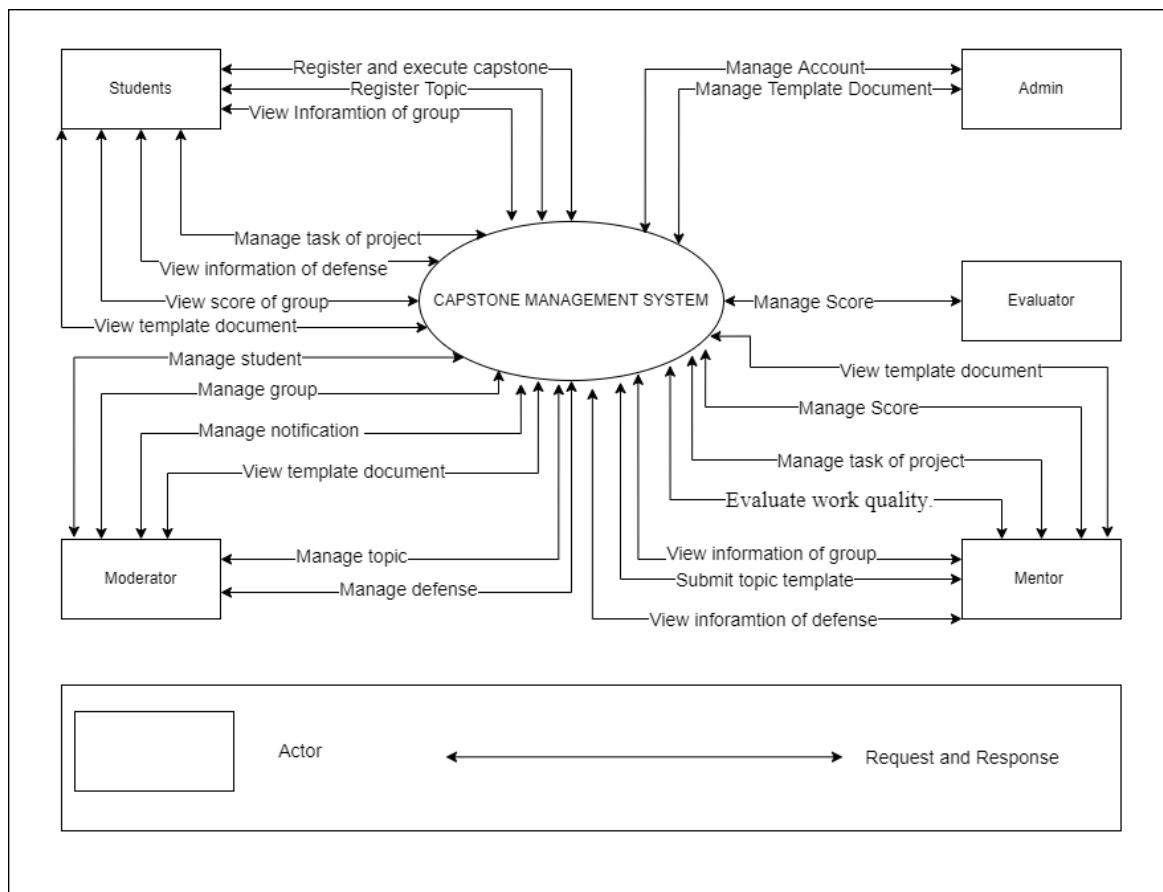


Figure 3.1: Context Diagram.

- Manage account:
- Admin can add, update, delete account of user.
- Manage template topic:
- Admin can upload, delete template document.
- Student can view and download template document.
- Register and execute capstone:
- Student can fill in form information and submit it to register execute capstone
- Student will wait to moderator approve and system will send account to mail of student.

- Register topic:
 - Student can fill in form register topic and submit it to register topic for project.
 - Student can choose topic template of mentor in topic template list.
 - Moderator will approve and student can use it for capstone project.
- Manage task for project:
 - Student can create stage for project.
 - In each stage student can create task and assign it for members.
 - In each task member can comment issue and report task done or late.
 - Mentor can see stage and comment in each task of project.
- Manage student:
 - Moderator can add, update, delete student.
 - Moderator can approve for student can execute project and system will send account for student.
- Manage group:
 - Moderator can create group and divide student and mentor for each group.
 - Moderator can update, delete and export file excel group list.
- Manage defense:
 - Moderator can divide defense and assign positions to each person.
 - Moderator can update, delete and export file excel defense list.
- Manage topic:
 - Moderator can view topic template list and topic of student list.
 - Moderator can approve for topic of student.
- Manage notification:
 - Moderator can create, update, delete notification.
- Submit topic template:
 - Mentor can upload file topic template or fill in form topic template for student.
- Manage score:
 - Mentor and Evaluator can input score of each member of group.
 - Evaluator can export file summary score.

- Evaluate work quality:
- The system will aggregate the percentage of each member's contribution and sum it up.
- Mentor can see and evaluate work quality of each member.

3.2. Component and connector

- We mainly used a C&C view to argue and reason about architectural properties, quality attribute requirements, and functional requirements that the system must add here.
 - This view type partitions the system into components that have some runtime presence such as processes, objects, data stores, and connectors or that represent pathways of communication such as data flows and access to shared storage.

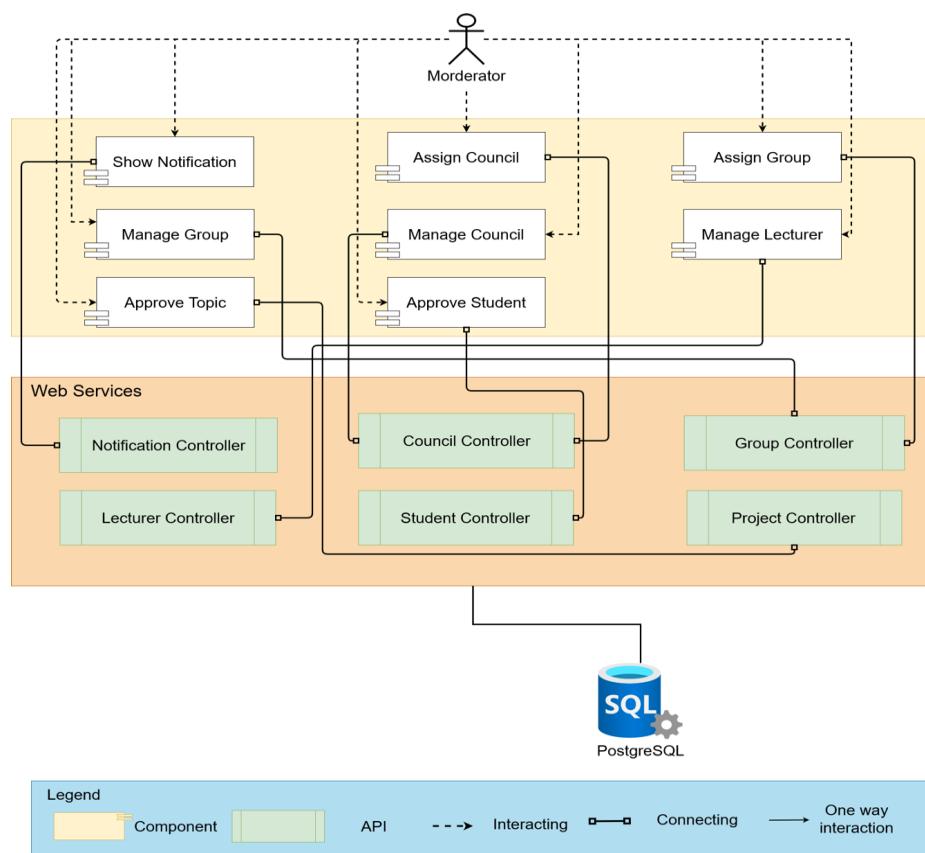


Figure 3.2.1: Component & connector for moderator.

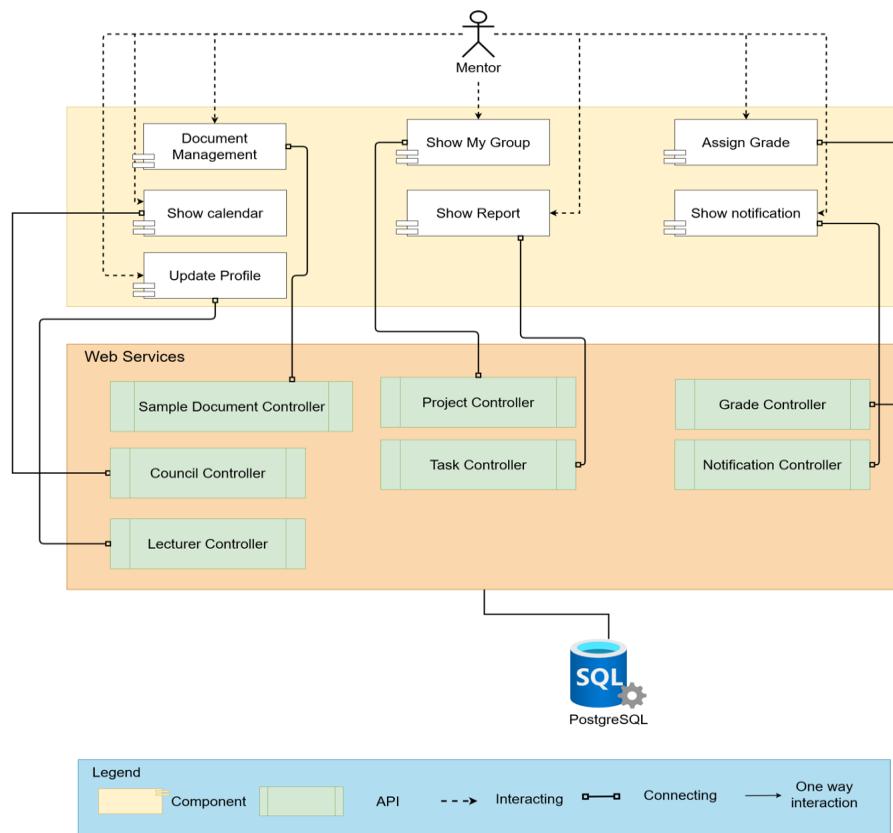


Figure 1.2.2: Component & connector for mentor.

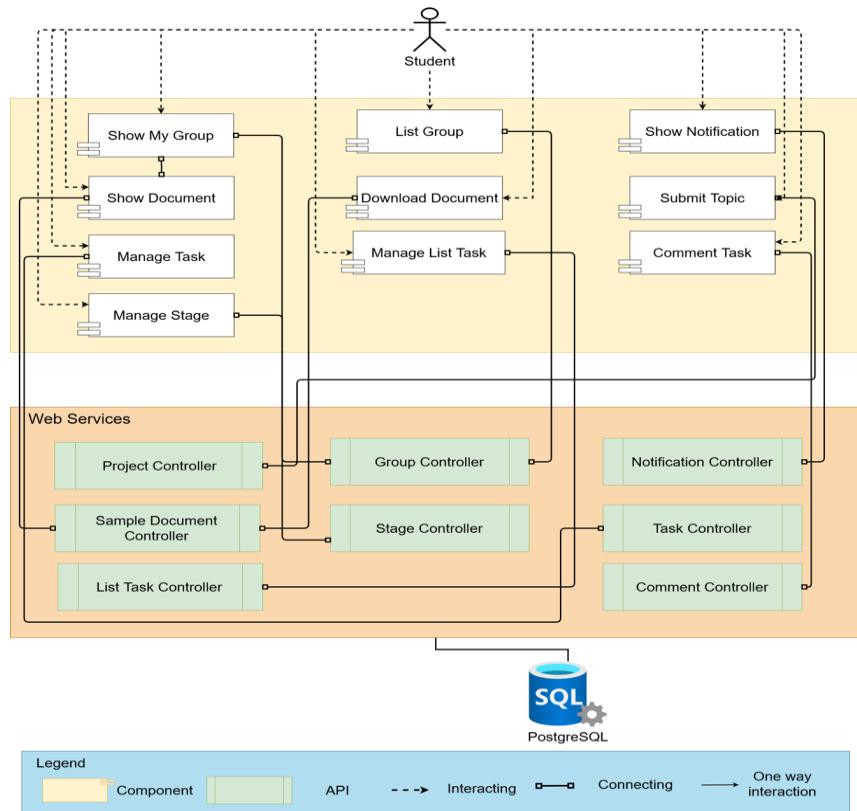
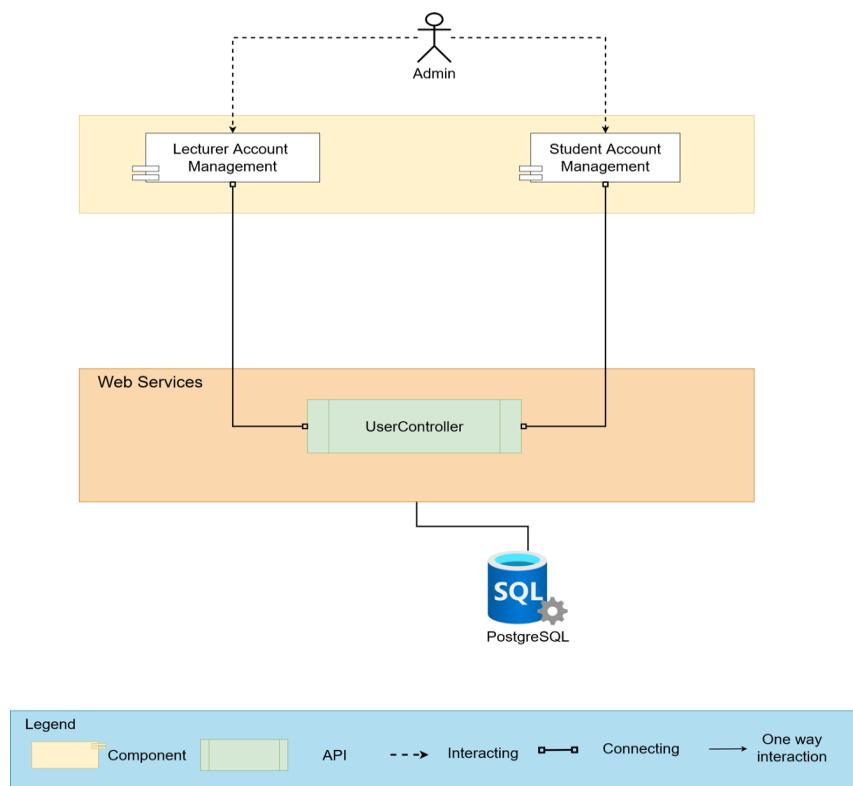


Figure 3.2.3: Component & connector for student.

**Figure 3.2.4:** Component & connector for admin.**Prose****Table 3.2:** Component & connector prose.

Element	Responsibilities
Show notification	User can see the notifications in the website.
Assign Council	Moderator can assign council into a group.
Assign Group	Moderator can assign group into a lecturer.
Manage Group	Moderator can add, update, remove group and show a list of groups.
Manage Council	Moderator can add, update, remove council and show a list of councils.
Manage Lecturer	Moderator can add, update, remove lecturer and show a list of lecturer.
Approve Topic	Moderator can approve topic from the student.
Approve Student	Moderator can approve student account from the student.
Document	Mentor can add, edit and remove files and folders.

Management	
Show My Group	Mentor and Student can see their group.
Assign Grade	Evaluator can assign grade for the students in a group.
Show Calendar	Mentor and Student can see the schedule of their councils.
Show Report	Mentor can see statical reports by every stages.
Update Profile	Lecturer can update their information.
List Group	Student can see all groups.
Show Document	Student can see sample documents.
Download Document	Student can download the sample documents.
Manage Task	Student can add, edit and remove tasks and assign tasks for members.
Manage List Task	Student can add, edit and remove a list of tasks.
Comment Task	Student can comment the tasks.
Manage Stage	Student can add, edit and remove a stage.
Lecturer Account Management	Admin can edit the lecturer accounts and reset password.
Student Account Management	Admin can edit the student accounts and reset password.

3.3. Module view

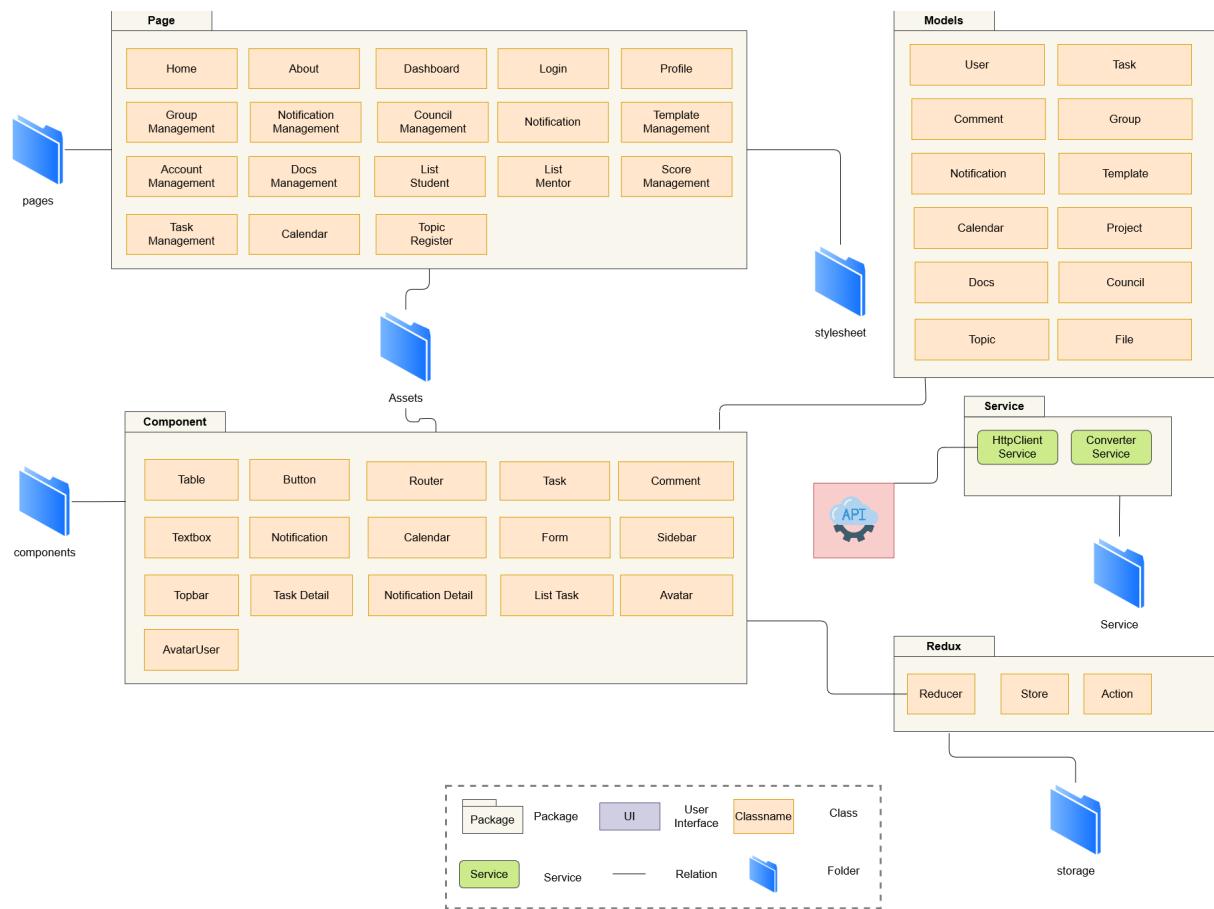


Figure 3.3.1: Module view for client.

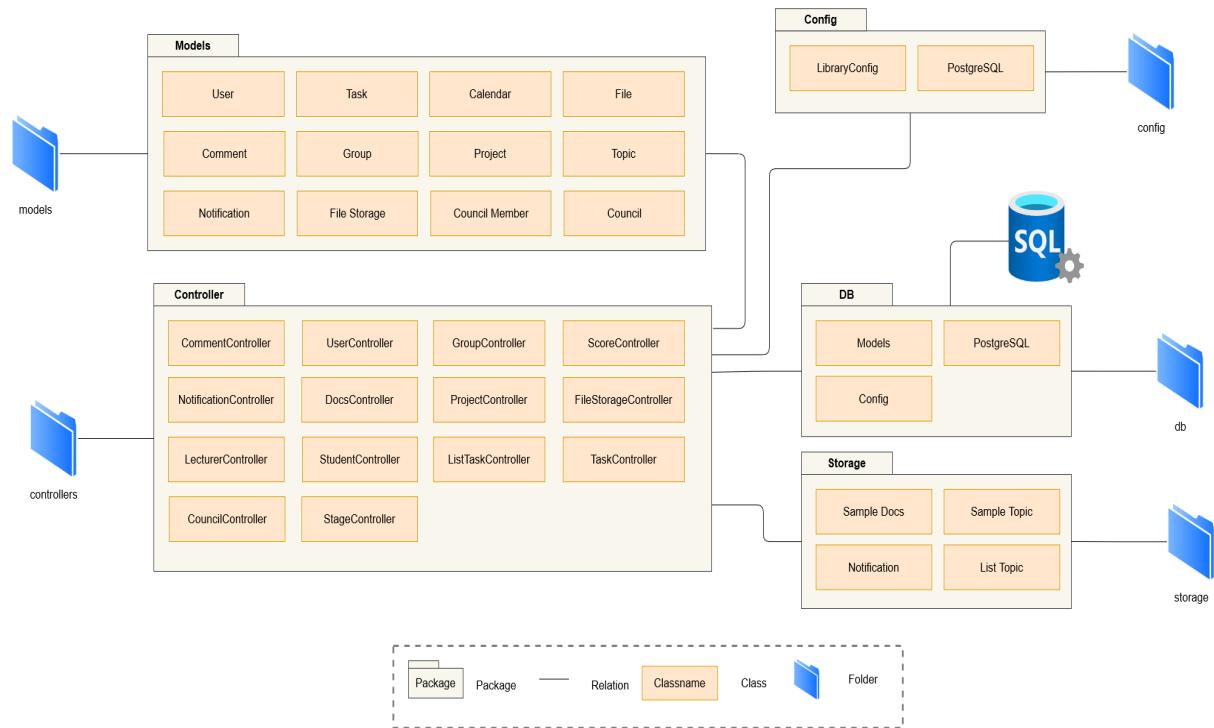


Figure 3.3.2: Module view for server.

Prose

Table 3.3: Module view prose.

Element	Responsibilities
Web View	The website package contains management modules for admin, students, mentor, moderator.
Models	Object data modules connect to tables in the database for transmission to the system interface.

Description

The system includes web view, services, and models. After users interact with UI. Data will be requested to the corresponding service, then will direct to model. Data be responded will be displayed on UI.

3.4. Allocation view

The allocation view models the run-time architecture of a system. It shows the configuration of the hardware elements when the system is deployed.

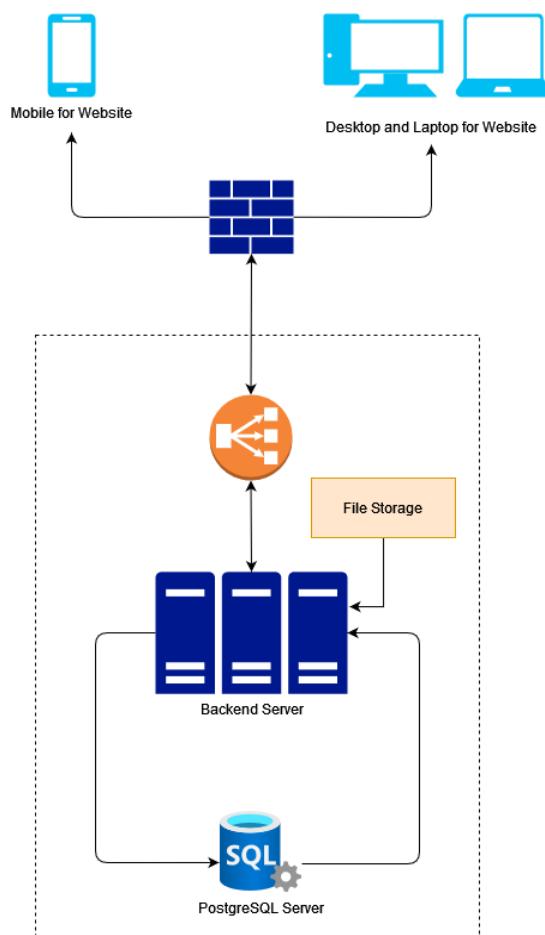


Figure 3.4: Allocation view.

Prose

Table 3.4: Allocation view prose.

Element	Responsibilities
Laptop or PC	Device running browser and helping Admin, Students, Mentor, Moderator to use the functions of the website to manage.
Backend Server	Provide an API to support the interaction between the user interface and the server. where to install and run the backend API.
PostgreSQL Database	The place contains all data about tours, user information... It is organized in tabular form.

Description

The system is deployed on web environment (using React JS library). They interact with the server through APIs to read and write data from the PostgreSQL database. In addition.

4. References

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Capstone Project 2

CMU-SE 451

Database Design

Version 1.1

Date: 14 April 2022

SENIOR PROJECT MANAGEMENT SYSTEM FOR INTERNATIONAL SCHOOL

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PROJECT INFORMATION

Project acronym	Senior Project Management System for International School		
Project Title	SPMS		
Start Date	18 Feb 2022	End Date	15 May 2022
Lead Institution	International School, Duy Tan University		
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v1.0	27/02/2022	Initial Release	All Members	x
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1. Introduction

1.1. Purpose

Place information system's database design document describes structure of database and file structure of system. Database Design document will introduce all attribute the System that will help developer and tester base on this design to implement and test.

1.2. Scope

- This Database Design Document provides the basic for "SPMS" Database design.
- It describes both logical and physical definition, non-functional issues, and the database interfaces; storage aspects are defined in the physical database design sections.
- The tables performance considerations requirements. The following topics are covered in this document:
 - Assumptions and decisions on database design.
 - Entity-mapping.
 - Table column definitions.
 - Primary, unique and foreign key definitions.
 - Column and row level validation rules (check constraints).
 - Rule for populating specific columns (sequences, derivations, demoralized (column)).
 - Interfaces and dependencies with other components.
 - Data access description.
- The database design is composed of definitions for database objects derived by mapping entities to tables attributes to columns, unique identifiers to unique keys and relationships to foreign keys.
- During design, these initial definitions are enhanced to support the functionality described in the functional specification/ user stories and defined in the primary and supporting modules of the application high level design.

1.3. Data Storage Platform

- Data of application is stored in PostgreSQL database.
- In PostgreSQL, data structure is stored as tables that the database objects that behave as containers for the data, in which the data will be logically organized in rows and columns format.

1.4. Definition, Acronyms and Abbreviations

Table 1.4: *Definition, Acronyms and Abbreviations.*

Abbreviations	Description	Comment
PK/FK	Primary/ Foreign Key	Use to indicate a file is a Primary or Foreign key in a table
ERD	Entity Relationship Diagram	Show the relationship between entities in the system

2. Database Design

2.1. Collection Overview

Table 2.1: *Table Overview.*

No.	Table name	Description
1	departments	This table shows all information about the department.
2	majors	This table shows all information about major.
3	councils	This table shows all information about council.
4	roles	This table shows all information about roles in the system.
5	users	This table shows all information about user
6	file_storages	This table shows all information about files storage in the system
7	notifications	This table shows all information about notification
8	user_roles	This table shows all information about the user's role
9	notification_files	This table shows all information about the file attached to the notification
10	lecturers	This table shows all information about lecturer
11	groups	This table shows all information about groups
12	student	This table shows all information about student

13	group_lecturers	This table shows all information about the group's mentor
14	projects	This table shows all information about topic template and project
15	project_files	This table shows all information about the file attached to the topic template
16	stages	This table shows all information about the stages
17	listTasks	This table shows all information about the stage's task list
18	tasks	This table shows all information about the task in task list
19	task_assignments	This table shows all information about the members assign to the task
20	comments	This table shows all information about the member's comments on the task
21	council_members	This table shows all information about the council's member
22	scores	This table shows all information about the student's score

2.2. Detail

2.2.1. departments

Table 2.2.1: *departments table.*

Attribute	Data Type	Null	Note
depId	uuid	No	Primary key
depCode	varchar(10)	No	
depName	varchar(50)	No	
depDesc	text	Yes	
createdAt	timestamptz	No	
updatedAt	timestamptz	No	

2.2.2. majors

Table 2.2.2: *majors table.*

Attribute	Data Type	Null	Note
majorId	uuid	No	Primary key
majorCode	varchar(10)	No	
majorName	varchar(50)	No	
majorDesc	text	Yes	
depId	uuid	Yes	Foreign key
createdAt	timestamptz	No	
updateAt	timestamptz	No	

2.2.3. councils

Table 2.3.3: *councils table.*

Attribute	Data Type	Null	Note
councilId	uuid	No	Primary key
councilName	varchar(50)	Yes	
councilDesc	varchar(100)	Yes	
time	timestamptz	Yes	
location	varchar(100)	Yes	
createdAt	timestamptz	No	
updateAt	timestamptz	No	

2.2.4. roles

Table 2.3.4: *roles table.*

Attribute	Data Type	Null	Note
roleId	uuid	No	Primary key
roleName	varchar(10)	No	
createdAt	timestamptz	No	
updatedAt	timestamptz	No	

2.2.5. users

Table 2.3.5: *users table.*

Attribute	Data Type	Null	Note
userId	uuid	No	Primary key
firstName	varchar(20)	Yes	
lastName	varchar(15)	Yes	
dateOfBirth	timestamptz	Yes	
email	varchar(30)	Yes	
password	varchar(100)	Yes	
phone	varchar(11)	Yes	
majorId	uuid	Yes	Foreign key
createdAt	timestamptz	No	
updatedAt	timestamptz	No	

2.2.6. file_storages

Table 2.3.6: *file_storages table.*

Attribute	Data Type	Null	Note
fileId	uuid	No	Primary key
fileName	varchar(255)	No	
type	varchar(255)	No	
path	text	No	
userId	uuid	Yes	Foreign key
createdAt	timestamptz	No	
updatedAt	timestamptz	No	

2.2.7. notifications

Table 2.3.7: *notifications table.*

Attribute	Data Type	Null	Note
notificationId	uuid	No	Primary key
title	varchar(150)	No	
content	text	No	
userId	uuid		Foreign key
fileId1	uuid		Foreign key
fileId2	uuid		Foreign key
fileId3	uuid		Foreign key
fileId4	uuid		Foreign key
createdAt	timestamptz	No	
updatedAt	timestamptz	No	

2.2.8. user_roles

Table 2.3.8: *user_roles table.*

Attribute	Data Type	Null	Note
userId	uuid	No	Primary key Foreign key
roleId	uuid	No	Primary key Foreign key
createdAt	timestamptz	No	
updatedAt	timestamptz	No	

2.2.9. notification_files

Table 2.3.9: *notification_files table.*

Attribute	Data Type	Null	Note
notificationId	uuid	No	Primary key Foreign key
fileId	uuid	No	Primary key Foreign key
createdAt	timestamptz	No	
updatedAt	timestamptz	No	

2.2.10. lecturers

Table 2.2.10: *lecturers table.*

Attribute	Data Type	Null	Note
notificationId	uuid	No	Primary key
userId	uuid	Yes	Foreign key
academiLevel	varchar(50)	Yes	
createdAt	timestamptz	No	
updatedAt	timestamptz	No	

2.2.11. groups

Table 2.2.11: *groups table.*

Attribute	Data Type	Null	Note
groupId	uuid	No	Primary key
groupName	varchar(50)	No	
groupDesc	varchar(100)	Yes	
isScientificGroup	boolean	Yes	
typeCapstone	integer	Yes	
councilId	uuid	Yes	Foreign key
createdAt	timestamptz	No	
updatedAt	timestamptz	No	

2.2.12. students

Table 2.2.12: *students table.*

Attribute	Data type	Null	Note
stuId	uuid	No	Primary key
stuCode	varchar(11)	Yes	
gpa	float	Yes	
courseCredits	integer	Yes	
codeLevel	integer	Yes	
note	text	Yes	
class	varchar(10)	Yes	
isApproved	boolean	Yes	
userId	uuid	Yes	Foreign key
groupId	uuid	Yes	Foreign key
typeCapstone	integer	Yes	
createdAt	timestamptz	No	
updatedAt	timestamptz	No	

2.2.13. group_lecturers

Table 2.2.13: *group_lecturers table.*

Attribute	Data Type	Null	Note
groupId	uuid	No	Primary key Foreign key
lecturerId	uuid	No	Primary key Foreign key
createdAt	timestamptz	No	
updatedAt	timestamptz	No	

2.2.14. projects

Table 2.2.14: *projects table.*

Attribute	Data Type	Null	Note
projectId	uuid	No	Primary key
projectName	varchar(255)	No	
projectDesc	text	No	
startDate	timestamptz	Yes	
endDate	timestamptz	Yes	
note	text	Yes	
groupId	uuid	Yes	Foreign key
leaderId	uuid	Yes	Foreign key
lecturerId	uuid	Yes	Foreign key
isApproved	varchar(255)	Yes	
createdAt	timestamptz	No	
updatedAt	timestamptz	No	

2.2.15. project_files

Table 2.2.15: *project_files table.*

Attribute	Data Type	Null	Note
projectId	uuid	No	Primary key Foreign key
fileId	uuid	No	Primary key Foreign key
createdAt	timestamptz	No	
updatedAt	timestamptz	No	

2.2.16. stages

Table 2.2.16: *stages table.*

Attribute	Data Type	Null	Note
stageId	uuid	No	Primary key
stageName	varchar(50)	Yes	
stageDesc	text	Yes	
projectId	uuid	Yes	Foreign key
startDate	timestamptz	Yes	
endDate	timestamptz	Yes	
createdAt	timestamptz	No	
updatedAt	timestamptz	No	

2.2.17. listTasks

Table 2.2.17: *listTasks table.*

Attribute	Data Type	Null	Note
listTaskId	uuid	No	Primary key
stageId	uuid	No	Foreign key
title	varchar(50)	No	
description	text	Yes	
createdAt	timestamptz	No	
updatedAt	timestamptz	No	

2.2.18. tasks

Table 2.2.18: *tasks table.*

Attribute	Data Type	Null	Note
taskId	uuid	No	Primary key
listTaskId	uuid	No	Foreign key
taskName	varchar(50)	No	
taskDesc	text	Yes	
startDate	timestamptz	Yes	
endDate	timestamptz	Yes	
createdAt	timestamptz	No	
updatedAt	timestamptz	No	

2.2.19. task_assignments

Table 2.2.19: *task_assignments table.*

Attribute	Data Type	Null	Note
stuId	uuid	No	Primary key Foreign key
taskId	uuid	No	Primary key Foreign key
createdAt	timestamptz	No	
updatedAt	timestamptz	No	

2.2.20. comments

Table 2.2.20: *comments table.*

Attribute	Data Type	Null	Note
commentId	uuid	No	Primary key Foreign key
content	text	No	
userId	uuid	Yes	Foreign key
taskId	uuid	Yes	Foreign key
createdAt	timestamptz	No	
updatedAt	timestamptz	No	

2.2.21. council_members

Table 2.2.21: *council_members table.*

Attribute	Data Type	Null	Note
councilId	uuid	No	Primary key Foreign key
lecturerId	uuid	No	Primary key Foreign key
roleId	uuid	Yes	Foreign key
workUnit	varchar(10)	Yes	
createdAt	timestamptz	No	
updatedAt	timestamptz	No	

2.2.22. scores

Table 2.2.22: *scores table.*

Attribute	Data Type	Null	Note
scoreId	uuid	No	Primary key
councilId	uuid	Yes	Foreign key
stuId	uuid	Yes	Foreign key
lecturerId	uuid	Yes	Foreign key
mentorScore	float	Yes	
presidentScore	float	Yes	
assistantScore	float	Yes	
reviewerScore	float	Yes	
createdAt	timestamptz	No	
updatedAt	timestamptz	No	

2.2.23. evaluate_stages

Table 2.2.23: *evaluate_stages table.*

Attribute	Data Type	Null	Note
stageId	uuid	No	Primary key Foreign key
stuId	uuid	No	Primary key Foreign key
percentage	float	No	
comment	text	Yes	
createdAt	timestamptz	No	
updatedAt	timestamptz	No	

2.3. Entity Relationship Diagram

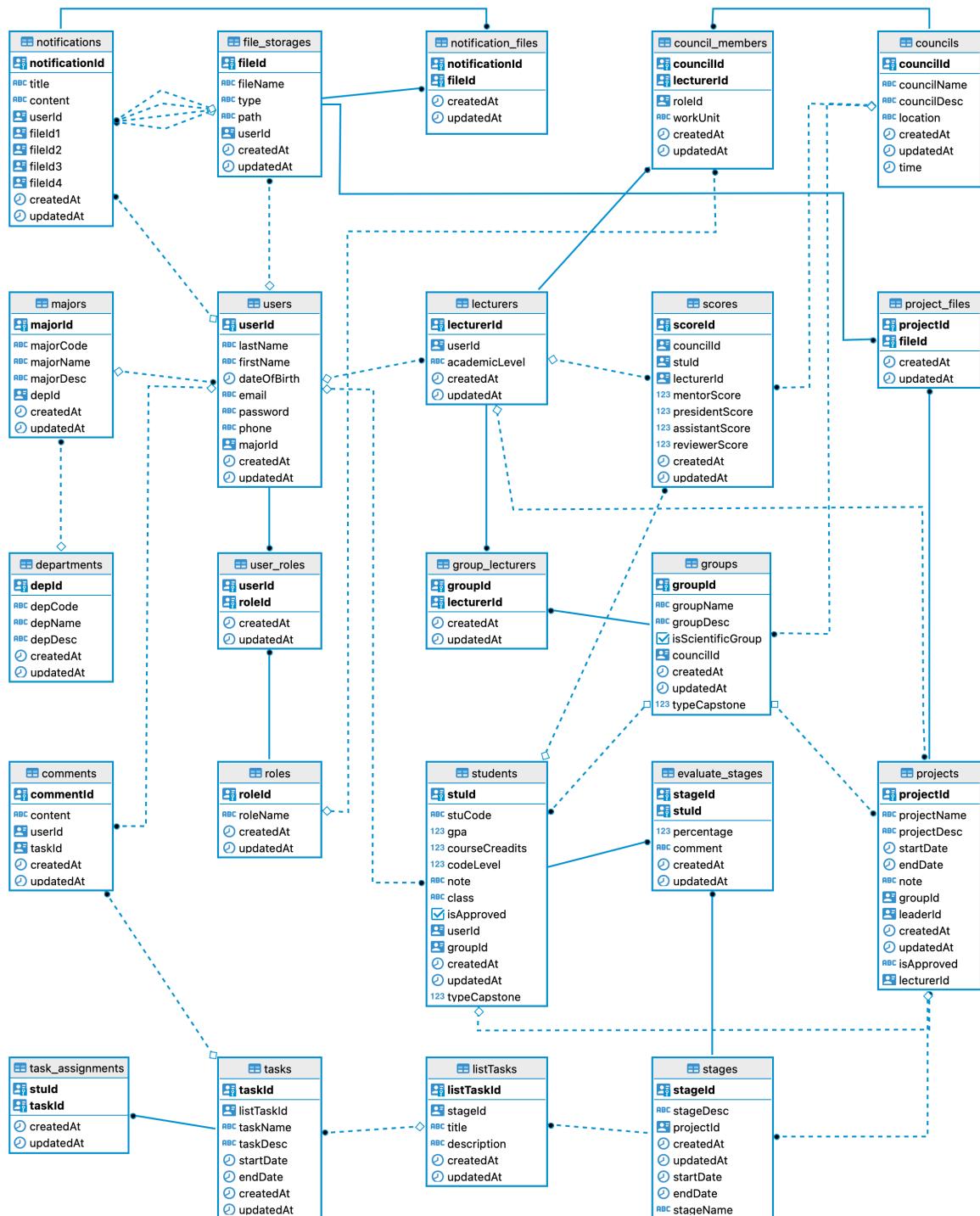


Figure 2.3: Entity Relationship Diagram.

3. References



Capstone Project 2

CMU-SE 451

User Interface

Version 1.3

Date: 15 Apr 2021

SENIOR PROJECT MANAGEMENT SYSTEM FOR INTERNATIONAL SCHOOL

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PROJECT INFORMATION

Project acronym	Senior Project Management System for International School		
Project Title	SPMS		
Start Date	18 Feb 2022	End Date	15 May 2022
Lead Institution	International School, Duy Tan University		
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SIGNATURE

Document Approvals: *The following signatures are required for approval of this document.*

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1. Introduction

1.1. Purpose of document

This document serves the purpose of specifying application's UI design

1.2. Project goal

- Create complete interfaces, and describe them clearly.
- Overview of the stages and modules of the system.

2. Describe user interface in the system

2.1. Login

Figure 2.1: Login.

Table 2.1: Login description.

ID	Condition	Control Type	Target
1	Type	Textbox	Type an email
2	Type	Textbox	Type a password
3	Click	Button	Click to login into the system

2.2. Register

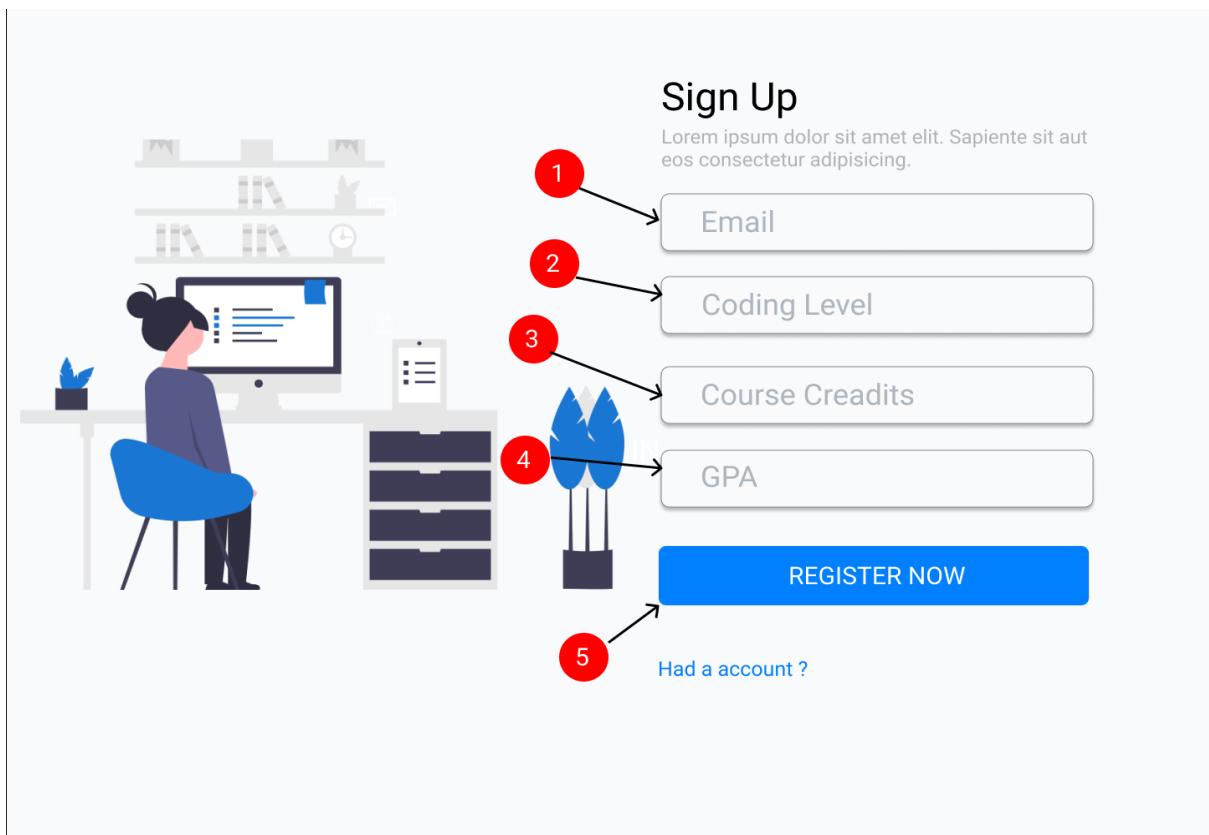


Figure 2.2: Register.

Table 2.2: Register description.

ID	Condition	Control Type	Target
1	Type	Textbox	Type an email
2	Type	Textbox	Type a coding level
3	Type	Textbox	Type a course credit
4	Type	Textbox	Type a gpa
5	Click	Button	Click to register into the system

2.3. About

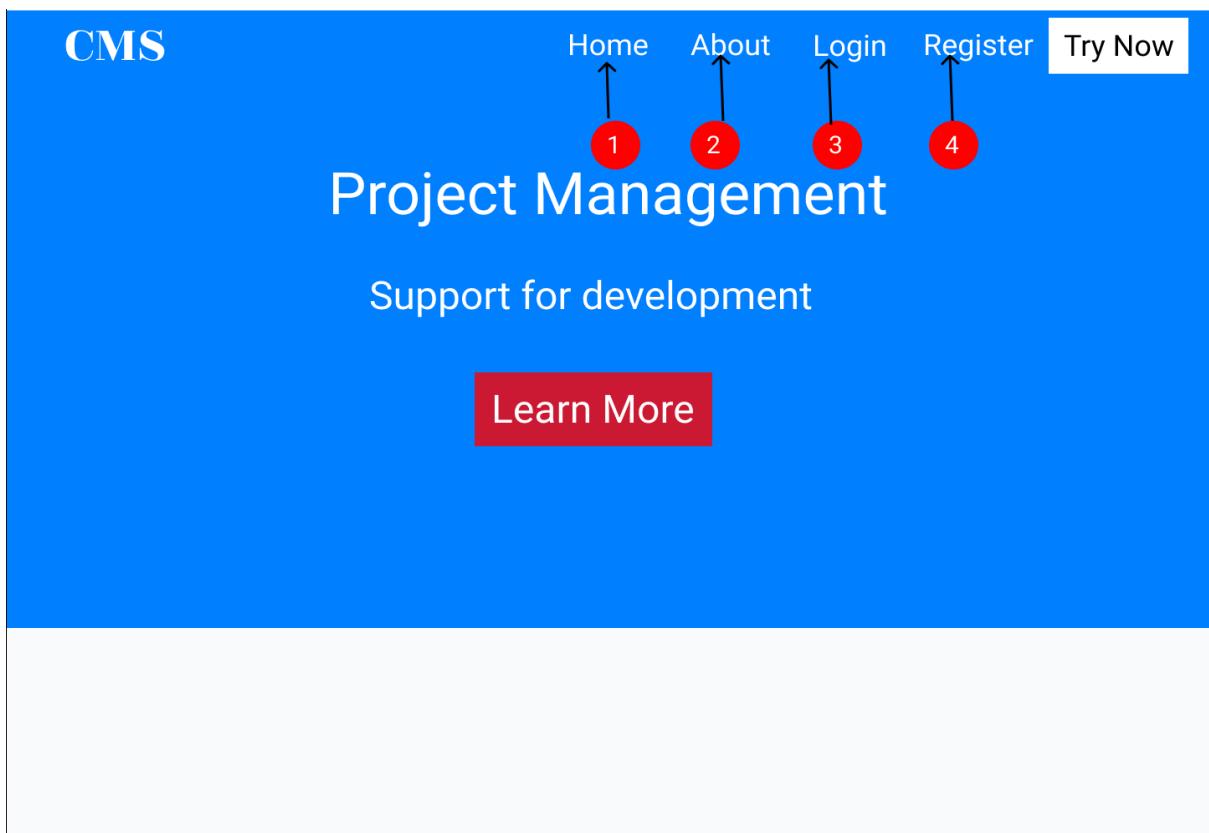


Figure 2.3: *About.*

Table 2.3: *About description.*

ID	Condition	Control Type	Target
1	Click	Link	Redirect to home page
2	Click	Link	Redirect to about page
3	Click	Link	Redirect to login page
4	Click	Link	Redirect to register page

2.4. Introduction

The screenshot shows the CMS Home page. On the left, there is a vertical sidebar with the following menu items:

- Introduction
- My Topic
- Taskboard
- Profile
- My Group

The main content area features a large blue "WELCOME" graphic with small cartoon figures of people and fireworks around it. Below the graphic, the text "Welcome back!" is displayed, followed by "Development and Management". At the top right, there is a blue header bar with the CMS logo, "Home", "About", and a red circular button with the letters "NT".

Figure 2.4: *Introduction.*

2.5. Moderator's notification

Figure 2.5: Moderator's notification.

Table 2.5: Moderator's notification description.

ID	Condition	Control Type	Target
1	Click	Button	Add a notification
2	Click	Button	Edit notification
3	Click	Button	Delete notification
4	Click	Button	Close notification
5	Click	Text	Download file
6	Click	Button	Open a detail notification

2.6. Notification

The screenshot shows the CMS application's notification interface. On the left, a sidebar lists various management modules: Introduction, Notification, Lecturer Management, Student Management, Topic Approval, Document Management, Group Management, Council Management, and Profile. The main area is titled "Notification" and contains a table with two columns: "Notification" and "Notification Detail". The "Notification" column lists four items, each with a subject ("Document"), a message snippet, and a timestamp. The "Notification Detail" column provides a detailed view of the selected item, showing the full message, a timestamp, and a list of attachments (description.docx, member.docx, plan.xlsx). A red circle labeled "1" points to the first notification in the list. A red circle labeled "2" points to the close button in the top right corner of the detail view. A red circle labeled "3" points to the download icon next to one of the attachments.

Figure 2.6: Notification.

Table 2.6: Notification description.

ID	Condition	Control Type	Target
1	Click	Button	Open a detail notification
2	Click	Icon	Close notification
3	Click	Button	Download notification

2.7. Stage board

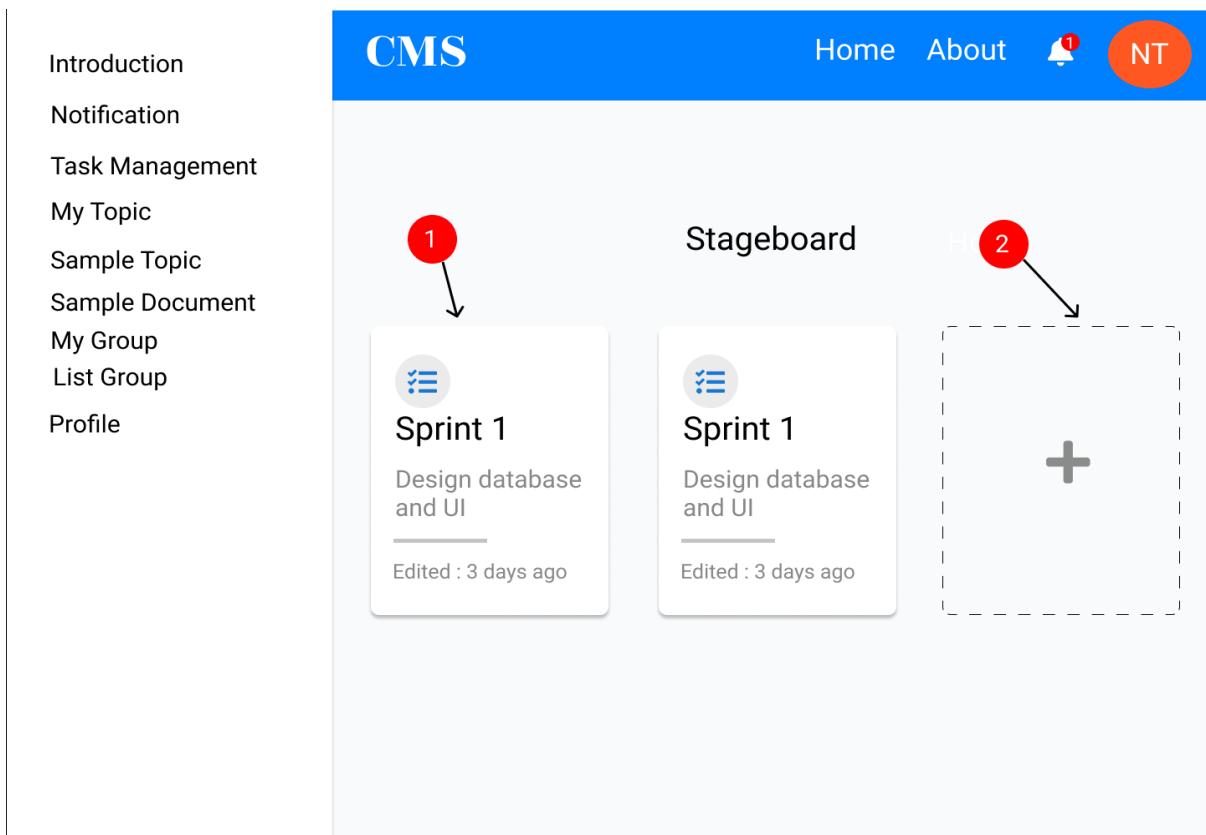


Figure 2.7: Stage board.

Table 2.7: Stage board description.

ID	Condition	Control Type	Target
1	Click	Link	Redirect a task management page
2	Click	Button	Add a stage

2.8. Task management

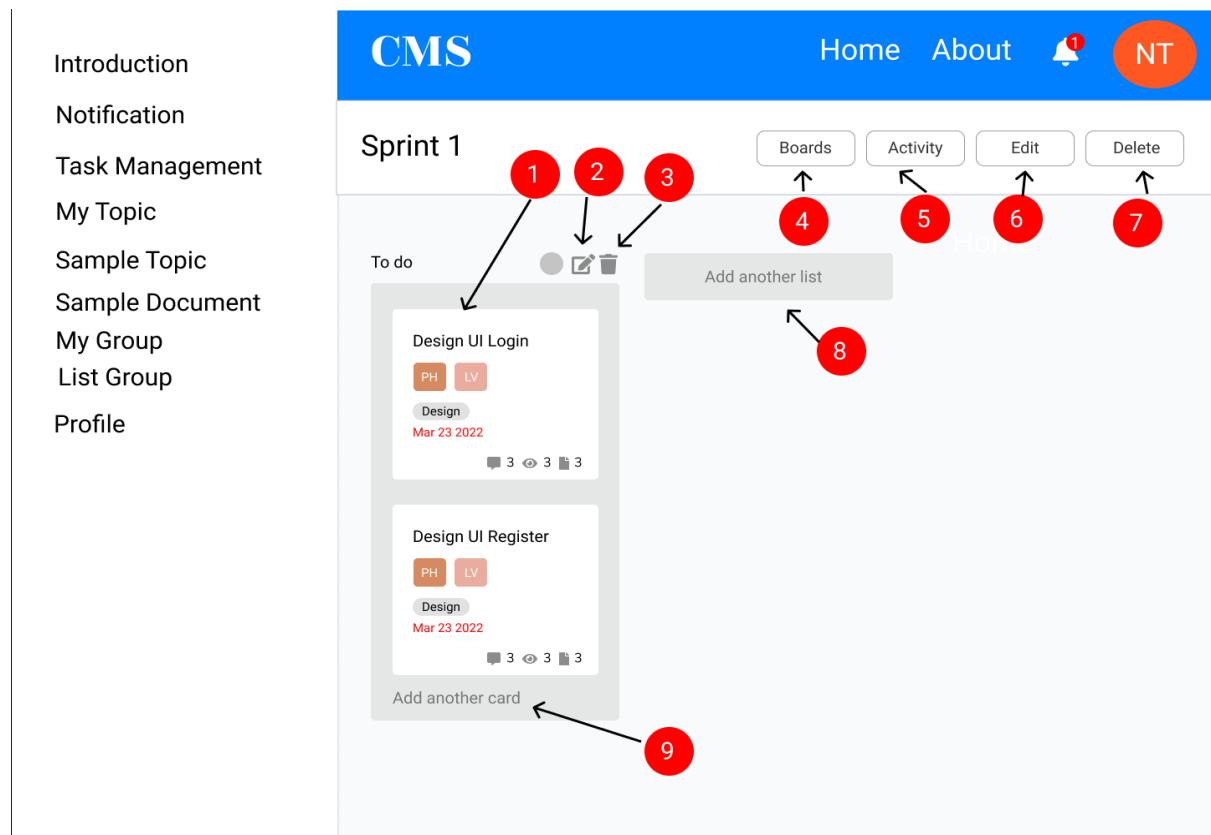


Figure 2.8: Task management.

Table 2.8: Task management description.

ID	Condition	Control Type	Target
1	Click	Button	Open a task
2	Click	Icon	Edit list
3	Click	Icon	Delete list
4	Click	Button	Redirect the stage board page
5	Click	Button	Show activity
6	Click	Button	Edit stage
7	Click	Button	Delete stage
8	Click	Button	Add list
9	Click	Button	Add task

2.9. My topic

The screenshot shows a CMS application interface. On the left, a sidebar contains links: Introduction, Notification, Task Management, My Topic, Sample Topic, Sample Document, My Group, Calendar, and Profile. The main content area has a blue header bar with 'CMS' and navigation links for Home, About, a bell icon with a red notification count (1), and a user icon labeled 'NT'. Below the header, the title 'My Topic' is displayed next to a search bar. The central part of the screen shows a 'Topic Form' with the following fields: 'Topic Form' label, 'Title' (input field), 'Leader' (input field), 'Description' (text area), 'Status : Approved', and 'Comment : This topic is good.'. A red circle with the number '1' is overlaid on the 'Title' input field. A red circle with the number '2' is overlaid on the 'SUBMIT TOPIC' button.

Figure 2.9: My topic.

Table 2.9: My topic description.

ID	Condition	Control Type	Target
1	Type	Textbox	Enter a fields
2	Click	Button	Submit a topic for student

2.10. Topic template

The screenshot shows a CMS application interface. On the left, a sidebar contains links for Introduction, Notification, Task Management, My Topic, Sample Topic, Sample Document, My Group, Calendar, and Profile. The main content area displays two project cards. The first card, titled 'Ecommerce', includes details: Capstone 1 (Scientific), Leader: Pham Van, and a description about supporting web and mobile platforms using React JS, React Native, and Node JS. It also shows a file link 'project_desc.docx' and a timestamp 'Jan 4 2022 15:15'. The second card, titled 'Chat App', includes details: Capstone 1 (Normal), Leader: Nguyen Viet, and a similar description about mobile platforms. It also shows a file link 'project_desc.docx' and a timestamp 'Jan 4 2022 15:15'. A red circle with the number '1' is positioned near the 'project_desc.docx' link in the Ecommerce card.

Figure 2.10: Topic template.

Table 2.10: Topic template document.

ID	Condition	Control Type	Target
1	Click	Link	Download a description file

2.11. Document template

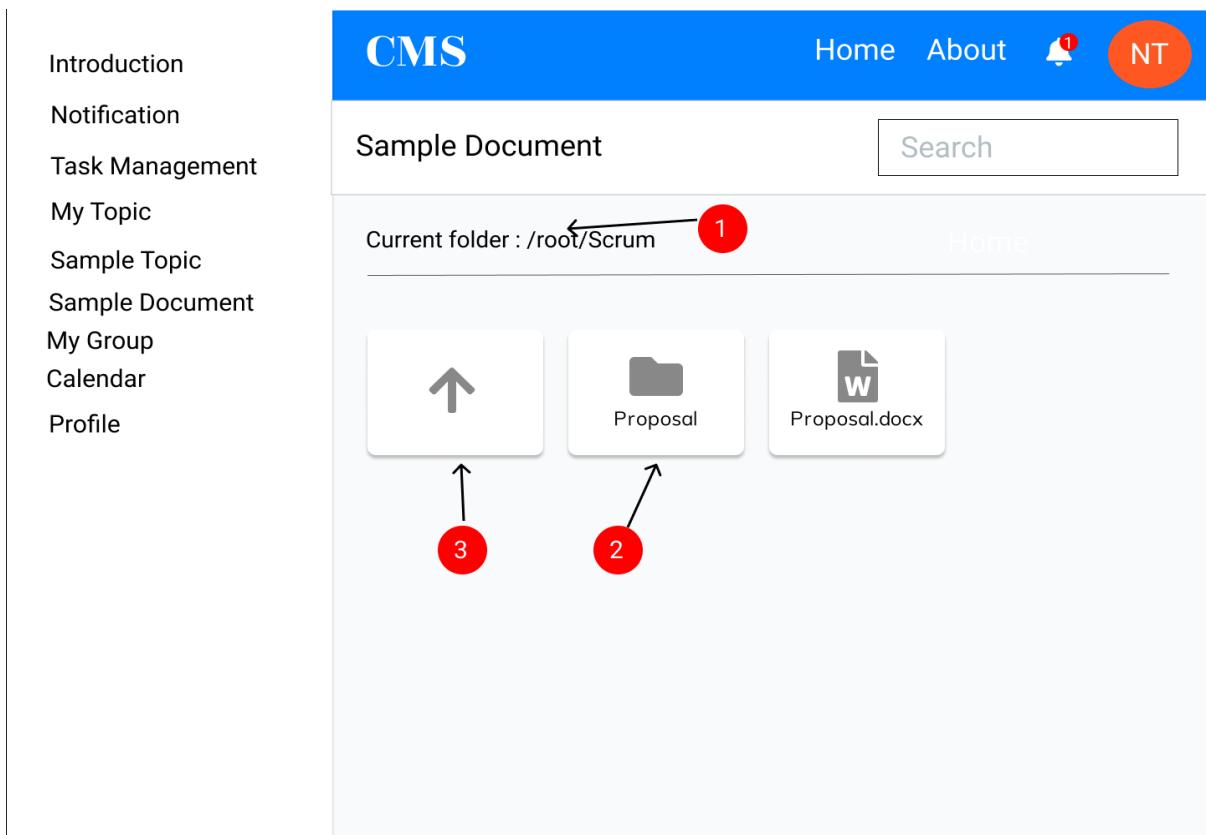


Figure 2.11: Document template.

Table 2.11: Document template description.

ID	Condition	Control Type	Target
1	Click	Text	Change directory
2	Click	Button	Click to move to folder
3	Click	Button	Click to back a old folder

2.12. My group

Chat App

Capstone 1

The project supports for mobile platform. A suggestion should use React Native and Node JS to build the system.

Mentor	Members
NL Nguyen Long nlong@ab.com	LV Le Viet lviet@ab.com
PV Phan Viet pviет@ab.com	

1 mentor 2 members
Jan 4 2022 15:15 Mar 3 2022 - Apr 3 2022

Ecommerce

Capstone 2

The project supports for mobile platform. A suggestion should use React Native and Node JS to build the system.

Mentor	Members
NL Nguyen Long nlong@ab.com	LV Le Viet lviet@ab.com
LT Le Toan ltoan@ab.com	

1 mentor 2 members
Jan 4 2022 15:15 Mar 3 2022 - Apr 3 2022

Figure 2.12: My group.

2.13. Group list

The screenshot shows the CMS application interface. On the left, there is a sidebar with various navigation links: Introduction, Notification, Task Management, My Topic, Sample Topic, Sample Document, My Group, List Group, and Profile. The main content area is titled "List Group". It displays a list of groups under the heading "10 Groups". One group, "Group CS1 SE31", is highlighted with a red circle containing the number "1" at its top-left corner. This group is described as "Group CS31 in Capstone 1 (Scientific)" and supports web and mobile platforms. It has 2 members (two LV icons) and 1 mentor (one LT icon). Other groups listed include "Group CS1 SE32" and two instances of "Group CS1 SE31". Each group card shows its name, description, member count (with icons), and mentor count.

Figure 2.13: Group list.

Table 2.13: Group list description.

ID	Condition	Control Type	Target
1	Click	Button	Click to open a list of detail info of members

2.14. Lecturer's profile

The screenshot shows the CMS application interface. On the left, a sidebar contains links for various management modules: Introduction, Notification, Lecturer Management, Student Management, Topic Approval, Document Management, Group Management, Council Management, and Profile. The main content area displays a profile card for a lecturer named Van Viet, with the email address vanviet@gmail.com and the title Information Technology. The profile card features a large orange circular icon with the letters 'NT' in white. To the right of the profile card is a 'Profile' section with input fields for First Name, Last Name, Email, Password, Phone, Department, and Academic. A blue 'Save Changes' button is located at the bottom of this section. Red numbered circles, labeled 1 and 2, indicate specific interaction points: circle 1 points to the 'Last Name' input field, and circle 2 points to the 'Save Changes' button.

Figure 2.14: Lecturer's profile.

Table 2.14: Lecturer's profile description.

ID	Condition	Control Type	Target
1	Type	Textbox	Type a field
2	Click	Button	Click to save changes from the profile

2.15. Lecturer management

LecturerId	Fullname	Email	Password	Department	Phone	Academic	Toolbar
255ga23	Van Viet	vn@ab.com	bas31d	IT	092112233	Bachelor	
215sbss	Le Quoc	lq@ab.com	adf354	IT	092152311	Bachelor	

Figure 2.15: Lecturer management.

Table 2.15: Lecturer management description.

ID	Condition	Control Type	Target
1	Click	Button	Open a form to add records
2	Click	Button	Edit the current row
3	Click	Button	Delete the current row

2.16. Student management

The screenshot shows the CMS Student Management interface. The left sidebar lists various management modules: Introduction, Notification, Lecturer Management, Student Management (which is currently selected), Topic Approval, Document Management, Group Management, Council Management, and Profile. The main content area is titled 'Student Management' and contains a table with columns: StudentId, Fullname, Email, Password, Code, Phone, GPA, and Toolbar. Two rows of data are visible: one for 'Van Long' and another for 'Le Viet'. A red circle with the number '1' points to the 'Add Records' link at the top left of the table. A red circle with the number '2' points to the 'Approve' button in the first row of the table.

Figure 2.16: Student management.

Table 2.16: Student management description.

ID	Condition	Control Type	Target
1	Click	Button	Open a form to add records
2	Click	Button	Approve this student

2.17. Topic approval

The screenshot shows the CMS Topic Approval interface. On the left, a sidebar lists various management modules: Introduction, Notification, Lecturer Management, Student Management, Topic Approval, Document Management, Group Management, Council Management, and Profile. The main area displays two topics:

- Ecommerce**: Group CS31 in Capstone 1 (Scientific). Leader: Pham Van. Description: The project supports for web and mobile platform. A suggestion should use React JS, React Native and Node JS to build the system. Status: 2 members, Jan 4 2022 15:15. Comment: This topic is good. Buttons: APPROVE, CANCEL, REJECT.
- Chat App**: Group CS32 in Capstone 1 (Normal). Leader: Nguyen Viet. Description: The project supports for mobile platform. A suggestion should use React React Native and Node JS to build the system. Status: 2 members, Jan 4 2022 15:15. Comment: This topic is good. Buttons: APPROVE, CANCEL, REJECT.

Red circles numbered 1, 2, and 3 point to the APPROVE, CANCEL, and REJECT buttons respectively.

Figure 2.17: Topic approval.

Table 2.17: Topic approval description.

ID	Condition	Control Type	Target
1	Click	Button	Approve this topic
2	Click	Button	Cancel this topic
3	Click	Button	Reject this topic

2.18. Group management

The screenshot shows the CMS Group Management page. On the left, a sidebar lists navigation items: Introduction, Notification, Lecturer Management, Student Management, Topic Approval, Document Management, Group Management, Council Management, and Profile. The main area is titled "Group Management" and features a search bar. It displays two groups: "Group CS1 SE31" and "Group CS1 SE32". Each group card includes its name, a brief description ("Group CS31 in Capstone 1 (Scientific) / The project supports for web and mobile platforms."), member counts (2 members for both), mentor counts (1 mentor for both), and icons for edit and delete. A red circle labeled "1" points to the "ADD GROUP" button. Another red circle labeled "2" points to the edit icon of the first group, and another labeled "3" points to the delete icon of the same group.

Figure 2.18: Group management.

Table 2.18: Group management description.

ID	Condition	Control Type	Target
1	Click	Button	Add a new group
2	Click	Button	Edit group
3	Click	Button	Delete group

2.19.Document management

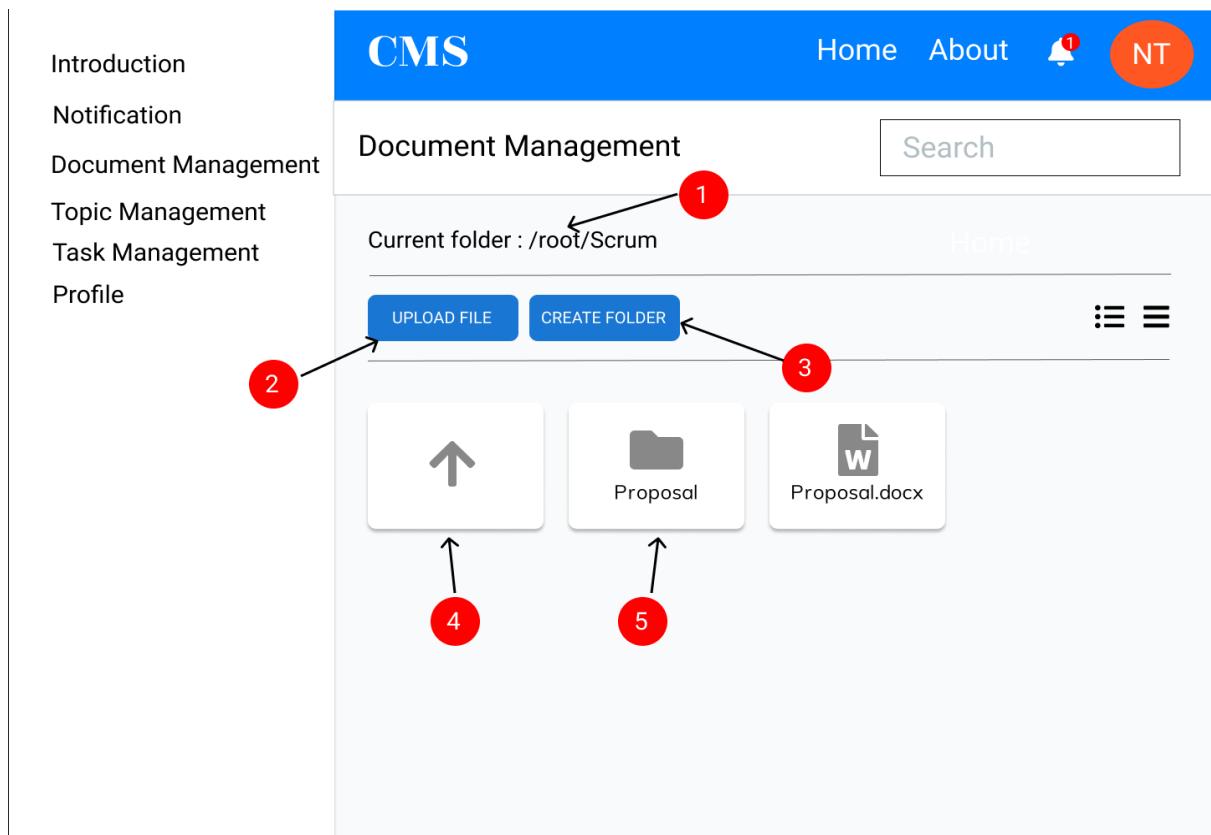


Figure 2.19: Document management.

Table 2.19: Document management description.

ID	Condition	Control Type	Target
1	Click	Text	Change directory
2	Click	Button	Upload a file
3	Click	Button	Create a folder
4	Click	Button	Back a old folder
5	Click	Button	Move to a folder

2.20. Topic management

The screenshot shows the CMS Topic Management page. On the left, a sidebar lists navigation items: Introduction, Notification, Document Management, Topic Management (which is selected), Task Management, and Profile. The main area has a blue header with 'CMS' and a navigation bar with Home, About, a notification bell icon, and an orange 'NT' button. Below the header, a search bar is present. The main content area displays a list of topics under 'Topic Management'. A summary at the top says '10 Topics'. The topics listed are: 'Ecommerce' (with edit and delete icons), 'Grab App' (with edit and delete icons), 'Ecommerce App' (with edit and delete icons), 'Shopping Now' (with edit and delete icons), 'Ecommerce Web' (with edit and delete icons), and 'Chat App' (with edit and delete icons). Each topic entry includes a timestamp ('Mar 3 2022 15:50') and a file name ('description.docx'). Red numbered circles (2 and 3) point to the edit and delete icons respectively, indicating they are interactive elements.

Figure 2.20: Topic management.

Table 2.20: Topic management description.

ID	Condition	Control Type	Target
1	Click	Button	Add a new topic
2	Click	Button	Edit topic
3	Click	Button	Delete topic

2.21. Contribution report

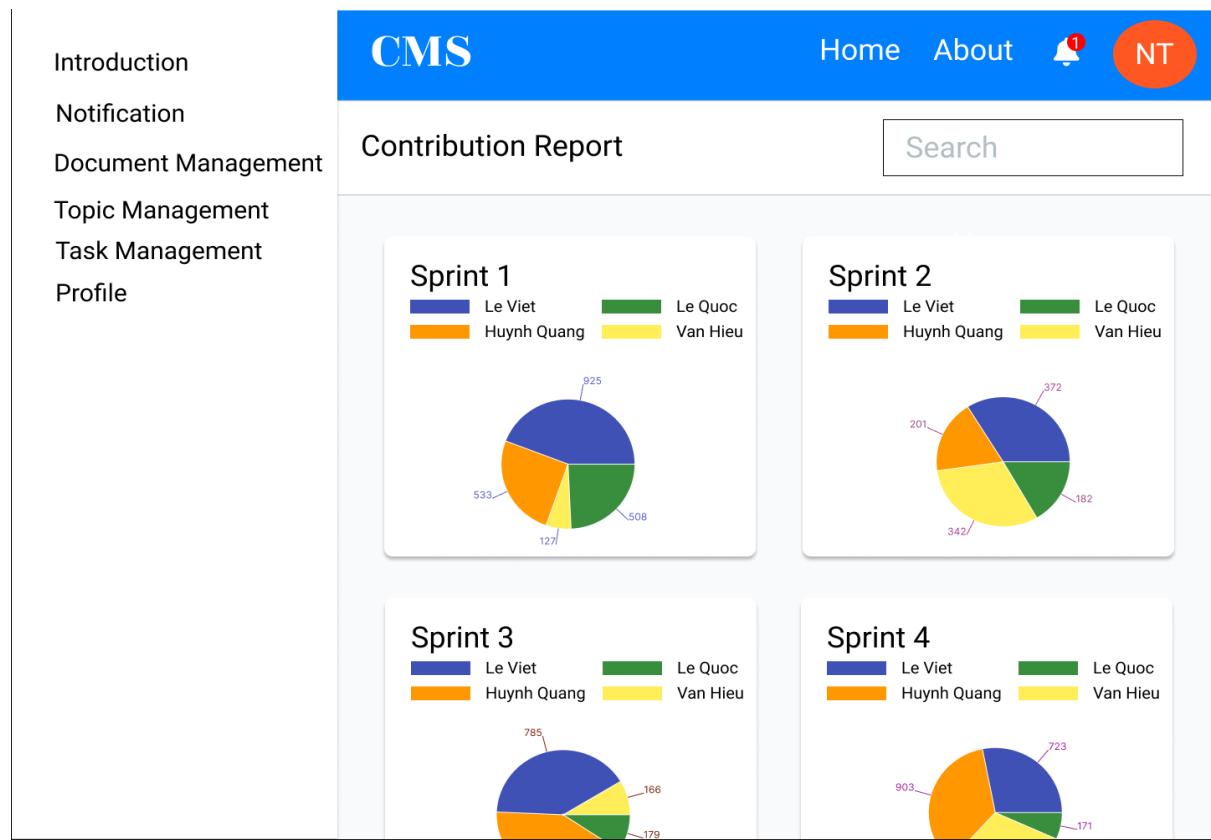


Figure 2.21: Contribution report.



Capstone Project 2

CMU-SE 451

Test Plan

Version 1.5

Date: 10 May 2022

SENIOR PROJECT MANAGEMENT SYSTEM FOR INTERNATIONAL SCHOOL

Submitted by

Tien, Nguyen Van

Phuoc, Ha Duc

Huy, Truong Dong

Dat, Nguyen Thanh

Approved by

Chau, Truong Ngoc

Proposal Review Panel Representative:

Name _____ Signature _____ Date _____

Capstone Project 2- Mentor:

Name _____ Signature _____ Date _____

PROJECT INFORMATION

Project acronym	Senior Project Management System for International School		
Project Title	SPMS		
Start Date	18 Feb 2022	End Date	15 May 2022
Lead Institution	International School, Duy Tan University		
Project Mentor	Chau, Truong Ngoc		
Scrum master / Project Leader & contact details	Tien, Nguyen Van Email: cnnguyenvantien@gmail.com Tel: 0704.042.832 Student ID: 24211208536		
Partner Organization			
Project Web URL			
Team members	Name	Email	Tel
24211202634	Phuoc, Ha Duc	dphuoc432000@gmail.com	0961622464
24211206538	Huy, Truong Dong	huydongtruong@gmail.com	0358040650
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REVISION HISTORY

Version	Date	Comments	Author	Approval
v1.0	03/03/2022	Initial Release	All Members	x
v1.1	03/03/2022	sprint 1	Tien	x
v1.2	21/03/2022	sprint 2	Tien	x
v1.3	16/04/2022	sprint 3	Tien	x
v1.4	02/05/2022	sprint 4	Tien	x
v1.5	10/05/2022	Format document	Tien	x

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SIGNATURE

Document Approvals: *The following signatures are required for approval of this document.*

Chau, Truong Ngoc <i>Mentor</i>		Date:
Tien, Nguyen Van <i>Scrum Master</i>		Date:
Phuoc, Ha Duc <i>Product Owner</i>		Date:
Huy, Truong Dong <i>Member</i>		Date:
Dat, Nguyen Thanh <i>Member</i>		Date:

1. Introduction

This document is the Test Plan for SENIOR PROJECT MANAGEMENT SYSTEM FOR INTERNATIONAL SCHOOL, presented by Quality Assurance. It describes the testing strategy and approach to testing QA will use to validate this product's pre-release. It also contains the various resources needed to successfully complete this project.

1.1. Purpose

The purpose of this document is to provide an overview and guidance for the SENIOR PROJECT MANAGEMENT SYSTEM FOR INTERNATIONAL SCHOOL - Test Plan project. The objective is also to establish a level of general understanding to the client of the testing procedure addressed in this document.

1.2. Scope

- This Test Plan is for release test plan for SENIOR PROJECT MANAGEMENT SYSTEM FOR INTERNATIONAL SCHOOL.
- The Test Plan defines the unit, system Testing approach. The test scope includes the following:
 - Testing of all functions and use cases requirements listed in the Product Backlog document.
 - Quality requirements and fit the SPMS metrics.
 - End-to-end testing of the SPMS platform.

1.3. References

Table 1.3: References.

No.	Reference
1	Proposal Document
2	User Story Document
3	Product Backlog Document
4	Project Plan Document

2. Test plan

- Unit test
- Integration testing

3. Test specification

3.1. Features to be tested

- About Page
- Introduction
- Notification (Student, Mentor and Admin)
- Student Account Management
- Lecturer Account Management
- Lecturer Profile
- My Topic
- Sample Topic
- Sample Document
- List Group
- My Group
- Topic Management
- Document Management
- Topic Approval
- Group Management
- Group Form
- Assign Mentor
- Task Management
- Task Management by Stage
- Defense Management
- Defense Form
- Contribution Report
- Assign Defense
- Calendar
- Scoreboard
- Grade Form

3.2. Feature not to be Tested

- Sign out.

3.3. Test deliverables

- Test Plan Document
- Test Case Document
- Test Summary Report

4. Test schedule

Table 4: *Test schedule.*

No.	Task Name	Start	Finish	Duration	Resource
1	About Page	15/03/2022	15/03/2022	1	Huy
2	Introduction	15/03/2022	15/03/2022	1	Huy
3	Notification (Student, Mentor and Admin)	16/03/2022	16/03/2022	2	Huy
4	Student Account Management	15/03/2022	15/03/2022	1	Dat
5	Lecturer Account Management	15/03/2022	15/03/2022	1	Dat
6	Lecturer Profile	16/03/2022	16/03/2022	1	Dat
7	My Topic	05/04/2022	05/04/2022	1	Huy
8	Sample Topic	05/04/2022	05/04/2022	1	Huy
9	Sample Document	06/04/2022	06/04/2022	1	Huy
10	List Group	06/04/2022	06/04/2022	1	Huy
11	My Group	06/04/2022	06/04/2022	1	Huy
12	Topic Management	05/04/2022	05/04/2022	1	Dat
13	Document Management	05/04/2022	05/04/2022	1	Dat
14	Topic Approval	06/04/2022	06/04/2022	1	Dat
15	Group Management	06/04/2022	06/04/2022	1	Dat
16	Group Form	06/04/2022	06/04/2022	1	Dat

17	Assign Mentor	06/04/2022	06/04/2022	1	Dat
18	Task Management	27/04/2022	27/04/2022	2	Huy
19	Task Management by Stage	27/04/2022	27/04/2022	3	Huy
20	Defense Management	27/04/2022	27/04/2022	2	Huy
21	Defense Form	27/04/2022	27/04/2022	2	Huy
22	Contribution Report	27/04/2022	27/04/2022	2	Dat
23	Assign Defense	27/04/2022	27/04/2022	2	Dat
24	Calendar	27/04/2022	27/04/2022	2	Dat
25	Scoreboard	11/05/2022	11/05/2022	2	Huy
26	Grade Form	11/05/2022	11/05/2022	2	Huy

5. Test cycle entry and exit criteria

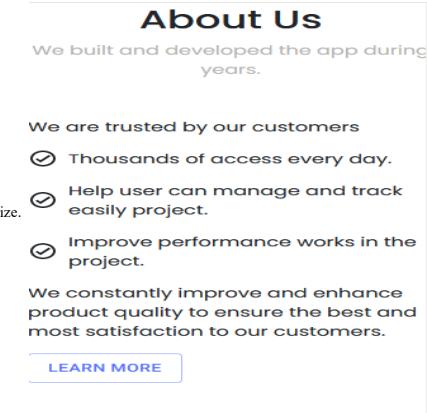
5.1. Entry criteria

- All test hardware platforms must have been successfully installed, configured, and functioning properly.
- All the necessary documentation, design, and requirements information should be available that will allow testers to operate the system and judge the correct behavior.
- Proper test case is available.
- The test environment such as, lab, hardware, software, and system administration support should be ready.

5.2. Exit criteria

- All test cases have been run.
- A certain level of requirements coverage has been achieved.
- No high priority or severe bugs are left outstanding.
- All high-risk areas have been fully tested, with only minor residual risks left outstanding.
- The schedule has been achieved.

Module Code	About Page		
Tester	Nguyen Thanh Dat		
Pre-condition	Login successfully		
Pass	Fail		Number of test case
2	1		3

ID	Test case Description	Test case Procedure	Expected Output	Actual Result	Result	Test Date
TC_01	Responsive Website	1. Use the website on the mobile, laptop or desktop 2. Click into the About Page link	The website is not broken.	<p>The website is broken at 320x568 size. The padding is 0px.</p> 	Fail	15/3/2022
TC_02	Load Notification Data	1. Click into the About Page link	Click notification icon after it will display the list of notification. And display the number of notification.	Click notification icon after it will display the list of notification. And display the number of notification.	Pass	15/3/2022
TC_03	Highlight Link	1. Click into the About Page link	Highlight the About Page link with another color.	Highlight the About Page link with another color.	Pass	15/3/2022

Module Code	Introduction		
Tester	Nguyen Thanh Dat		
Pre-condition	Login successfully		
Pass	Fail	Number of test case	
3	0	3	

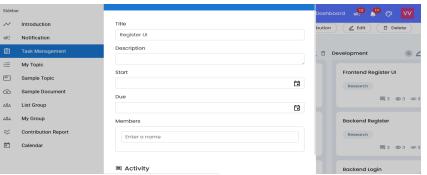
ID	Test case Description	Test case Procedure	Expected Output	Actual Result	Result	Test Date
TC_01	Responsive Website	1. Use the website on the mobile, laptop or desktop 2. Click into the Introduction link	The website is not broken.	The website is not broken.	Pass	15/3/2022
TC_02	Load Notification Data	1. Click into the Introduction link	Click notification icon after it will display the list of notification. And display the number of notification.	Click notification icon after it will display the list of notification. And display the number of notification.	Pass	15/3/2022
TC_03	Highlight Link	1. Click into the Introduction link	Highlight the Introduction link with another color.	Highlight the Introduction link with another color.	Pass	15/3/2022

Module Code	Notification		
Tester	Nguyen Thanh Dat		
Pre-condition	Login successfully with Student, Mentor or Admin role.		
Pass	Fail	Number of test case	
5	0	5	

ID	Test case Description	Test case Procedure	Expected Output	Actual Result	Result	Test Date
TC_01	Responsive Website	1. Use the website on the mobile, laptop or desktop. 2. Click into the Notification link.	The website is not broken.	The website is not broken.	Pass	16/3/2022
TC_02	Load Notification Data	1. Click into the Notification link.	Load the list of notification. And display the number of notification.	Load the list of notification. And display the number of notification.	Pass	16/3/2022
TC_03	Highlight Link	1. Click into the Notification link.	Highlight the Notification link with another color.	Highlight the Notification link with another color.	Pass	16/3/2022
TC_04	Display Notification Detail	1. Click into a notification.	Display a notification detail.	Display a notification detail.	Pass	16/3/2022
TC_05	Display Default Notification	1. Click into the Notification link.	Display a default notification.	Display a default notification.	Pass	16/3/2022

Module Code	Task Management		
Tester	Nguyen Thanh Dat		
Pre-condition	Login successfully with Student role.		
Pass	Fail	Number of test case	
5	0	5	

ID	Test case Description	Test case Procedure	Expected Output	Actual Result	Result	Test Date
TC_01	Reponsive Website	1. Use the website on the mobile, laptop or desktop. 2. Click into the Task Management link.	The website is not broken.	The website is not broken.	Pass	27/4/2022
TC_02	Load Stage Data	1. Click into the Task Management link.	Load the list of stages.	Load the list of stages.	Pass	27/4/2022
TC_03	Highlight Link	1. Click into the Task Management link.	Highlight the Task Management link with another color.	Highlight the Task Management link with another color.	Pass	27/4/2022
TC_04	Add Stage	1. Click into the plus icon. 2. Enter all fields. - Stage Name : Sprint 10. - Stage Description : Design. - Project : Chat Web App. 3. Submit	Display message.	Display message.	Pass	27/4/2022
TC_05	Add Stage with empty values	1. Click into the plus icon. 2. Don't enter all fields. - Stage Name : null. - Stage Description : null. - Project : Chat Web App. 3. Submit	Notify empty fields must be fill in.	Notify empty fields must be fill in.	Pass	27/4/2022

Module Code	Task Management						
Tester	Nguyen Thanh Dat						
Pre-condition	Login successfully with Student role.						
Pass	Fail	Number of test case				13	
ID	Test case Description	Test case Procedure	Expected Output	Actual Result			
TC_01	Reponsive Website	1. Use the website on the mobile, laptop or desktop. 2. Click into the Task Management link.	The website is not broken.	Task Form is broken.		Fail	27/4/2022
TC_02	Load Task Data	1. Click into the Task Management link. 2. Choose a stage.	Load the list of task.	Load the list of task.		Pass	27/4/2022
TC_03	Highlight Link	1. Click into the Task Management link.	Highlight the Task Management link with another color.	Highlight the Task Management link with another color.		Pass	27/4/2022
TC_04	Add Task	1. Click into the "Add another card" button. 2. Enter a name for task. - Name : Login UI. 3. Click into the "Add Item" button.	Add task successfully.	Add task successfully.		Pass	27/4/2022
TC_05	Edit Task	1. Click into a task. 2. Enter all fields. - Name : Register UI. - Description : Color Red. - Start Date : 1/5/2022. - End Date : 3/5/2022. - Member : Viet. 3. Click into the "Close" icon to save changes.	Save changes successfully.	Save changes successfully.		Pass	27/4/2022
TC_06	Remove Task	1. Click into a task. 2. Click into the "Drop" icon. 3. Choose "Agree" to remove task.	Remove task successfully.	Remove task successfully.		Pass	27/4/2022
TC_07	Add List	1. Click into the "Add another list" button. 2. Enter a name for list. - Name : Requirement. 3. Click into the "Add Item" button.	Add list successfully.	Add list successfully.		Pass	27/4/2022
TC_08	Edit List	1. Click into the "Edit" icon. 2. Enter a new name for list. - Name : Coding. 3. Click into the "Save" icon to save changes.	Edit list successfully.	Edit list successfully.		Pass	27/4/2022
TC_09	Remove List	1. Click into the "Drop" icon. 2. Choose "Agree" to remove list.	Remove list successfully.	Remove list successfully.		Pass	27/4/2022
TC_10	Edit Stage	1. Click into a stage. 2. Click into the "Edit" icon. 3. Enter all fields. - Name : Sprint 11. - Description : Coding. 4. Submit	Edit stage successfully.	Edit stage successfully.		Pass	27/4/2022
TC_11	Remove Stage	1. Click into a stage. 2. Click into the "Drop" icon. 3. Choose "Agree" to remove stage.	Remove stage successfully.	Remove stage successfully.		Pass	27/4/2022
TC_12	Move Task	1. Drag a task. 2. Drag to a new list. 3. Stop dragging.	Move task successfully.	Move task successfully.		Pass	27/4/2022
TC_13	Open Task Detail	1. Click into a task.	Display a detail information for a task.	Members <input type="text" value="Enter a name"/>	Task doesn't display members in this task.	Fail	27/4/2022

Module Code	My Topic		
Tester	Nguyen Thanh Dat		
Pre-condition	Login successfully with Student role.		
Pass	Fail	Number of test case	
4	0	4	

ID	Test case Description	Test case Procedure	Expected Output	Actual Result	Result	Test Date
TC_01	Responsive Website	1. Use the website on the mobile, laptop or desktop. 2. Click into the My Topic link.	The website is not broken.	The website is not broken.	Pass	04/05/2022
TC_02	Load My Topic	1. Click into the My Topic link.	Load the information about my topic.	Load the information about my topic.	Pass	04/05/2022
TC_03	Highlight Link	1. Click into the My Topic link.	Highlight the My Topic link with another color.	Highlight the My Topic link with another color.	Pass	04/05/2022
TC_04	Update Topic	1. Click into the My Topic link. 2. Enter all fields. - Leader : Viet. - Title : Chat Web App. - Description : The system should use Angular and Node JS. - Note : Socket IO for Realtime. 3. Update topic.	Update topic successfully.	Update topic successfully.	Pass	04/05/2022

Module Code	Sample Topic		
Tester	Nguyen Thanh Dat		
Pre-condition	Login successfully with Student role.		
Pass	Fail	Number of test case	
4	0	4	

ID	Test case Description	Test case Procedure	Expected Output	Actual Result	Result	Test Date
TC_01	Responsive Website	1. Use the website on the mobile, laptop or desktop. 2. Click into the My Topic link.	The website is not broken.	The website is not broken.	Pass	04/05/2022
TC_02	Load Sample Topic	1. Click into the Sample Topic link.	Load the list of sample topics.	Load the list of sample topics.	Pass	04/05/2022
TC_03	Highlight Link	1. Click into the Sample Topic link.	Highlight the Sample Topic link with another color.	Highlight the Sample Topic link with another color.	Pass	04/05/2022
TC_04	Download Detail Documents	1. Click into the My Topic link. 2. Click into the "Document" button. 3. Choose a document to download.	Download documents successfully.	Download documents successfully.	Pass	04/05/2022

Module Code	Sample Document		
Tester	Nguyen Thanh Dat		
Pre-condition	Login successfully with Student role.		
Pass	Fail	Number of test case	
4	0	4	

ID	Test case Description	Test case Procedure	Expected Output	Actual Result	Result	Test Date
TC_01	Reponsive Website	1. Use the website on the mobile, laptop or desktop. 2. Click into the Sample Document link.	The website is not broken.	The website is not broken.	Pass	04/06/2022
TC_02	Load Sample Document	1. Click into the Sample Document link.	Load the list of sample documents.	Load the list of sample documents.	Pass	04/06/2022
TC_03	Highlight Link	1. Click into the Sample Document link.	Highlight the Sample Document link with another color.	Highlight the Sample Document link with another color.	Pass	04/06/2022
TC_04	Download Documents	1. Click into the Sample Document link. 2. Click into the "Arrow" button. 3. Choose the "Download" button.	Download documents successfully.	Download documents successfully.	Pass	04/06/2022

Module Code	List Group		
Tester	Nguyen Thanh Dat		
Pre-condition	Login successfully with Student role.		
Pass	Fail	Number of test case	
5	0	5	

ID	Test case Description	Test case Procedure	Expected Output	Actual Result	Result	Test Date
TC_01	Reponsive Website	1. Use the website on the mobile, laptop or desktop. 2. Click into the List Group link.	The website is not broken.	The website is not broken.	Pass	04/06/2022
TC_02	Load List Group	1. Click into the List Group link.	Load the list of groups.	Load the list of groups.	Pass	04/06/2022
TC_03	Highlight Link	1. Click into the List Group link.	Highlight the List Group link with another color.	Highlight the List Group link with another color.	Pass	04/06/2022
TC_04	Display Detail Group	1. Click into the List Group link. 2. Click into a group.	Display a detail form for this group.	Display a detail form for this group.	Pass	04/06/2022
TC_05	Change Tab	1. Click into the List Group link. 2. Choose a tab.	Change a type by tabs.	Change a type by tabs.	Pass	04/06/2022

Module Code	My Group		
Tester	Nguyen Thanh Dat		
Pre-condition	Login successfully with Student role.		
Pass	Fail	Number of test case	
5	0	5	

ID	Test case Description	Test case Procedure	Expected Output	Actual Result	Result	Test Date
TC_01	Reponsive Website	1. Use the website on the mobile, laptop or desktop. 2. Click into the My Group link.	The website is not broken.	The website is not broken.	Pass	04/06/2022
TC_02	Load My Group	1. Click into the My Group link.	Load the detail information for my group.	Load the detail information for my group.	Pass	04/06/2022
TC_03	Highlight Link	1. Click into the My Group link.	Highlight the My Group link with another color.	Highlight the My Group link with another color.	Pass	04/06/2022
TC_04	Count Mentor	1. Click into the My Group link.	Display correctly the number of mentor.	Display correctly the number of mentor.	Pass	04/06/2022
TC_05	Count Member	1. Click into the My Group link.	Display correctly the number of member.	Display correctly the number of member.	Pass	04/06/2022

Module Code	Student Account Management		
Tester	Nguyen Thanh Dat		
Pre-condition	Login successfully with Admin role.		
Pass	Fail		Number of test case
3	1		4

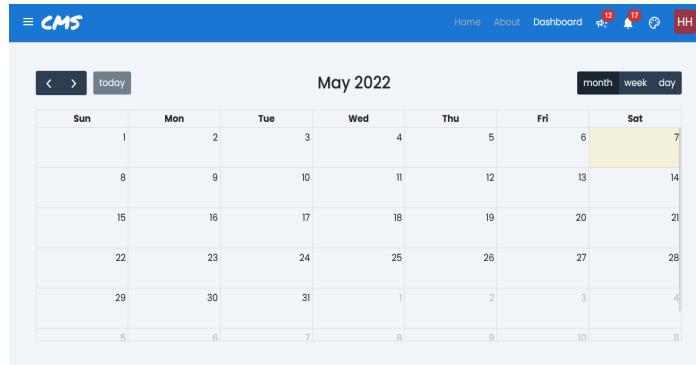
ID	Test case Description	Test case Procedure	Expected Output	Actual Result	Result	Test Date
TC_01	Responsive Website	1. Use the website on the mobile, laptop or desktop. 2. Click into the Student Account Management link.	The website is not broken.	The website is not broken.	Pass	15/3/2022
TC_02	Load Accounts	1. Click into the Student Account Management link.	Load the list of student accounts.	Load the list of student accounts.	Pass	15/3/2022
TC_03	Highlight Link	1. Click into the Student Account Management link.	Highlight the Student Account Management link with another color.	Highlight the Student Account Management link with another color.	Pass	15/3/2022
TC_04	Reset Password	1. Click into the Student Account Management link. 2. Find a row. 3. Click into the "Reset" icon. 4. Choose "Agree" to reset password.	Reset password successfully.	Notification don't display after reset 	Fail	15/3/2022

Module Code	Lecturer Account Management				
Tester	Nguyen Thanh Dat				
Pre-condition	Login successfully with Admin role.				
Pass	Fail	Number of test case			
4	0	4			

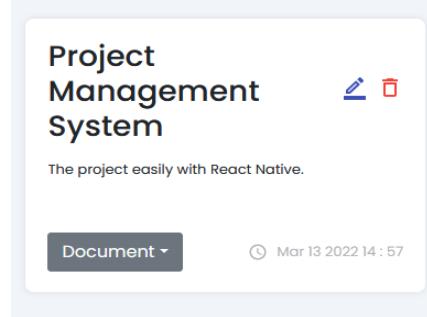
ID	Test case Description	Test case Procedure	Expected Output	Actual Result	Result	Test Date
TC_01	Reponsive Website	1. Use the website on the mobile, laptop or desktop. 2. Click into the Lecturer Account Management link.	The website is not broken.	The website is not broken.	Pass	15/3/2022
TC_02	Load Accounts	1. Click into the Lecturer Account Management link.	Load the list of lecturer accounts	Load the list of lecturer accounts	Pass	15/3/2022
TC_03	Highlight Link	1. Click into the Lecturer Account Management link.	Highlight the Lecturer Account Management link with another color.	Highlight the Lecturer Account Management link with another color.	Pass	15/3/2022
TC_04	Reset Password	1. Click into the Lecturer Account Management link. 2. Find a row. 3. Click into the "Reset" icon. 4. Choose "Agree" to reset password.	Reset password successfully.	Reset password successfully.	Pass	15/3/2022

Module Code	Contribution Report		
Tester	Nguyen Thanh Dat		
Pre-condition	Login successfully with Student role.		
Pass	Fail	Number of test case	
5	0	5	

ID	Test case Description	Test case Procedure	Expected Output	Actual Result	Result	Test Date
TC_01	Reponsive Website	1. Use the website on the mobile, laptop or desktop. 2. Click into the Contribution Report link.	The website is not broken.	The website is not broken.	Pass	27/4/2022
TC_02	Load Report	1. Click into the Contribution Report link.	Load the report data.	Load the report data.	Pass	27/4/2022
TC_03	Highlight Link	1. Click into the Contribution Report link.	Highlight the Contribution Report link with another color.	Highlight the Contribution Report link with another color.	Pass	27/4/2022
TC_04	Members with other colors	1. Click into the Contribution Report link.	Display correctly colors with every members.	Display correctly colors with every members.	Pass	27/4/2022
TC_05	Display Comment	1. Click into the Contribution Report link.	Display correctly colors with every members.	Display correctly colors with every members.	Pass	27/4/2022

Module Code	Calendar						
Tester	Nguyen Thanh Dat						
Pre-condition	Login successfully with Student and Mentor roles.						
Pass	Fail	Number of test case					
2	1	3					
ID	Test case Description	Test case Procedure	Expected Output	Actual Result			
TC_01	Responsive Website	1. Use the website on the mobile, laptop or desktop. 2. Click into the Calendar link.	The website is not broken.	The website is not broken.			
TC_02	Load Calendar	1. Click into the Calendar link.	Load the list of councils.	 <p>The screenshot shows a calendar for May 2022. The days of the week are labeled: Sun, Mon, Tue, Wed, Thu, Fri, Sat. The dates range from 1 to 31. The date '6' is highlighted with a yellow background, while all other dates are white. At the top right of the calendar, there are three small red circular icons with white symbols: a person, a gear, and a document.</p>			
TC_03	Highlight Link	1. Click into the Calendar link.	Highlight the Calendar link with another color.	Highlight the Calendar link with another color.			

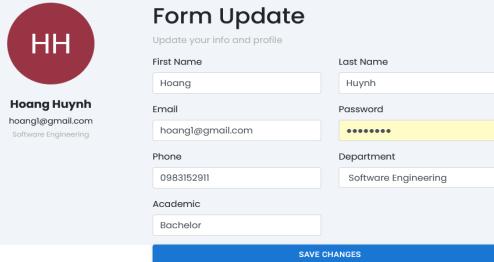
Module Code	Topic Management		
Tester	Nguyen Thanh Dat		
Pre-condition	Login successfully with Mentor roles.		
Pass	Fail	Number of test case	
5	1	6	

ID	Test case Description	Test case Procedure	Expected Output	Actual Result	Result	Test Date
TC_01	Responsive Website	1. Use the website on the mobile, laptop or desktop. 2. Click into the Topic Management link.	The website is not broken.	The size of title is so long. 	Fail	04/05/2022
TC_02	Load Topic Management	1. Click into the Topic Management link.	Load the list of lecturer accounts	Load the list of lecturer accounts	Pass	04/05/2022
TC_03	Highlight Link	1. Click into the Topic Management link.	Highlight the Topic Management link with another color.	Highlight the Topic Management link with another color.	Pass	04/05/2022
TC_04	Add Topic	1. Click into the Topic Management link. 2. Enter all fields. - Title : Chat Web. - Description : Support for Web. - File : desc.csv 3. Submit	Add topic successfully.	Add topic successfully.	Pass	04/05/2022
TC_05	Edit Topic	1. Click into the Topic Management link. 2. Enter all fields. - Title : Chat Web 1. - Description : Support for Web 1. 3. Submit.	Edit topic successfully.	Edit topic successfully.	Pass	04/05/2022
TC_06	Remove Topic	1. Click into the Topic Management link. 2. Click into the "Drop" icon. 3. Choose "Agree" to remove.	Remove topic successfully.	Remove topic successfully.	Pass	04/05/2022

Module Code	Document Management		
Tester	Nguyen Thanh Dat		
Pre-condition	Login successfully with Mentor roles.		
Pass	Fail	Number of test case	
9	0	9	

ID	Test case Description	Test case Procedure	Expected Output	Actual Result	Result	Test Date
TC_01	Responsive Website	1. Use the website on the mobile, laptop or desktop. 2. Click into the Document Management link.	The website is not broken.	The website is not broken.	Pass	04/05/2022
TC_02	Load Document	1. Click into the Document Management link.	Load the list of documents.	Load the list of documents.	Pass	04/05/2022
TC_03	Highlight Link	1. Click into the Document Management link.	Highlight the Document Management link with another color.	Highlight the Document Management link with another color.	Pass	04/05/2022
TC_04	Add Folder	1. Click into the Document Management link. 2. Enter all fields. - Title : Demo. 3. Submit	Add folder successfully.	Add folder successfully.	Pass	04/05/2022
TC_05	Add File	1. Click into the Document Management link. 2. Enter all fields. - Title : desc.csv. 3. Submit	Add file successfully.	Add file successfully.	Pass	04/05/2022
TC_06	Rename Folder	1. Click into the Document Management link. 2. Enter all fields. - Title : Demo 1. 3. Save	Rename folder successfully.	Rename folder successfully.	Pass	04/05/2022
TC_07	Remove File	1. Click into the Document Management link. 2. Choose a folder 3. Click into the "Remove" button.	Remove file successfully.	Remove file successfully.	Pass	04/05/2022
TC_08	Remove Folder	1. Click into the Document Management link. 2. Choose a file 3. Click into the "Remove" button.	Remove folder successfully.	Remove folder successfully.	Pass	04/05/2022
TC_09	Download File	1. Click into the Document Management link. 2. Choose a file 3. Download	Download file successfully.	Download file successfully.	Pass	04/05/2022

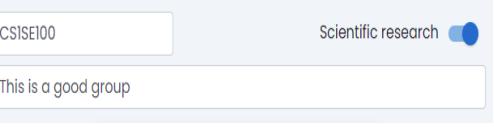
Module Code	Lecturer Profile		
Tester	Nguyen Thanh Dat		
Pre-condition	Login successfully with Mentor roles.		
Pass	Fail	Number of test case	
3	1	4	

ID	Test case Description	Test case Procedure	Expected Output	Actual Result	Result	Test Date
TC_01	Responsive Website	1. Use the website on the mobile, laptop or desktop. 2. Click into the Lecturer Profile link.	The website is not broken.		Fail	16/3/2022
TC_02	Load Lecturer Profile	1. Click into the Lecturer Profile link.	Load the list of lecturer accounts	Load the list of lecturer accounts	Pass	16/3/2022
TC_03	Highlight Link	1. Click into the Lecturer Profile link.	Highlight the Lecturer Profile link with another color.	Highlight the Lecturer Profile link with another color.	Pass	16/3/2022
TC_04	Load Lecturer Profile	1. Click into the Lecturer Profile link. 2. Enter all fields - Last name : Huynh Van - Phone : 0983152912 - Academic : Bachelor 3. Save changes	Save changes successfully.	Save changes successfully.	Pass	16/3/2022

Module Code	Group Management		
Tester	Truong Dong Huy		
Pre-condition	Login successfully with Moderator role.		
Pass	Fail	Number of test case	
9	0	9	

ID	Test case Description	Test case Procedure	Expected Output	Actual Result	Result	Test Date
TC_01	Responsive Website	1. Use the website on the mobile, laptop or desktop. 2. Group Management link.	The website is not broken.	The website is not broken.	Pass	04/06/2022
TC_02	Load Groups	1. Click on Group Management link.	Load the list of Groups	Load the list of Groups	Pass	04/06/2022
TC_03	Show 9 groups each page	Click on Group Management link.	Show 9 groups each page	Show 9 groups each page	Pass	04/06/2022
TC_04	View next page, previous page, specific page number	1. Click on Group Management link. 2. Click on "Previous" or "Next" or 2 in pagination	Show equivalent groups of each page	Show equivalent groups of each page	Pass	04/06/2022
TC_05	Show groups of Capstone 1 / 2	1. Click on Group Management link. 2. Click on "Castone 1/ Capstone 2" Button at the top of the page	Show a list of groups in each type (capstone 1 / capstone 2)	Show a list of groups in each type (capstone 1 / capstone 2)	Pass	04/06/2022
TC_06	Export all groups	1. Click on Topic Management link. 2. Click on "Export Project" at the top of the page	Download the "Excel" file	Download the "Excel" file	Pass	04/06/2022
TC_07	Edit group	1. Click on Topic Management link. 2. Click on "Edit" icon of the group to edit	Redirect to Group Form page to edit that group	Redirect to Group Form page to edit that group	Pass	04/06/2022
TC_08	Delete group	1. Click on Topic Management link. 2. Click on "Delete" icon of the group to delete	Delete that group	Delete that group	Pass	04/06/2022
TC_09	View details group	1. Click on Topic Management link. 2. Click on group card to view details of that group	Show details of that group (Name, Description, Members, mentor,...)	Show details of that group (Name, Description, Members, mentor,...)	Pass	04/06/2022

Module Code	Group Form		
Tester	Truong Dong Huy		
Pre-condition	Login successfully with Moderator role.		
Pass	Fail	Number of test case	
7	2	9	

ID	Test case Description	Test case Procedure	Expected Output	Actual Result	Result	Test Date
TC_01	Responsive Website	1. Use the website on the mobile, laptop or desktop. 2. Click on Group Form link.	The website is not broken.	The website is not broken.	Pass	04/06/2022
TC_02	Show Group Form	1. Click on Group Form link.	Show text fields, capstone type, two box of students to create group	Show text fields, capstone type, two box of students to create group	Pass	04/06/2022
TC_03	Load Students in the left box	1. Click on Group Form link.	Show Students in the left box	Show Students in the left box	Pass	04/06/2022
TC_04	Select Student	1. Click on Group Form link. 2. Click on each student to create group	That student move from the first box to second box	That student move from the first box to second box	Pass	04/06/2022
TC_05	Create Group	1. Click on Group Form link. 2. Fill all text fields, select students 3. Click on submit button	Show the successful message	Show the successful message	Pass	04/06/2022
TC_06	Check quality of group	1. Click on Topic Management link. 2. Select students 3. If the average of GPA of that group is < 2.5, show message can't create	Show message "Average GPA of each group must be greater than 2.5" Disable the "Submit Button"	Show message "Average GPA of each group must be greater than 2.5" Disable the "Submit Button"	Pass	04/06/2022
TC_07	Select type capstone of group to create	1. Click on Topic Management link. 2. Click on "Capstone 1/ Capstone 2" in the tab	Show student of capstone 1 / capstone 2	Show student of capstone 1 / capstone 2	Pass	04/06/2022
TC_08	Reset data after create	1. Click on Group Form link. 2. Fill all text fields, select students 3. Click on submit button	Clear all text fields, selected box	Not clear 	Fail	04/06/2022
TC_09	Handle didn't fill all information	1. Click on Topic Management link. 2. Enter group name 3. Select Student 4. Click on "Submit" button	Show message "You need to fill all information"	Show message "Create successfully"	Fail	04/06/2022

Module Code	Assign Mentor		
Tester	Truong Dong Huy		
Pre-condition	Login successfully with Moderator role.		
Pass	Fail	Number of test case	
9	0	9	

ID	Test case Description	Test case Procedure	Expected Output	Actual Result	Result	Test Date
TC_01	Responsive Website	1. Use the website on the mobile, laptop or desktop. 2. Click on Assign Mentor link.	The website is not broken.	The website is not broken.	Pass	04/06/2022
TC_02	Show Assign Mentor page	1. Click on Assign Mentor link.	Show two box of Lecturers and Groups to Assign	Show two box of Lecturers and Groups to Assign	Pass	04/06/2022
TC_03	Load Mentors in the left box	1. Click on Assign Mentor link.	Load Mentors in the left box	Load Mentors in the left box	Pass	04/06/2022
TC_04	Load Groups in the right box	1. Click on Assign Mentor link.	Load Groups in the right box	Load Groups in the right box	Pass	04/06/2022
TC_05	Select Mentors to Assign	1. Click on Assign Mentor link. 2. Click on each Mentor	Hide Groups have that Mentor Show Assign Review Move that Mentor to the Assign Review component	Hide Groups have that Mentor Show Assign Review Move that Mentor to the Assign Review component	Pass	04/06/2022
TC_06	Select Groups to Assign	1. Click on Assign Mentor link. 2. Click on each Group	Show Assign Review Move that Group to the Assign Review component	Show Assign Review Move that Group to the Assign Review component	Pass	04/06/2022
TC_07	Assign Mentors	1. Click on Topic Management link. 2. Select Mentors to Assign 3. Select Groups to Assign 4. Click on "Submit" button	Show message "Assign Mentors successfully"	Show message "Assign Mentors successfully"	Pass	04/06/2022
TC_08	View Details of Mentor	1. Click on Topic Management link. 2. Click on "Dropdown" icon to view details of Mentor	Show details information of that mentor	Show details information of that mentor	Pass	04/06/2022
TC_09	View Details of Group	1. Click on Topic Management link. 2. Click on "Dropdown" icon to view details of Group	Show details information of that group	Show details information of that group	Pass	04/06/2022

Module Code	Council Management		
Tester	Truong Dong Huy		
Pre-condition	Login successfully with Moderator role.		
Pass	Fail	Number of test case	
7	1	8	

ID	Test case Description	Test case Procedure	Expected Output	Actual Result	Result	Test Date
TC_01	Responsive Website	1. Use the website on the mobile, laptop or desktop. 2. Click on Council Management link	The website is not broken.	The website is not broken.	Pass	27/4/2022
TC_02	Load Councils	1. Click on Council Management link.	Load the list of Councils	Load the list of Councils	Pass	27/4/2022
TC_03	Show 9 Councils each page	1. Click on Council Management link.	Show 9 Councils each page	Show 9 Councils each page	Pass	27/4/2022
TC_04	View next page, previous page, specific page number	1. Click on Council Management link. 2. Click on "Previous" or "Next" or 2 in pagination	Show equivalent groups of each page	Show equivalent groups of each page	Pass	27/4/2022
TC_05	Export all Councils	1. Click on Council Management link. 2. Click on "Export Councils" at the top of the page	Download the "Excel" file	Nothing happen	Fail	27/4/2022
TC_06	Edit Councils	1. Click on Council Management link. 2. Click on "Edit" icon of the group to edit	Redirect to Council Form page to edit that Council	Redirect to Council Form page to edit that Council	Pass	27/4/2022
TC_07	Delete council	1. Click on Council Management link. 2. Click on "Delete" icon of the council to delete	Delete that council	Delete that council	Pass	27/4/2022
TC_08	View details Councils	1. Click on Council Management link. 2. Click on Council card to view details of that Council	Show details of that group (Name, Description, Members, Group,...)	Show details of that group (Name, Description, Members, Group,...)	Pass	27/4/2022

Module Code	Group Form		
Tester	Truong Dong Huy		
Pre-condition	Login successfully with Moderator role.		
Pass	Fail	Number of test case	
5	2	7	

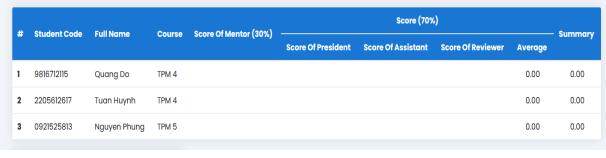
ID	Test case Description	Test case Procedure	Expected Output	Actual Result	Result	Test Date
TC_01	Reponsive Website	1. Use the website on the mobile, laptop or desktop. 2. Click on Group Form link.	The website is not broken.	The website is not broken.	Pass	27/4/2022
TC_02	Show Council Form	1. Click on Council Form link.	Show text fields, datepicker , two box of lecturers to create group	Show text fields, datepicker , two box of lecturers to create group	Pass	27/4/2022
TC_03	Load Lecturers in the left box	1. Click on Council Form link.	Show Student in the left box	Load Student in the left box	Pass	27/4/2022
TC_04	Select Lecturers	1. Click on Council Form link. 2. Click on each Lecturers to create Council	That Lecturer move from the first box to second box	That Lecturer move from the first box to second box	Pass	27/4/2022
TC_05	Create Council	1. Click on Council Form link. 2. Fill all text fields, datepicker, select Lecturers 3. Click on submit button	Show the successful message	Show the successful message	Pass	27/4/2022
TC_06	Reset data after create	1. Click on Council Form link. 2. Fill all text fields, select Lecturers 3. Click on submit button	Clear all text fields, selected box	Not clear 	Fail	27/4/2022
TC_07	Handle didn't fill all information	1. Click on Council Form link. 2. Enter council name 3. Select Lecturers 4. Click on "Submit" button	Show message "You need to fill all information"	Show message "Create successfully"	Fail	27/4/2022

Module Code	Assign Council		
Tester	Truong Dong Huy		
Pre-condition	Login successfully with Moderator role.		
Pass	Fail	Number of test case	
9	0	9	

ID	Test case Description	Test case Procedure	Expected Output	Actual Result	Result	Test Date
TC_01	Reponsive Website	1. Use the website on the mobile, laptop or desktop. 1. Click on Assign Council link.	The website is not broken.	The website is not broken.	Pass	27/4/2022
TC_02	Show Assign Council page	1. Click on Assign Council link.	Show two box of Councils and Groups to Assign	Show two box of Councils and Groups to Assign	Pass	27/4/2022
TC_03	Load Councils in the left box	1. Click on Assign Council link.	Load Councils in the left box	Load Councils in the left box	Pass	27/4/2022
TC_04	Load Groups in the right box	1. Click on Assign Council link.	Load Groups in the right box	Load Groups in the right box	Pass	27/4/2022
TC_05	Select Council to Assign	1. Click on Assign Council link. 2. Click on each Council	Show selected Council	Show selected Council	Pass	27/4/2022
TC_06	Select Groups to Assign	1. Click on Assign Council link. 2. Click on each Group	Show selected Group	Show selected Group	Pass	27/4/2022
TC_07	Assign Council	1. Click on Assign Council link. 2. Select Council to Assign 3. Select Group to Assign 4. Click on "Submit" button	Show message "Assign Council successfully"	Show message "Assign Council successfully"	Pass	27/4/2022
TC_08	View Details of Council	1. Click on Assign Council link. 2. Click on "Dropdown" icon to view details of Council	Show details information of that council	Show details information of that council	Pass	27/4/2022
TC_09	View Details of Group	1. Click on Topic Management link. 2. Click on "Dropdown" icon to view details of Group	Show details information of that group	Show details information of that group	Pass	27/4/2022

Module Code	Topic Approval		
Tester	Truong Dong Huy		
Pre-condition	Login successfully with Moderator role.		
Pass	Fail	Number of test case	
6	0	6	

ID	Test case Description	Test case Procedure	Expected Output	Actual Result	Result	Test Date
TC_01	Reponsive Website	1. Use the website on the mobile, laptop or desktop. 2. Click on Topic Approval link.	The website is not broken.	The website is not broken.	Pass	04/06/2022
TC_02	Load Topics	1. Click on Topic Approval link.	Load the list of Topics	Load the list of Topics	Pass	04/06/2022
TC_03	Approve Topic	1. Click on Topic Approval link. 2. Click on "Approve" Button at the topic	The "Approve" button is faded and show approved All of others button show as default	The "Approve" button is faded and show approved All of others button show as default	Pass	04/06/2022
TC_04	Reject Topic	1. Click on Topic Approval link. 2. Click on "Reject" Button at the topic	The "Reject" button show Rejected All of others button show as default	The "Reject" button show Rejected All of others button show as default	Pass	04/06/2022
TC_05	Cancel Topic	1. Click on Topic Approval link. 2. Click on "Cancel" Button at the topic	All of others button show as default	All of others button show as default	Pass	04/06/2022
TC_06	Comment Topic	1. Click on Topic Approval link. 2. Click on comment line at the topic 3. Enter comment 4. Click on "Save" icon	Show comment of moderator at the topic	Show comment of moderator at the topic	Pass	04/06/2022

Module Code	Scoreboard																																																
Tester	Nguyen Thanh Dat																																																
Pre-condition	Login successfully with Moderator, Student or Mentor roles.																																																
Pass	Fail			Number of test case																																													
3	1			4																																													
ID	Test case Description	Test case Procedure	Expected Output	Actual Result																																													
TC_01	Responsive Website	1. Use the website on the mobile, laptop or desktop. 2. Click on Scoreboard link.	The website is not broken.	The website is not broken.																																													
TC_02	Load Groups	1. Click on Scoreboard link.	Load the list of groups	Load the list of groups																																													
TC_03	Highlight Link	1. Click on Scoreboard link.	Highlight the Document Management link with another color.	Highlight the Document Management link with another color.																																													
TC_04	Load Score Detail	1. Click on Scoreboard link. 2. Choose a group.	Display a score board include all information about the council and the score.	 <table border="1"> <thead> <tr> <th rowspan="2">#</th> <th rowspan="2">Student Code</th> <th rowspan="2">Full Name</th> <th rowspan="2">Course</th> <th rowspan="2">Score Of Mentor (30%)</th> <th colspan="4">Score (70%)</th> <th rowspan="2">Summary</th> </tr> <tr> <th>Score Of President</th> <th>Score Of Assistant</th> <th>Score Of Reviewer</th> <th>Average</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>991672015</td> <td>Quang Do</td> <td>TPM 4</td> <td></td> <td>0.00</td> <td>0.00</td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>2205602617</td> <td>Tuan Huynh</td> <td>TPM 4</td> <td></td> <td>0.00</td> <td>0.00</td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>0921525813</td> <td>Nguyen Phung</td> <td>TPM 5</td> <td></td> <td>0.00</td> <td>0.00</td> <td></td> <td></td> </tr> </tbody> </table>			#	Student Code	Full Name	Course	Score Of Mentor (30%)	Score (70%)				Summary	Score Of President	Score Of Assistant	Score Of Reviewer	Average	1	991672015	Quang Do	TPM 4		0.00	0.00			2	2205602617	Tuan Huynh	TPM 4		0.00	0.00			3	0921525813	Nguyen Phung	TPM 5		0.00	0.00			Fail	05/11/2022
#	Student Code	Full Name	Course	Score Of Mentor (30%)	Score (70%)							Summary																																					
					Score Of President	Score Of Assistant	Score Of Reviewer	Average																																									
1	991672015	Quang Do	TPM 4		0.00	0.00																																											
2	2205602617	Tuan Huynh	TPM 4		0.00	0.00																																											
3	0921525813	Nguyen Phung	TPM 5		0.00	0.00																																											

Module Code	Assign Grade		
Tester	Truong Dong Huy		
Pre-condition	Login successfully with Moderator role.		
Pass	Fail	Number of test case	
4	1	5	

ID	Test case Description	Test case Procedure	Expected Output	Actual Result	Result	Test Date
TC_01	Reponsive Website	1. Use the website on the mobile, laptop or desktop. 1. Click on Grade Form link.	The website is not broken.	The website is not broken.	Pass	05/11/2022
TC_02	Handle enter invalid grade	1. Click on Grade Form link. 2. Enter \$%^ or grade >10 in text field	Show message "Invalid grade"	Show \$%^ or grade >10 	Fail	05/11/2022
TC_03	Select council	1. Click on Assign Council link. 2. Click on "Select a council" in combobox 3. Select a council	Show council information on the right side	Show council information on the right side	Pass	05/11/2022
TC_04	Handle show number of students	1. Click on Assign Council link. 2. Click on "Select a council" in combobox 3. Select a council	Show number of students of that council in the form	Show number of students of that council in the form	Pass	05/11/2022
TC_05	Assign grade	1. Click on Assign Council link. 2. Click on "Select a council" in combobox 3. Select a council 4. Enter grade in text field 5. Click on "Submit" button	Show message "Assign Grade successfully"	Show message "Assign Grade successfully"	Pass	05/11/2022

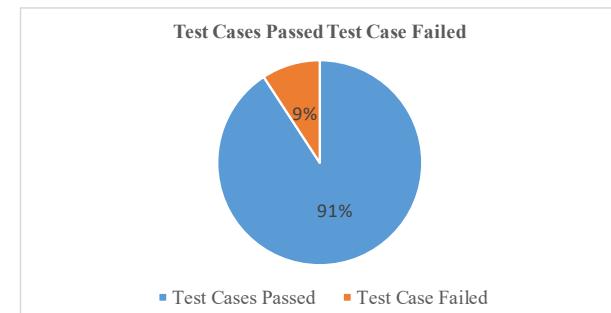
Test Report

Project Name	Senior Project Management System for International School	Creator	Nguyen Thanh Dat
Project Code	SPSM	Reviewer/Approver	Nguyen Thanh Dat
Document Code	C2SE.23-TestReport-SPMS.xlsx	Date	05/07/2022
Notes			

No	Module Name	Pass	Fail	Note	Number of test cases
1	About Page	2	1		3
2	Introduction	3	0		3
3	Notification (Student, Mentor and Admin)	5	0		5
4	Task Management	5	0		5
5	Task Management By Stage	11	2		13
6	My Topic	4	0		4
7	Sample Topic	4	0		4
8	Sample Document	4	0		4
9	List Group	5	0		5
10	My Group	5	0		5
11	Contribution Report	5	0		5
12	Calendar	2	1		3
13	Student Account Management	3	1		4
14	Lecturer Account Management	4	0		4
15	Topic Management	5	1		6
16	Document Management	9	0		9
17	Lecturer Profile	3	1		4
18	Topic Approval	6	0		6
19	Group Management	9	0		9
20	Group Form	7	2		9
21	Assign Mentor	9	0		9
22	Council Management	7	1		8
23	Council Form	5	2		7
24	Assign Council	9	0		9
25	Scoreboard	3	1		4
26	Grade Form	4	1		5
Total		138	14		152

Test coverage	100,00%
Test successfull coverage	90,79%

Test Cases Passed	Test Case Failed
138	14

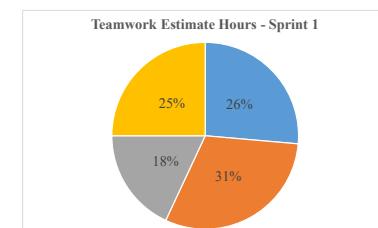


SPRINT 1 PLANNING

Team Availability		
Name	Available Hours	Estimation Total
Tien	76.00	
Phuoc	88.00	288.00
Huy	52.00	
Dat	72.00	

On Time
Lately
Early
Unfinished

Sprint	Component	Task name	Responsible Member	Total	01/03/2022	02/03/2022	03/03/2022	04/03/2022	05/03/2022	06/03/2022	07/03/2022	08/03/2022	09/03/2022	10/03/2022	11/03/2022	12/03/2022	13/03/2022	14/03/2022	15/03/2022	16/03/2022	17/03/2022	18/03/2022
Initial Sprint 1	Design	Sprint Planning Meeting	All member	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		Create Sprint Backlog for Sprint 1	Tien	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		Create Test Plan document for Sprint 1	Tien	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Code	Design UI for the Home	Dat	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		Design UI for the Login	Dat	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		Design UI for the Logout	Dat	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		Design UI for the Register	Dat	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		Design UI for the User Information	Huy	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		Design UI for the Manage Mentor	Huy	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		Design UI for the Manage Notification	Huy	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Testing	Design UI for User Information	Huy	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		Design Test Case	Phuoc	8	8	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		[Front-end] Home [User]	Huy	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		[Front-end] Login [User]	Dat	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	
		[Front-end] Logout [User]	Dat	4	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	
		[Front-end] Register [User]	Dat	4	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	
		[Front-end] User Information [User]	Dat	4	4	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0	
		[Front-end] Update Information [User]	Dat	4	4	4	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0	
		[Front-end] List Account [User/Admin]	Huy	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	
		[Front-end] Update Account [User/Admin]	Dat	4	4	4	4	4	4	4	4	4	0	0	0	0	0	0	0	0	0	
	Fix bug	[Front-end] Create Account [User/Admin]	Dat	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0	0	0	0	
		[Front-end] Get List Students [User/Moderator]	Huy	4	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	
		[Front-end] Create Students [User/Moderator]	Huy	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0	0	0	0	
		[Front-end] Update Students [User/Moderator]	Huy	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0	0	0	0	
		[Front-end] Introduce Capstone [User]	Huy	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0	
		[Front-end] Get List Mentor [User/Moderator]	Dat	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0	0	0	
		[Front-end] Update Mentor [User/Moderator]	Dat	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0	0	0	
		[Front-end] Get list Notification [User]	Dat	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0	0	0	
		[Front-end] Update Notification [User/Moderator]	Dat	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0	0	0	
		[Back-end] Sign in [User]	Tien	8	8	8	8	8	8	4	0	0	0	0	0	0	0	0	0	0	0	
	Re-testing	[Back-end] Register to execute capstone	Tien	8	8	8	8	8	8	8	8	8	4	0	0	0	0	0	0	0	0	
		[Back-end] Get All Account [User]	Phuoc	4	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	
		[Back-end] Insert Account [User]	Phuoc	4	4	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0	
		[Back-end] Delete Account [User]	Phuoc	4	4	4	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0	
		[Back-end] Update Account [User]	Phuoc	4	4	4	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0	
		[Back-end] Get All Student [User]	Tien	4	4	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0	
		[Back-end] Delete Student [User]	Tien	4	4	4	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0	
		[Back-end] Approve for Student [User]	Tien	4	4	4	4	4	4	4	4	4	0	0	0	0	0	0	0	0	0	
		[Back-end] Update Student [User]	Tien	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0	0	0	
		[Back-end] Get All Mentor [User]	Phuoc	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0	0	0	
	Close	[Back-end] Insert Mentor [User]	Phuoc	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0	0	0	
		[Back-end] Delete Mentor [User]	Phuoc	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0	0	0	
		[Back-end] Update Mentor [User]	Phuoc	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0	0	0	
		[Back-end] Export File Mentor [User]	Tien	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0	0	0	
Testing	Fix bug	[Back-end] Get All Notification [User]	Phuoc	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0	0	0	
		[Back-end] Create Notification [User]	Phuoc	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0	0	0	
		[Back-end] Delete Notification [User]	Phuoc	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0	0	0	
		[Back-end] Update Notification [User]	Phuoc	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0	0	0	
		Test All Function	Tien, Phuoc	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	8	8	0	0
Re-testing	Fix bug for Sprint 1	Tien, Phuoc	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	0	
	Re-Testing for Sprint 1	Tien, Phuoc	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	24	8	8	0	
Close	Spring Review meeting	All member	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	0	
	Retrospective	All member	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	0	



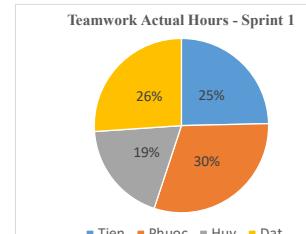
SPRINT 1 PLANNING

Team Availability		
Name	Available Hours	Estimation Total
Tien	68,00	
Phuoc	84,00	276,00
Huy	52,00	
Dat	72,00	

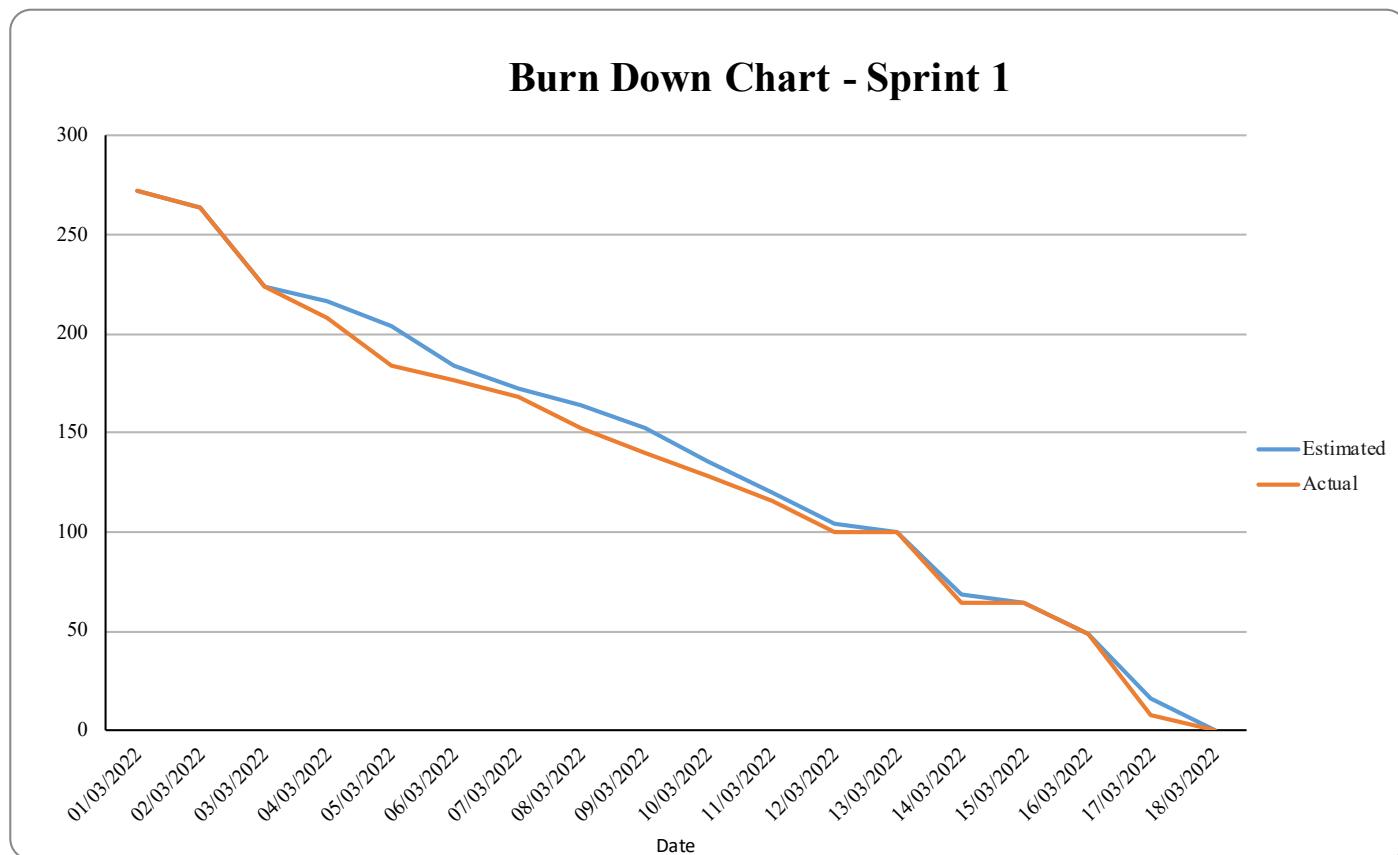


Sprint	Component	Task name	Responsible Member	Total	Actual	01/03/2022	02/03/2022	03/03/2022	04/03/2022	05/03/2022	06/03/2022	07/03/2022	08/03/2022	09/03/2022	10/03/2022	11/03/2022	12/03/2022	13/03/2022	14/03/2022	15/03/2022	16/03/2022	17/03/2022	18/03/2022
Initial Sprint 1	Design	Sprint Planning Meeting	All member	16	16	0																	
		Create Sprint Backlog for Sprint 1	Tien	4	4	4	0																
		Create Test Plan document for Sprint 1	Tien	4	4	4	4	0															
		Design UI for the Home	Dat	4	4	4	4	0															
		Design UI for the Login	Dat	4	4	4	4	0															
	Design	Design UI for the Logout	Dat	4	4	4	4	0															
		Design UI for the Register	Dat	4	4	4	4	0															
		Design UI for the User Information	Huy	4	4	4	4	0															
		Design UI for the Manage Mentor	Huy	4	4	4	4	0															
		Design UI for the Manage Notification	Huy	4	4	4	4	0															
1	Code	Design UI for User Information	Huy	4	4	4	4	0															
		Design Test Case	Phuoc	8	8	8	4	0															
		[Front-end] Home [User]	Huy	4	4	4	4	0															
		[Front-end] Login [User]	Dat	4	4	4	4	0															
		[Front-end] Logout [User]	Dat	4	0	4	4	4	4	0													
		[Front-end] Register [User]	Dat	4	0	4	4	4	4	0													
		[Front-end] User Information [User]	Dat	4	4	4	4	4	4	4	0												
		[Front-end] Update Information [User]	Dat	4	0	4	4	4	4	4	4	0											
		[Front-end] List	Huy	4	4	4	4	4	4	0													
		[Front-end] Update	Dat	4	4	4	4	4	4	4	4	4	4	4	4	0							
Testing	Testing	[Front-end] Create Account[UserAdmin]	Dat	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0					
		[Front-end] Get List Students[UserModerator]]	Huy	4	4	4	4	4	4	4	0												
		[Front-end] Create Students[UserModerator]]	Huy	4	4	4	4	4	4	4	0												
		[Front-end] Update Students[UserModerator]]	Huy	4	4	4	4	4	4	4	0												
		[Front-end] Introduce Capstone[User]	Huy	4	4	4	4	4	4	4	0												
		[Front-end] Get List Mentor[UserModerator]]	Dat	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0				
		[Front-end] Update Mentor[UserModerator]]	Dat	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0				
		[Front-end] get list Notification[User]	Dat	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0			
		[Front-end] update Notification[UserModerator]]	Dat	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0			
		[Back-end] Sign in [User]	Tien	8	4	8	8	4	0														
Fix bug	Fix bug	[Back-end] Register to execute	Tien	8	8	8	8	8	8	4	0												
		[Back-end] get All Account[User]	Phuoc	4	4	4	4	4	4	0													
		[Back-end] insert Account[User]	Phuoc	4	4	4	4	4	4	4	0												
		[Back-end] delete Account[User]	Phuoc	4	4	4	4	4	4	4	0												
		[Back-end] update Account[User]	Phuoc	4	4	4	4	4	4	4	0												
		[Back-end] get All Student[User]	Tien	4	4	4	4	4	4	4	0												
		[Back-end] delete Student[User]	Tien	4	4	4	4	4	4	4	0												
		[Back-end] approve for Student[User]	Tien	4	4	4	4	4	4	4	0												
		[Back-end] update Student[User]	Tien	4	4	4	4	4	4	4	4	0											
		[Back-end] get All Mentor[User]	Phuoc	4	4	4	4	4	4	4	0												
Re-testing	Re-testing	[Back-end] insert Mentor[User]	Phuoc	4	4	4	4	4	4	4	0												
		[Back-end] delete Mentor[User]	Phuoc	4	4	4	4	4	4	4	0												
		[Back-end] update Mentor[User]	Phuoc	4	4	4	4	4	4	4	0												
		[Back-end] export file Mentor[User]	Tien	4	4	4	4	4	4	4	0												
		[Back-end] get All Notification[User]	Phuoc	4	4	4	4	4	4	4	0												
		[Back-end] Create Notification[User]	Phuoc	4	4	4	4	4	4	4	0												
		[Back-end] delete Notification[User]	Phuoc	4	4	4	4	4	4	4	0												
		[Back-end] update Notification[User]	Phuoc	4	4	4	4	4	4	4	0												
		Test All Function	Tien, Phuoc	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	8	0			
		Fix bug for Sprint 1	Tien, Phuoc	16	8	16	16	16	16	16	16	16	16	16	16	16	16	16	16	8	0		
Close	Re-testing	Re-Testing for Sprint 1	Tien, Phuoc	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	0		
		Spring Review meeting	All member	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	8	0
	Retrospective	All member	All member	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	8	0

288 264 272 244 224 208 184 172 156 136 124 112 100 92 96 64 64 48 8 0



Estimated	Actual	Date
272	272	01/03/2022
264	264	02/03/2022
224	224	03/03/2022
216	208	04/03/2022
204	184	05/03/2022
184	176	06/03/2022
172	168	07/03/2022
164	152	08/03/2022
152	140	09/03/2022
136	128	10/03/2022
120	116	11/03/2022
104	100	12/03/2022
100	100	13/03/2022
68	64	14/03/2022
64	64	15/03/2022
48	48	16/03/2022
16	8	17/03/2022
0	0	18/03/2022

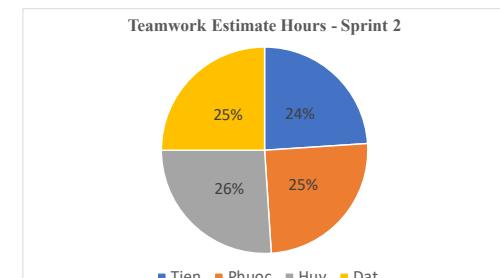


SPRINT 2 PLANNING

Team Availability		
Name	Available Hours	Estimation Total
Tien	92.00	
Phuoc	96.00	
Huy	100.00	384.00
Dat	96.00	



Sprint	Component	Task name	Responsible Member	Total	19/3/2022	20/3/2022	21/3/2022	22/3/2022	23/3/2022	24/3/2022	25/3/2022	26/3/2022	27/3/2022	28/3/2022	29/3/2022	30/3/2022	31/3/2022	1/4/2022	2/4/2022	3/4/2022	4/4/2022	5/4/2022	6/4/2022	7/4/2022	8/4/2022	9/4/2022	10/4/2022	11/4/2022	12/4/2022	13/4/2022	
Initial Sprint 2	Sprint Planning Meeting	All member	Tien	16	0																										
	Create Sprint Backlog for Sprint 2	Tien	4	4	0																										
	Create Test Plan document for Sprint 2	Tien	4	4	4	0																									
	Design UI for Manage Group	Huy	12	12	8	4	0																								
	Design UI for Manage Topic	Dat	12	12	8	4	0																								
	Design UI for Manage File Template	Dat	4	4	4	4	4	0																							
	Design Test Case	Phuoc	8	8	4	0																									
	[Front-end] List Group [User]	Huy	12	12	12	12	12	12	8	4	0																				
	[Front-end] detail Group [User]	Huy	12	12	12	12	12	12	12	12	8	4	0																		
	[Front-end] Create Group [Moderator]	Huy	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	8	4	0										
Code	[Front-end] update Group [Moderator]	Huy	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	4	0										
	[Front-end] assign mentor for Group [Moderator]	Huy	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8			
	[Front-end] Delete Group [Moderator]	Huy	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0			
	[Front-end] Submit Topic[User/Student]]	Dat	4	4	4	4	4	4	4	4	0																				
	[Front-end] Update Topic[User/Student]]	Dat	4	4	4	4	4	4	4	4	0																				
	[Front-end] Topic List[User]	Dat	4	4	4	4	4	4	4	4	0																				
	[Front-end] Detail Topic[User]	Dat	8	8	8	8	8	8	8	8	8	4	0																		
	[Front-end]Approve Topic[User/Moderator]]	Dat	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0											
	[Front-end]Submit Topic Template[User/Moderator]]	Dat	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	4	0												
	[Front-end] Topic template List[User]	Dat	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0										
	[Front-end]Upload file Topic Template[User]	Dat	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0										
	[Front-end] Group List [User]	Tien	8	8	8	8	8	8	8	4	0																				
	[Back-end] detail Group [User]	Tien	8	8	8	8	8	8	8	8	4	0																			
	[Back-end] Group List of mentor [Mentor]	Tien	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0										
	[Back-end] Create Group [Moderator]	Tien	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	4	0												
	[Back-end] update Group [Moderator]	Tien	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	4	0											
	[Back-end] assign mentor for Group [Moderator]	Tien	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0										
	[Back-end] Delete Group [Moderator]	Tien	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0										
	[Back-end] export file Group List [Moderator]	Tien	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0										
	[Back-end] Submit Topic of Student[Student]	Phuoc	4	4	4	4	4	4	4	0																					
	[Back-end] Submit Topic of mentor[Mentor]	Phuoc	4	4	4	4	4	4	4	0																					
	[Back-end] Upload file Topic template[Mentor]	Phuoc	8	8	8	8	8	8	8	8	4	0																			
	[Back-end] approve for Student[Moderator]	Phuoc	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0											
	[Back-end] Topic Student List [User]	Phuoc	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0											
	[Back-end] Topic template List [User]	Phuoc	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0											
	[Back-end] update topic [Student]	Phuoc	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0											
	[Back-end] update topic [Mentor]	Phuoc	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0											
	[Back-end] delete topic[Student]	Phuoc	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0											
	[Back-end] delete topic[Mentor]	Phuoc	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0											
	[Back-end] export file Topic Student List[Moderator]	Phuoc	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	4	0											
	[Back-end]Upload file document template[Moderator]	Dat	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	4	0										
Testing	Test All Function	All member	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32		
Fix bug	Fix bug for Sprint 2	All member	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	
Re-testing	Re-Testing for Sprint 2	Tien, Phuoc	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Close	Spring Review meeting	All member	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
	Retrospective	All member	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16



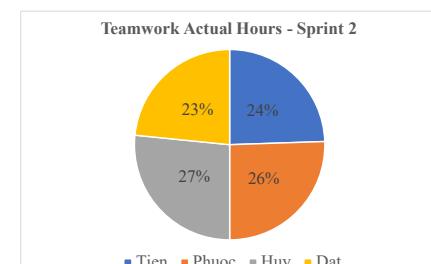
SPRINT 2 PLANNING

Team Availability		
Name	Available Hours	Estimation Total
Tien	92,00	
Phuoc	96,00	
Huy	100,00	
Dat	88,00	

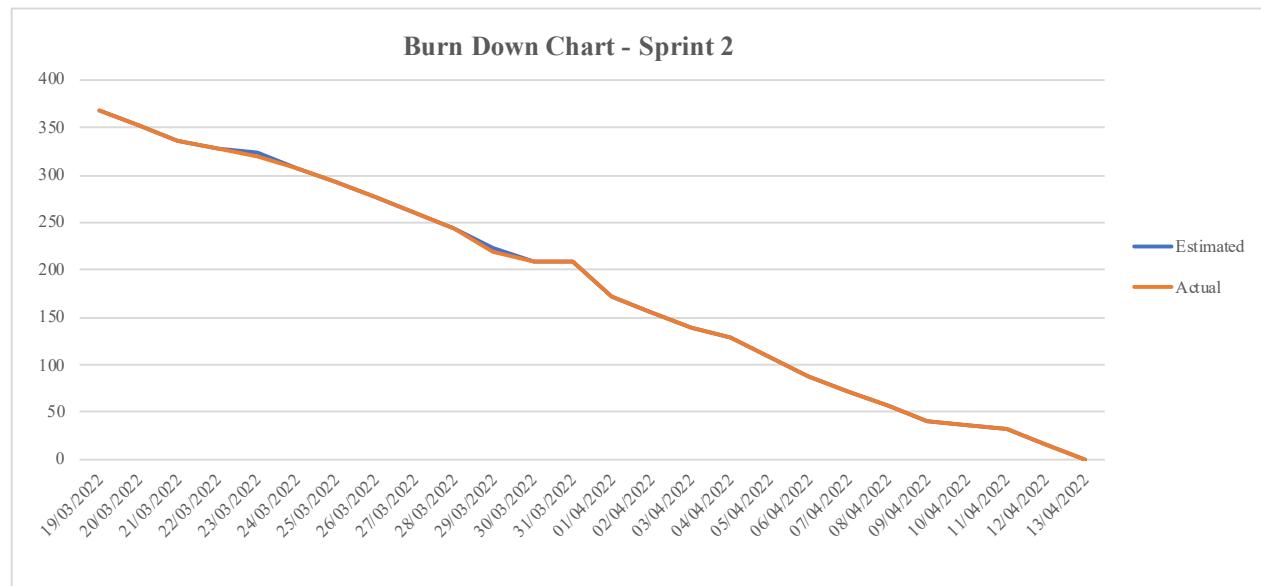


Sprint	Component	Task name	Responsible Member	Total	Actual	19/3/2022	20/3/2022	21/3/2022	22/3/2022	23/3/2022	24/3/2022	25/3/2022	26/3/2022	27/3/2022	28/3/2022	29/3/2022	30/3/2022	31/3/2022	1/4/2022	2/4/2022	3/4/2022	4/4/2022	5/4/2022	6/4/2022	7/4/2022	8/4/2022	9/4/2022	10/4/2022	11/4/2022	12/4/2022	13/4/2022		
Initial Sprint 2	Design	Sprint Planning Meeting	All member	16	16	0																											
		Create Sprint Backlog for Sprint 2	Tien	4	4	4	0																										
		Create Test Plan document for Sprint 2	Tien	4	4	4	4	0																									
	Code	Design UI for Manage Group	Huy	12	12	12	8	4	0																								
		Design UI for Manage Topic	Dat	12	12	12	8	4	0																								
		Design UI for Manage File Template	Dat	4	0	4	4	4	4	0																							
		Design Test Case	Phuoc	8	8	8	4	0																									
		[Front-end] List Group [User]	Huy	12	12	12	12	12	12	12	8	4	0																				
		[Front-end] detail Group [User]	Huy	12	12	12	12	12	12	12	12	12	8	4	0																		
		[Front-end] Create Group [Moderator]	Huy	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	8	4	0												
2	Testing	[Front-end] update Group [Moderator]	Huy	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	4	0											
		[Front-end] assign mentor for Group [Moderator]	Huy	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	4	0										
		[Front-end] Delete Group [Moderator]	Huy	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0									
		[Front-end] Detail Topic[User(Student)]	Dat	4	4	4	4	4	4	4	4	4	0																				
		[Front-end] Topic List[User]	Dat	4	4	4	4	4	4	4	4	4	4	0																			
		[Front-end] Detail Topic[User]	Dat	8	8	8	8	8	8	8	8	8	4	0																			
		[Front-end]Approve Topic[User(Moderator)]	Dat	4	0	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0									
		[Front-end]Submit Topic Template[User(Moderator)]	Dat	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	4	0													
		[Front-end]Topic template List[User]	Dat	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0									
		[Front-end]Upload file Topic Template[User]	Dat	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0								
		[Back-end] Group List of mentor [Mentor]	Tien	8	8	8	8	8	8	8	8	4	0																				
		[Back-end] detail Group [User]	Tien	8	8	8	8	8	8	8	8	8	4	0																			
		[Back-end] Group List of mentor [Mentor]	Tien	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0									
		[Back-end] Create Group [Moderator]	Tien	8	8	8	8	8	8	8	8	8	8	8	8	8	8	4	0														
		[Back-end] update Group [Moderator]	Tien	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	4	0												
		[Back-end] assign mentor for Group [Moderator]	Tien	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0									
		[Back-end] Delete Group [Moderator]	Tien	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0								
		[Back-end] export file Group List [Moderator]	Tien	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0								
		[Back-end] Submit Topic of Student[Student]	Phuoc	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0								
		[Back-end] Submit Topic of mentor[Mentor]	Phuoc	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0								
		[Back-end] Upload file Topic template[Mentor]	Phuoc	8	8	8	8	8	8	8	8	8	4	0																			
		[Back-end] approve for Student[Moderator]	Phuoc	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0								
		[Back-end] Topic Student List [User]	Phuoc	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0								
		[Back-end] Topic template List [User]	Phuoc	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0								
		[Back-end] update topic [Student]	Phuoc	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0								
		[Back-end] update topic [Mentor]	Phuoc	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0								
		[Back-end] delete topic[Student]	Phuoc	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0								
		[Back-end] delete topic[Mentor]	Phuoc	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	0								
		[Back-end] export file Topic Student List[Moderator]	Phuoc	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	4	0										
		[Back-end] Upload file document template[Moderator]	Dat	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	4	0									
		Test All Function	All member	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	16	0								
		Fix bug for Sprint 2	All member	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	32	16	0						
		Re-testing for Sprint 2	Tien, Phuoc	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	24	8	8	8	8	8	8	8	4	0					
		Spring Review meeting	All member	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	0	
		Retrospective	All member	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	0	

384 376 368 352 336 328 320 308 292 276 260 244 220 208 208 172 156 140 128 108 88 72 56 40 36 32 16 0



Estimated	Actual	Date
368	368	19/03/2022
352	352	20/03/2022
336	336	21/03/2022
328	328	22/03/2022
324	320	23/03/2022
308	308	24/03/2022
292	292	25/03/2022
276	276	26/03/2022
260	260	27/03/2022
244	244	28/03/2022
224	220	29/03/2022
208	208	30/03/2022
208	208	31/03/2022
172	172	01/04/2022
156	156	02/04/2022
140	140	03/04/2022
128	128	04/04/2022
108	108	05/04/2022
88	88	06/04/2022
72	72	07/04/2022
56	56	08/04/2022
40	40	09/04/2022
36	36	10/04/2022
32	32	11/04/2022
16	16	12/04/2022
0	0	13/04/2022



SPRINT 3 PLANNING

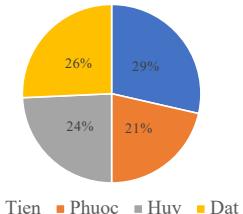
Team Availability		
Name	Available Hours	Estimation Total
Tien	80.00	
Phuoc	60.00	
Huy	68.00	280.00
Dat	72.00	



Sprint	Component	Task name	Responsible Member	Total	14/4/2022	15/4/2022	16/4/2022	17/4/2022	18/4/2022	19/4/2022	20/4/2022	21/4/2022	22/4/2022	23/4/2022	24/4/2022	25/4/2022	26/4/2022	27/4/2022	28/4/2022	29/4/2022	30/4/2022	1/5/2022
3	Initial Sprint 3	Sprint Planning Meeting	All member	16	0																	
		Create Sprint Backlog for Sprint 3	Tien	4	4	0																
		Create Test Plan document for Sprint 3	Phuoc	4	4	4	0															
	Design	Design UI for Create stage and task	Dat	2	2	0																
		Design UI for View stage of project	Dat	2	2	0																
		Design UI for Report contribution	Dat	2	2	2	0															
		Design UI for Group contribution	Dat	2	2	2	0															
		Design UI for Manage Defense	Huy	4	2	2	0															
		Design Test Case	Tien	4	4	4	0															
	Code	[Front-end] Stage list and task [User]	Dat	16	16	16	16	12	8	4	0											
		[Front-end] View stage of project [User]	Dat	12	12	12	12	12	12	8	4	0										
		[Front-end] Report contribution	Dat	12	12	12	12	12	12	12	12	12	12	12	12	12	8	4	0			
		[Front-end] Create defense [Moderator]	Huy	8	8	8	8	4	0													
		[Front-end] Assign group for defense [Moderator]	Huy	8	8	8	8	8	8	4	0											
		[Front-end] Update defense [Moderator]	Huy	8	8	8	8	8	8	8	8	4	0									
		[Front-end] Defense list [Moderator]	Huy	8	8	8	8	8	8	8	8	8	8	4	0							
		[Front-end] Defense detail [Moderator]	Huy	8	8	8	8	8	8	8	8	8	8	8	8	8	8	4	0			
		[Back-end] List stage and task [User]	Phuoc	8	8	8	8	4	0													
		[Back-end] View stage of project [User]	Phuoc	8	8	8	8	8	8	4	0											
		[Back-end] Report contribution [Student]	Phuoc	8	8	8	8	8	8	8	8	4	0									
		[Back-end] Group contribution [Student]	Phuoc	8	8	8	8	8	8	8	8	8	8	8	8	4	0					
	Testing	[Back-end] Create Defense [Moderator]	Tien	8	8	8	8	4	0													
		[Back-end] assign group for Defense [Moderator]	Tien	4	4	4	4	4	4	4	0											
		[Back-end] Update Defense [Moderator]	Tien	4	4	4	4	4	4	4	4	0										
		[Back-end] List Defense [Moderator]	Tien	8	8	8	8	8	8	8	8	4	0									
		[Back-end] Detail Defense [Moderator]	Tien	8	8	8	8	8	8	8	8	8	8	8	8	4	0					
		[Back-end] Export defense list file [Moderator]	Tien	8	8	8	8	8	8	8	8	8	8	8	8	8	8	4	0			
		[Back-end] Delete Defense [Moderator]	Tien	8	8	8	8	8	8	8	8	8	8	8	8	8	8	4	0			
		Test All Function	All member	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	0	
		Fix bug for Sprint 3	All member	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	0		
		Re-testing	All member	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	0	
		Close	All member	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	0	

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Teamwork Estimate Hours - Sprint 3

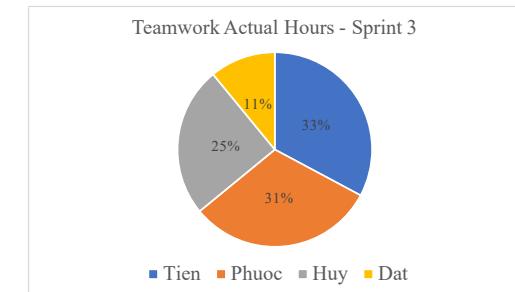


SPRINT 3 PLANNING

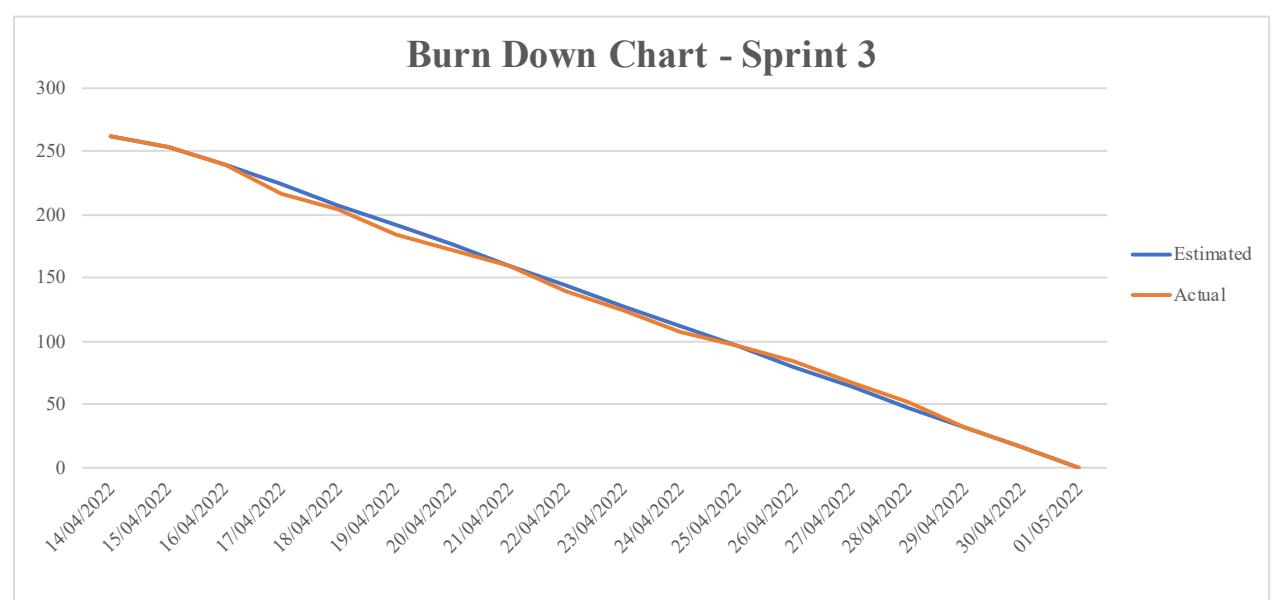
Team Availability		
Name	Available Hours	Estimation Total
Tien	84,00	
Phuoc	80,00	
Huy	64,00	
Dat	28,00	256,00

█ On Time
█ Lately
█ Early
█ Unfinished

Sprint	Component	Task name	Responsible Member	Total	Actual	14/04/2022	15/04/2022	16/04/2022	17/04/2022	18/04/2022	19/04/2022	20/04/2022	21/04/2022	22/04/2022	23/04/2022	24/04/2022	25/04/2022	26/04/2022	27/04/2022	28/04/2022	29/04/2022	30/04/2022	01/05/2022
Initial Sprint 3	Design	Sprint Planning Meeting	All member	16	16	0																	
		Create Sprint Backlog for Sprint 3	Tien	4	4	4	0																
		Create Test Plan document for Sprint 3	Phuoc	4	4	4	4	0															
	Code	Design UI for Create stage and task	Dat	2	2	2	0																
		Design UI for View stage of project	Dat	2	2	2	0																
		Design UI for Report contribution	Dat	2	2	2	2	0															
		Design UI for Group contribution	Dat	2	2	2	2	0															
		Design UI for Manage Defense	Huy	4	4	2	2	0															
		Design Test Case	Tien	4	4	4	4	0															
		[Front-end] Stage list and task [User]	Dat	16	0	16	16	16	12	8	4	0											
3	Code	[Front-end] View stage of project [User]	Dat	12	-16	12	12	12	12	12	12	8	4	0									
		[Front-end] Report contribution	Dat	12	12	12	12	12	12	12	12	12	8	4	0								
		[Front-end] Create defense [Moderator]	Huy	8	8	8	8	8	4	0													
		[Front-end] Assign group for defense [Moderator]	Huy	8	4	8	8	8	8	8	4	0											
		[Front-end] Update defense [Moderator]	Huy	8	8	8	8	8	8	8	8	4	0										
		[Front-end] Defense list [Moderator]	Huy	8	8	8	8	8	8	8	8	8	4	0									
		[Front-end] Defense detail [Moderator]	Huy	8	8	8	8	8	8	8	8	8	8	8	4	0							
		[Back-end] Stage list and task [User]	Phuoc	8	24	8	8	8	4	0													
		[Back-end] View stage of project [User]	Phuoc	8	12	8	8	8	8	8	4	0											
		[Back-end] Report contribution [Student]	Phuoc	8	8	8	8	8	8	8	8	4	0										
Testing	Fix bug	[Back-end] Group contribution [Student]	Phuoc	8	8	8	8	8	8	8	8	8	4	0									
		[Back-end] Create defense [Moderator]	Tien	8	8	8	8	8	4	0													
		[Back-end] Assign group for defense [Moderator]	Tien	4	0	4	4	4	4	4	0												
		[Back-end] Update defense [Moderator]	Tien	4	4	4	4	4	4	4	4	0											
		[Back-end] Defense list [Moderator]	Tien	8	8	8	8	8	8	8	8	4	0										
		[Back-end] Defense detail [Moderator]	Tien	8	4	8	8	8	8	8	8	8	4	0									
		[Back-end] Export defense list file [Moderator]	Tien	8	20	8	8	8	8	8	8	8	8	4	0								
		[Back-end] Delete defense [Moderator]	Tien	8	8	8	8	8	8	8	8	8	8	4	0								
		Test All Funtion	All member	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	0				
		Fix bug for Sprint 3	All member	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	0				
Re-testing	Close	Re-Testing for Sprint 3	All member	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	0				
		Spring Review meeting	All member	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	0				
		Retrospective	All member	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	0				



Estimated	Actual	Date
262	262	14/04/2022
254	254	15/04/2022
240	240	16/04/2022
224	216	17/04/2022
208	204	18/04/2022
192	184	19/04/2022
176	172	20/04/2022
160	160	21/04/2022
144	140	22/04/2022
128	124	23/04/2022
112	108	24/04/2022
96	96	25/04/2022
80	84	26/04/2022
64	68	27/04/2022
48	52	28/04/2022
32	32	29/04/2022
16	16	30/04/2022
0	0	01/05/2022



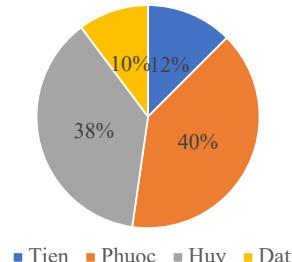
SPRINT 4 PLANNING

Team Availability		
Name	Available Hours	Estimation Total
Tien	11,00	
Phuoc	35,00	
Huy	33,00	
Dat	9,00	88,00

█ On Time
█ Lately
█ Early
█ Unfinished

Sprint	Component	Task name	Responsible Member	Total	88	76	72	68	60	52	44	32	28	20	8	0
4	Initial Sprint 4	Sprint Planning Meeting	All member	4	0											
		Create Sprint Backlog for Sprint 4	Tien	4	0											
		Create Test Plan document for Sprint 4	Phuoc	4	0											
	Design	Design UI for Submit Grade of Group	Huy	4	4	0										
		Design Test Case	Dat	4	4	4	0									
	Development	[Front-end] Submit Grade of Group	Huy	16	16	16	16	12	8	4	0					
		[Front-end] Report Grade of Group	Huy	8	8	8	8	8	8	8	8	0				
		[Back-end] Submit Grade of Group	Phuoc	16	16	16	16	12	8	4	0					
		[Back-end] Report Grade of Group	Phuoc	8	8	8	8	8	8	8	4	4	0			
	Testing	Test All Function	All member	4	4	4	4	4	4	4	4	4	4	4	4	0
	Fix bug	Fix bug for Sprint 4	All member	4	4	4	4	4	4	4	4	4	4	4	0	
	Re-testing	Re-Testing for Sprint 4	Tien, Phuoc	4	4	4	4	4	4	4	4	4	4	4	4	0
	Close	Spring Review meeting	All member	4	4	4	4	4	4	4	4	4	4	4	4	0
		Retrospective	All member	4	4	4	4	4	4	4	4	4	4	4	4	0

Teamwork Estimate Hours - Sprint 4



SPRINT 4 PLANNING

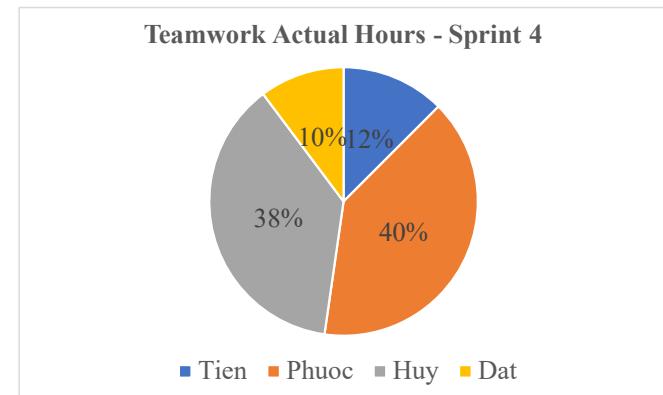
Team Availability		
Name	Available Hours	Estimation Total
Tien	11,00	
Phuoc	35,00	
Huy	33,00	
Dat	9,00	88,00

On Time
Lately
Early
Unfinish

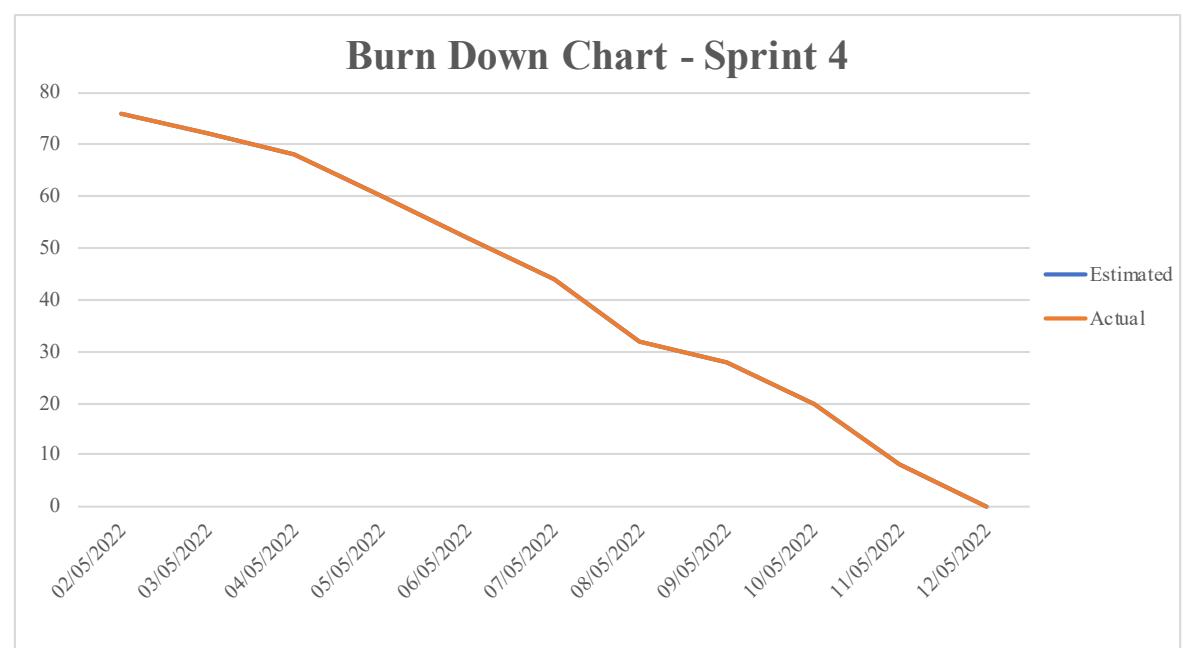
Sprint	Component	Task name	Responsible Member	Total	Actual	# # # # #	# # # # #	# # # # #	# # # # #	# # # # #	# # # # #	# # # # #	# # # # #	# # # # #	# # # # #	# # # # #	# # # # #	# # # # #
4	Initial Sprint 4	Sprint Planning Meeting	All member	4	4	0												
		Create Sprint Backlog for Sprint 4	Tien	4	4	0												
		Create Test Plan document for Sprint 4	Phuoc	4	4	0												
	Design	Design UI for Submit Grade of Group	Huy	4	4	4	0											
		Design Test Case	Dat	4	4	4	4	0										
	Code	[Front-end] Submit Grade of Group	Huy	16	16	16	16	16	12	8	4	0						
		[Front-end] Report Grade of Group	Huy	8	8	8	8	8	8	8	8	8	4	0				
		[Back-end] Submit Grade of Group	Phuoc	16	16	16	16	16	12	8	4	0						
		[Back-end] Report Grade of Group	Phuoc	8	8	8	8	8	8	8	8	4	4	0				
	Testing	Test All Function	All member	4	4	4	4	4	4	4	4	4	4	4	4	4	0	
	Fix bug	Fix bug for Sprint 4	All member	4	4	4	4	4	4	4	4	4	4	4	4	4	0	
	Re-testing	Re-Testing for Sprint 4	Tien, Phuoc	4	4	4	4	4	4	4	4	4	4	4	4	4	0	
	Close	Spring Review meeting	All member	4	4	4	4	4	4	4	4	4	4	4	4	4	0	
		Retrospective	All member	4	4	4	4	4	4	4	4	4	4	4	4	4	0	

88 88 76 72 68 60 52 44 32 28 20 8 0

Teamwork Actual Hours - Sprint 4



Estimated	Actual	Date
76	76	02/05/2022
72	72	03/05/2022
68	68	04/05/2022
60	60	05/05/2022
52	52	06/05/2022
44	44	07/05/2022
32	32	08/05/2022
28	28	09/05/2022
20	20	10/05/2022
8	8	11/05/2022
0	0	12/05/2022





Capstone Project 2

CMU-SE 451

Code Standard

Version 1.0

Date: 10 May 2022

SENIOR PROJECT MANAGEMENT SYSTEM FOR INTERNATIONAL SCHOOL

Submitted by

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Dat, Nguyen Thanh

Approved by

Chau, Truong Ngoc

Proposal Review Panel Representative:

Name Signature Date

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Name Signature Date

PROJECT INFORMATION

Project acronym	Senior Project Management System for International School		
Project Title	SPMS		
Start Date	18 Feb 2022	18 Feb 2022	18 Feb 2022
Lead Institution	International School, Duy Tan University		
Project Mentor	Chau, Truong Ngoc		
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Partner Organization			
Project Web URL			
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REVISION HISTORY

Version	Date	Comments	Author	Approval
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SIGNATURE

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1. Introduction

This document aims to set out a standard to programming languages to Senior Project Management System for International School project that includes, HTML/CSS, ReactJS Framework and JavaScript should conform. It is expected that were appropriate changes be made to these standards to adapt them for the language in question.

2. HTML/CSS Coding Standard

2.1. HTML

2.1.1. HTML Style Rules

2.1.1.1. Document Type

- Use HTML5.
- HTML5 (HTML syntax) is preferred for all HTML documents: <!DOCTYPE html>.
- (It's recommended to use HTML, as text/html. Do not use XHTML. XHTML, as application/xhtml+xml, lacks both browser and infrastructure support and offers less room for optimization than HTML.)
- Although fine with HTML, do not close void elements, i.e. write
, not
.

2.1.1.2. HTML Validity

- Use valid HTML where possible.
- Use valid HTML code unless that is not possible due to otherwise unattainable performance goals regarding file size.
- Use tools such as the W3C HTML validator to test.
- Using valid HTML is a measurable baseline quality attribute that contributes to learning about technical requirements and constraints, and that ensures proper HTML usage.

```
<!-- Not recommended -->
<title>Test</title>
<article>This is only a test.

<!-- Recommended -->
<!DOCTYPE html>
<meta charset="utf-8">
<title>Test</title>
<article>This is only a test.</article>
```

2.1.1.3. Semantics

- Use HTML according to its purpose.
- Use elements (sometimes incorrectly called “tags”) for what they have been created for. For example, use heading elements for headings, p elements for paragraphs, a elements for anchors, etc.
- Using HTML according to its purpose is important for accessibility, reuse, and code efficiency reasons.

```
<!-- Not recommended -->
<div onclick="goToRecommendations();">All recommendations</div>

<!-- Recommended -->
<a href="recommendations/">All recommendations</a>
```

2.1.1.4. Multimedia Fallback

- Provide alternative contents for multimedia.
- For multimedia, such as images, videos, animated objects via canvas, make sure to offer alternative access. For images that means use of meaningful alternative text (alt) and for video and audio transcripts and captions, if available.
- Providing alternative contents is important for accessibility reasons: A blind user has few cues to tell what an image is about without @alt, and other users may have no way of understanding what video or audio contents are about either.
- (For images whose alt attributes would introduce redundancy, and for images whose purpose is purely decorative which you cannot immediately use CSS for, use no alternative text, as in alt="" .)

```
<!-- Not recommended -->


<!-- Recommended -->

```

2.1.1.5. Separation of Concerns

- Separate structure from presentation from behavior.
- Strictly keep structure (markup), presentation (styling), and behavior (scripting) apart, and try to keep the interaction between the three to an absolute minimum.
- That is, make sure documents and templates contain only HTML and HTML that is solely serving structural purposes. Move everything presentational into style sheets, and everything behavioral into scripts.

- In addition, keep the contact area as small as possible by linking as few style sheets and scripts as possible from documents and templates.
- Separating structure from presentation from behavior is important for maintenance reasons. It is always more expensive to change HTML documents and templates than it is to update style sheets and scripts.

```
<!-- Not recommended -->
<!DOCTYPE html>
<title>HTML sucks</title>
<link rel="stylesheet" href="base.css" media="screen">
<link rel="stylesheet" href="grid.css" media="screen">
<link rel="stylesheet" href="print.css" media="print">
<h1 style="font-size: 1em;">HTML sucks</h1>
<p>I've read about this on a few sites but now I'm sure:
    <u>HTML is stupid!!1</u>
<center>I can't believe there's no way to control the styling of
    my website without doing everything all over again!</center>

<!-- Recommended -->
<!DOCTYPE html>
<title>My first CSS-only redesign</title>
<link rel="stylesheet" href="default.css">
<h1>My first CSS-only redesign</h1>
<p>I've read about this on a few sites but today I'm actually
    doing it: separating concerns and avoiding anything in the HTML of
    my website that is presentational.
<p>It's awesome!
```

2.1.1.6. Entity References

- Do not use entity references.
- There is no need to use entity references like —, ”, or ☺, assuming the same encoding (UTF-8) is used for files and editors as well as among teams.
- The only exceptions apply to characters with special meaning in HTML (like < and &) as well as control or “invisible” characters (like no-break spaces).

```
<!-- Not recommended -->
The currency symbol for the Euro is &ldquo;&eur;&rdquo;;
<!-- Recommended -->
The currency symbol for the Euro is “€”.
```

2.1.1.7. Optional Tags

- Omit optional tags (optional).
- For file size optimization and scannability purposes, consider omitting optional tags. The HTML5 specification defines what tags can be omitted.
- (This approach may require a grace period to be established as a wider guideline as it's significantly different from what web developers are typically taught. For consistency and simplicity reasons it's best served omitting all optional tags, not just a selection.)

```
<!-- Not recommended -->
<!DOCTYPE html>
<html>
  <head>
    <title>Spending money, spending bytes</title>
  </head>
  <body>
    <p>Sic.</p>
  </body>
</html>
<!-- Recommended -->
<!DOCTYPE html>
<title>Saving money, saving bytes</title>
<p>Qed.
```

2.1.1.8. Type Attributes

- Omit type attributes for style sheets and scripts.
- Do not use type attributes for style sheets (unless not using CSS) and scripts (unless not using JavaScript).
- Specifying type attributes in these contexts is not necessary as HTML5 implies text/css and text/javascript as defaults. This can be safely done even for older browsers.

```
<!-- Not recommended -->
<link rel="stylesheet" href="https://www.google.com/css/maia.css"
      type="text/css">
<!-- Recommended -->
<link rel="stylesheet" href="https://www.google.com/css/maia.css">

<!-- Not recommended -->
<script src="https://www.google.com/js/gweb/analytics/autotrack.js"
       type="text/javascript"></script>
<!-- Recommended -->
<script src="https://www.google.com/js/gweb/analytics/autotrack.js"></script>
```

2.1.2. HTML Formatting Rules

2.1.2.1. General Formatting

- Use a new line for every block, list, or table element, and indent every such child element.
- Independent of the styling of an element (as CSS allows elements to assume a different role per display property), put every block, list, or table element on a new line.
- Also, indent them if they are child elements of a block, list, or table element.
- (If you run into issues around whitespace between list items it's acceptable to put all li elements in one line. A linter is encouraged to throw a warning instead of an error.)

```
<blockquote>
    <p><em>Space</em>, the final frontier.</p>
</blockquote>
<ul>
    <li>Moe
    <li>Larry
    <li>Curly
</ul>
<table>
    <thead>
        <tr>
            <th scope="col">Income
            <th scope="col">Taxes
    <tbody>
        <tr>
            <td>$ 5.00
            <td>$ 4.50
</table>
```

2.1.2.2. HTML Line-Wrapping

- Break long lines (optional).
- While there is no column limit recommendation for HTML, you may consider wrapping long lines if it significantly improves readability.
- When line-wrapping, each continuation line should be indented at least 4 additional spaces from the original line.

```
<md-progress-circular md-mode="indeterminate" class="md-accent"
    ng-show="ctrl.loading" md-diameter="35">
</md-progress-circular>
<md-progress-circular
    md-mode="indeterminate"
    class="md-accent"
    ng-show="ctrl.loading"
    md-diameter="35">
```

```
</md-progress-circular>
```

2.1.2.3. HTML Quotation Marks

- When quoting attributes values, use double quotation marks.
- Use double ("") rather than single quotation marks (") around attribute values.

```
<!-- Not recommended -->
<a class='maia-button maia-button-secondary'>Sign in</a>
<!-- Recommended -->
<a class="maia-button maia-button-secondary">Sign in</a>
```

2.2. CSS

2.2.1. CSS Style Rules

2.2.1.1. CSS Validity

- Use valid CSS where possible.
- Unless dealing with CSS validator bugs or requiring proprietary syntax, use valid CSS code.
- Use tools such as the W3C CSS validator to test.
- Using valid CSS is a measurable baseline quality attribute that allows to spot CSS code that may not have any effect and can be removed, and that ensures proper CSS usage.

2.2.1.2. ID and Class Naming

- Use meaningful or generic ID and class names.
- Instead of presentational or cryptic names, always use ID and class names that reflect the purpose of the element in question, or that are otherwise generic.
- Names that are specific and reflect the purpose of the element should be preferred as these are most understandable and the least likely to change.
- Generic names are simply a fallback for elements that have no particular or no meaning different from their siblings. They are typically needed as “helpers.”
- Using functional or generic names reduces the probability of unnecessary document or template changes.

```
/* Not recommended: meaningless */
#yee-1901 {}

/* Not recommended: presentational */
.button-green {}
.clear {}
/* Recommended: specific */
```

```
#gallery {}
#login {}
.video {}

/* Recommended: generic */
.aux {}
.alt {}
```

2.2.1.3. ID and Class Name Style

- Use ID and class names that are as short as possible but as long as necessary.
- Try to convey what an ID or class is about while being as brief as possible.
- Using ID and class names this way contributes to acceptable levels of understandability and code efficiency.

```
/* Not recommended */
#navigation {}
.atr {}

/* Recommended */
#nav {}
.author {}
```

2.2.1.4. Type Selector

- Avoid qualifying ID and class names with type selectors.
- Unless necessary (for example with helper classes), do not use element names in conjunction with IDs or classes.
- Avoiding unnecessary ancestor selectors is useful for performance reasons.

```
/* Not recommended */
ul#example {}
div.error {}

/* Recommended */
#example {}
.error {}
```

2.2.1.5. Shorthand Properties

- Use shorthand properties where possible.
- CSS offers a variety of shorthand properties (like font) that should be used whenever possible, even in cases where only one value is explicitly set.
- Using shorthand properties is useful for code efficiency and understandability.

```
/* Not recommended */
border-top-style: none;
font-family: palatino, georgia, serif;
font-size: 100%;
line-height: 1.6;
padding-bottom: 2em;
```

```
padding-left: 1em;
padding-right: 1em;
padding-top: 0;
/* Recommended */
border-top: 0;
font: 100%/1.6 palatino, georgia, serif;
padding: 0 1em 2em;
```

2.2.1.6. 0 and Units

- Omit unit specification after “0” values, unless required.
- Do not use units after 0 values unless they are required.

```
flex: 0px; /* This flex-basis component requires a unit. */
flex: 1 1 0px; /* Not ambiguous without the unit, but needed in IE11. */
margin: 0;
padding: 0;
```

2.2.1.7. Leading 0s

- Omit leading “0”s in values.
- Do not put 0s in front of values or lengths between -1 and 1.

```
font-size: .8em;
```

2.2.1.8. Hexadecimal Notation

- Use 3 character hexadecimal notation where possible.
- For color values that permit it, 3 character hexadecimal notation is shorter and more succinct.

```
/* Not recommended */
color: #eebbcc;
/* Recommended */
color: #ebc;
```

2.2.1.9. Prefixes

- Prefix selectors with an application-specific prefix (optional).
- In large projects as well as for code that gets embedded in other projects or on external sites use prefixes (as namespaces) for ID and class names. Use short, unique identifiers followed by a dash.
- Using namespaces helps preventing naming conflicts and can make maintenance easier, for example in search and replace operations.

```
.adw-help {} /* AdWords */
#maia-note {} /* Maia */
```

2.2.1.10. ID and Class Name Delimiters

- Separate words in ID and class names by a hyphen.

- Do not concatenate words and abbreviations in selectors by any characters (including none at all) other than hyphens, in order to improve understanding and scannability.

```
/* Not recommended: does not separate the words “demo” and “image” */
.demoimage {}

/* Not recommended: uses underscore instead of hyphen */
.error_status {}
/* Recommended */
#video-id {}
.ads-sample {}
```

2.2.1.11. Hacks

- Avoid user agent detection as well as CSS “hacks”—try a different approach first.
- It’s tempting to address styling differences over user agent detection or special CSS filters, workarounds, and hacks. Both approaches should be considered last resort in order to achieve and maintain an efficient and manageable code base. Put another way, giving detection and hacks a free pass will hurt projects in the long run as projects tend to take the way of least resistance. That is, allowing and making it easy to use detection and hacks means using detection and hacks more frequently—and more frequently is too frequently.

2.2.2. CSS Formatting Rules

2.2.2.1. Declaration Order

- Alphabetize declarations.
- Put declarations in alphabetical order in order to achieve consistent code in a way that is easy to remember and maintain.
- Ignore vendor-specific prefixes for sorting purposes. However, multiple vendor-specific prefixes for a certain CSS property should be kept sorted (e.g. -moz prefix comes before -webkit).

```
background: fuchsia;
border: 1px solid;
-moz-border-radius: 4px;
-webkit-border-radius: 4px;
border-radius: 4px;
color: black;
text-align: center;
text-indent: 2em;
```

2.2.2.2. Block Content Indentation

- Indent all block content.
- Indent all block content, that is rules within rules as well as declarations, so to reflect hierarchy and improve understanding.

```
@media screen, projection {
    html {
        background: #fff;
        color: #444;
    }
}
```

2.2.2.3. Declaration Stops

- Use a semicolon after every declaration.
- End every declaration with a semicolon for consistency and extensibility reasons.

```
/* Not recommended */
.test {
    display: block;
    height: 100px
}
/* Recommended */
.test {
    display: block;
    height: 100px;
}
```

2.2.2.4. Property Name Stops

- Use a space after a property name's colon.
- Always use a single space between property and value (but no space between property and colon) for consistency reasons.

```
/* Not recommended */
h3 {
    font-weight:bold;
}
/* Recommended */
h3 {
    font-weight: bold;
}
```

2.2.2.5. Declaration Block Separation

- Use a space between the last selector and the declaration block.
- Always use a single space between the last selector and the opening brace that begins the declaration block.
- The opening brace should be on the same line as the last selector in a given rule.

```
/* Not recommended: missing space */
#video{
    margin-top: 1em;
}

/* Not recommended: unnecessary line break */
#video
{
    margin-top: 1em;
}
/* Recommended */
#video {
    margin-top: 1em;
}
```

2.2.2.6. Selector and Declaration Separation

- Separate selectors and declarations by new lines.
- Always start a new line for each selector and declaration.

```
/* Not recommended */
a:focus, a:active {
    position: relative; top: 1px;
}
/* Recommended */
h1,
h2,
h3 {
    font-weight: normal;
    line-height: 1.2;
}
```

2.2.2.7. Rule Separation

- Separate rules by new lines.
- Always put a blank line (two line breaks) between rules.

```
html {
    background: #fff;
}

body {
    margin: auto;
```

```
width: 50%;  
}
```

2.2.2.8. CSS Quotation Marks

- Use single ("") rather than double ("""") quotation marks for attribute selectors and property values.
- Do not use quotation marks in URI values (url()).
- Exception: If you do need to use the @charset rule, use double quotation marks—single quotation marks are not permitted.

```
/* Not recommended */  
@import url("https://www.google.com/css/maia.css");  
  
html {  
    font-family: "open sans", arial, sans-serif;  
}  
/* Recommended */  
@import url(https://www.google.com/css/maia.css);  
  
html {  
    font-family: 'open sans', arial, sans-serif;  
}
```

2.2.3. CSS Meta Rules

2.2.3.1. Section Comments

- Group sections by a section comment (optional).
- If possible, group style sheet sections together by using comments. Separate sections with new lines.

```
/* Header */  
  
#adw-header {}  
  
/* Footer */  
  
#adw-footer {}  
  
/* Gallery */  
  
.adw-gallery {}
```

3. JavaScript Coding Standard

3.1. General JavaScript Guidelines

3.1.1. Use expanded syntax

For JavaScript we use expanded syntax, with each line of JS on a new line, the opening brace of a block on the same line as its associated statement, and the closing brace on a new line. This maximizes readability, and again, promotes consistency on MDN.

```
/* Recommended */
function myFunc() {
    console.log('Hello!');
};

/* Not recommended */
function myFunc() { console.log('Hello!'); };
```

In addition, keep these specifics in mind:

- Don't include padding spaces after opening brackets or before closing brackets — (myVar), not (myVar).
- All statements must end with semicolons (";"). We require them in all of our code samples even though they're technically optional in JavaScript because we feel that it leads to code that is clearer and more precise about where each statement ends.
- Use single quotes in JavaScript, wherever single quotes are needed in syntax.
- There should be no space between a control statement keyword, function, or loop keyword and its opening parenthesis (e.g. if() { ... }, function myFunc() { ... }, for(...) { ... }).
- There should be a space between the parentheses and the opening curly brace in such cases as described in the previous bullet.

3.1.2. JavaScript comments

- Use JS-style comments to comment code that isn't self-documenting:

```
function myFunc() {
    // Output the string 'Hello' to the browser's JS console
    console.log('Hello');
    // Create a new paragraph, fill it with content, and append it to the <body>
    let para = document.createElement('p');
    para.textContent = 'My new paragraph';
    document.body.appendChild(para);
}
```

- Also note that you should leave a space between the slashes and the comment, in each case.

3.1.3. Use modern JS features

For general usage, you can use modern well-supported JS features (such as arrow functions, promises, `async/await`, `let/const`, template literals, and spread syntax) in MDN examples. We include them in many places in these guidelines, as we believe the web industry has generally gotten to the point where such features are familiar enough to be understandable. And for those that don't use them yet, we'd like to play our part in helping people to evolve their skills.

3.2. Variable

3.2.1. Variable naming

For variable names use `lowerCamelCasing`, and use concise, human-readable, semantic names where appropriate.

```
/* Recommended */
let playerScore = 0;

let speed = distance / time;

/* Not recommended */
let thisIsaveryLONGVariableThatRecordsPlayerscore345654 = 0;

let s = d/t;
```

3.2.2. Declaring variables

- When declaring variables and constants, use the `let` and `const` keywords, not `var`.
- If a variable will not be reassigned, prefer `const`:

```
const myName = 'Chris';
console.log(myName);
```

- Otherwise, use `let`:

```
let myAge = '40';
myAge++;
console.log('Happy birthday!');
```

3.3. Operators and comparison

3.3.1. Ternary operators

- Ternary operators should be put on a single line:

```
let status = (age >= 18) ? 'adult' : 'minor';
```

- Not nested:

```
let status = (age >= 18)
    ? 'adult'
    : 'minor';
```

- This is much harder to read.

3.3.2. Use strict equality

- Always use strict equality and inequality.

```
/* Recommended */
```

```
name === 'Chris';
```

```
age !== 25;
```

```
/* Not recommended */
```

```
name == 'Chris';
```

```
age != 25;
```

3.3.3. Use shortcuts for boolean tests

Use shortcuts for boolean tests — use x and !x, not x === true and x === false.

3.4. Control statements

```
/* Recommended */
if(iceCream) {
    alert('Woo hoo!');
}
```

```
/* Not recommended */
if (iceCream){
    alert('Woo hoo!');
}
```

Also bear in mind:

- There should be no space between a control statement keyword and its opening parenthesis.
- There should be a space between the parentheses and the opening curly brace.

3.5. Strings

3.5.1. Use template literals

For inserting values into strings, use string literals.

```
/* Recommended */
let myName = 'Chris';
console.log(`Hi! I'm ${myName}!`);

/* Not recommended */
let myName = 'Chris';
console.log('Hi! I\'m' + myName + '!');
```

3.5.2. Use textContent, not innerHTML

When inserting strings into DOM nodes, use Node.textContent:

```
let text = 'Hello to all you good people';
const para = document.createElement('p');
para.textContent = text;
```

Not Element.innerHTML:

```
let text = 'Hello to all you good people';
const para = document.createElement('p');
para.innerHTML = text;
```

textContent is a lot more efficient, and less error-prone than innerHTML.

3.6. Conditionals

3.6.1. General purpose looping

- When loops are required, feel free to choose an appropriate loop out of the available ones (for, for...of, while, etc.) Just make sure to keep the code as understandable as possible.
- When using for/for...of loops, make sure to define the initializer properly, with a let keyword:

```
/* Recommended */
let cats = ['Athena', 'Luna'];
for(let i of cats) {
    console.log(i);
}

/* Not recommended */
let cats = ['Athena', 'Luna'];
for(i of cats) {
    console.log(i);
}
```

- Also bear in mind:

- There should be no space between a loop keyword and its opening parenthesis.
- There should be a space between the parentheses and the opening curly brace.

3.6.2. Switch statements

Format switch statements like this:

```
let expr = 'Papayas';
switch(expr) {
    case 'Oranges':
        console.log('Oranges are $0.59 a pound.');
        break;
    case 'Papayas':
        console.log('Mangoes and papayas are $2.79 a pound.');
        // expected output: "Mangoes and papayas are $2.79 a pound."
        break;
    default:
        console.log(`Sorry, we are out of ${expr}`);
}
```

3.7. Functions and objects

3.7.1. Function naming

- For function names use lowerCamelCasing, and use concise, human-readable, semantic names where appropriate.

```
/* Recommended */
function sayHello() {
    alert('Hello!');
};

/* Not recommended */
function SayHello() {
    alert('Hello!');
};

function notVeryObviousName() {
    alert('Hello!');
};
```

3.7.2. Defining functions

- Where possible, use the function declaration to define functions over function expressions:

```
/* Recommended */
function sum(a, b) {
    return a + b;
}

/* Not recommended */
```

```
let sum = function(a, b) {
    return a + b;
}
```

- When using anonymous functions inside a method that requires a function as a parameter, it is acceptable (although not required) to use an arrow function to make the code shorter and cleaner.

- So instead of this:

```
const array1 = [1, 2, 3, 4];
let sum = array1.reduce(function(a, b) {
    return a + b;
});
```

- you could write this:

```
const array1 = [1, 2, 3, 4];
let sum = array1.reduce((a, b) =>
    a + b
);
```

- Also bear in mind:

- There should be no space between a function name and its opening parenthesis.
- There should be a space between the parentheses and the opening curly brace.

3.7.3. Creating objects

Use literals — not constructors — for creating general objects (i.e., when classes are not involved):

```
/* Recommended */
let myObject = { };

/* Not recommended */
let myObject = new Object();
```

3.7.4. Object classes

- Use ES class syntax for objects, not old-style constructors.

```
class Person {
    constructor(name, age, gender) {
        this.name = name;
        this.age = age;
        this.gender = gender;
    }

    greeting() {
        console.log(`Hi! I'm ${this.name}`);
    }
}
```

- Use extends for inheritance:

```
class Teacher extends Person {
    ...
}
```

3.7.5. Object naming

- When defining an object class (as seen above), use UpperCamelCasing (also known as PascalCasing) for the class name, and lowerCamelCasing for the object property and method names.
- When defining an object instance, either a literal or via a constructor, use lowerCamelCase for the instance name:

```
let hanSolo = new Person('Han Solo', 25, 'male');

let hanSolo = {
    name: 'Han Solo',
    age: 25,
    gender: 'male'
}
```

3.8. Arrays

3.8.1. Creating arrays

- Use literals — not constructors — for creating arrays:

```
/* Recommended */
let myArray = [ ];

/* Not recommended */
let myArray = new Array(length);
```

3.8.2. Adding to an array

- When adding items to an array, use push(), not direct assignment. Given the following array:

```
const pets = [];

/* Recommended */
pets.push('cat');

/* Not recommended */
pets[pets.length] = 'cat';
```

3.9. Error handling

- If certain states of your program throw uncaught errors, they will halt execution and potentially reduce the usefulness of the example. You should therefore catch errors using a try...catch block:

```
try {
  console.log(results);
}
catch(e) {
  console.error(e);
}
```

4. ReactJS Coding Standard

4.1. Basic Rules

- Only include one React component per file.
- Always use JSX syntax.
- Do not use React.createElement unless you're initializing the app from a file that is not JSX.

4.2. Naming

- File- and component name need to be identical.
- Use PascalCase naming convention for filename as well as component name, e.g. GlobalHeader.js

```
// Bad
// Filename: foo.js

class Foo extends React.Component {}

export default Foo;
```

```
// Good
// Filename: Foo.js

class Foo extends React.Component {}

export default Foo;
```

4.3. Ordering

- Ordering for class extends React.Component:
 - constructor
 - optional static methods
 - getChildContext
 - componentWillMount
 - componentDidMount
 - componentWillReceiveProps
 - shouldComponentUpdate
 - componentWillUpdate
 - componentDidUpdate
 - componentWillUnmount
 - clickHandlers or eventHandlers like onClickSubmit() or onChangeDescription()
 - getter methods for render like getSelectReason() or getFooterContent()
 - Optional render methods like renderNavigation() or renderProfilePicture()
 - render
- How to define propTypes, defaultProps, contextTypes, etc...

```
import React, { Component, PropTypes } from 'react';

const propTypes = {
  id: PropTypes.number.isRequired,
  url: PropTypes.string.isRequired,
  text: PropTypes.string,
};

const defaultProps = {
  text: 'Hello World',
};

export default class Link extends Component {
  static methodsAreOk() {
    return true;
  }

  render() {
    return <a href={this.props.url} data-
id={this.props.id}>{this.props.text}</a>
  }
}
```

```
Link.propTypes = propTypes;
Link.defaultProps = defaultProps;
```

4.4. Alignment

Follow these alignment styles for JSX syntax

```
// bad
<Foo superLongParam="bar"
      anotherSuperLongParam="baz" />

// good
<Foo
    superLongParam="bar"
    anotherSuperLongParam="baz"
/>

// if props fit in one line then keep it on the same line
<Foo bar="bar" />

// children get indented normally
<Foo
    superLongParam="bar"
    anotherSuperLongParam="baz"
>
    <Spazz />
</Foo>
```

4.5. Quotes

Always use double quotes ("") for JSX attributes, but single quotes for all other JS.

```
// bad
<Foo bar='bar' />

// good
<Foo bar="bar" />

// bad
<Foo style={{ left: "20px" }} />

// good
<Foo style={{ left: '20px' }} />

## Props
- Always use camelCase for prop names.

```javascript
// bad
<Foo
 UserName="hello"
 phone_number={12345678}
/>
```

```
// good
<Foo
 userName="hello"
 phoneNumber={12345678}
/>
```

## 4.6. Tags

- Always self-close tags that have no children.

```
// bad
<Foo className="stuff"></Foo>

// good
<Foo className="stuff" />
```

- If your component has multi-line properties, close its tag on a new line.

```
// bad
<Foo
 bar="bar"
 baz="baz" />

// good
<Foo
 bar="bar"
 baz="baz"
/>
```

## 4.7. Stateless function components

For stateless components use the function syntax, introduced in React 0.14.

```
// Using an ES2015 (ES6) arrow function:
var Aquarium = (props) => {
 var fish = getFish(props.species);
 return <Tank>{fish}</Tank>;
};

// Or with destructuring and an implicit return, simply:
var Aquarium = ({species}) => (
 <Tank>
 {getFish(species)}
 </Tank>
);

// Then use: <Aquarium species="rainbowfish" />
```

## 4.8. PropTypes Declaration

- Setting propTypes declarations is mandatory
- Group them into required/none-required
- Alphabetically sort each group
- Separate them by a new line

```
static propTypes = {
 blank: React.PropTypes.bool.isRequired,
 block: React.PropTypes.bool.isRequired,
 size: React.PropTypes.string.isRequired,
 to: React.PropTypes.string.isRequired,
 disabled: React.PropTypes.bool,
};
```

## 4.9. Prefixing none React methods

Prefix all none React methods within a component with an underscore.

```
class Foo extends React.Component {

 componentDidMount() {
 this._update();
 }

 _update() {
 // e.g. update position
 }

 render() {
 return (
 <div>foo</div>
);
 }
}
```

## 4.10. Prefixing component wide variables

In the exception that you do not want to place a component wide variables on the state, you have to prefix it with an underscore.

```
class Foo extends React.Component {

 componentDidMount() {
 this._el = React.FindDOMNode(this.refs.foo);
 }

 render() {
 return (
 <div>foo</div>
);
 }
}
```

```
}
```

#### 4.11. Using handler methods

- Name methods using '\_handle' + triggering event, e.g. \_handleClick
- Bind handler using the ES6 arrow syntax, so inside the callback it has always the right context

```
class Foo extends React.Component {

 _handleClick = (e) => {
 this.setState(
 {
 clicked: true
 }
);
 }

 render() {
 return (
 <button
 onClick={this._handleClick}>Submit</button>
);
 }
}
```

#### 4.12. Using “container” components for loading data from Stores

```
// CommentListContainer.js

class CommentListContainer extends React.Component {
 constructor() {
 super();
 this.state = { comments: [] }
 }
 componentDidMount() {
 $.ajax({
 url: "/my-comments.json",
 dataType: 'json',
 success: function(comments) {
 this.setState({comments: comments});
 }.bind(this)
 });
 }
 render() {
 return <CommentList comments={this.state.comments} />;
 }
}

// CommentList.js
```

```

class CommentList extends React.Component {
 constructor(props) {
 super(props);
 }
 _renderComment({body, author}) {
 return {body}-{author};
 }
 render() {
 return {this.props.comments.map(_renderComment)}
;
 }
}

```

#### 4.13. Closing Components without children

```

render() {
 return (
 <Foo>
 <Bar />
 </Foo>
);
}

```

#### 4.14. List iterations

When rendering a list of components from an array, do it inline if it makes sense. If the map function is too long or complicated, consider extracting it out into its own method on the component class.

```

render() {
 return (

 {this.state.fooList.map(fooItem =>
<FooItem>{fooItem}</FooItem>)}

);
}

```

#### 4.15. Formatting Attributes

```

<input
 type="text"
 value={this.state.foo}
 onChange={this._handleInputChange.bind(this, 'foo')}
/>

```

## 4.16. Inline CSS styles

Static properties should be set in the SCSS, dynamic ones in JS.

```
.Foo {
 background-color: #ff0;
}
class Foo extends React.Component {

 render() {

 const styles = {
 'transform': 'translateX(' + this.state.position +
' + px)'
 };

 return (
 <div className="Foo" styles={classes}>Foo
Header</div>
)
 };
}
```

## 4.17. Use "classnames" to set CSS classes

Use the classnames node module for setting CSS classes on an element.

```
import React from 'react';
import classnames from 'classnames';

class Foo extends React.Component {

 render() {

 const classes = classnames('FooHeader', {
 'is-fixed': this.state.fixed,
 'is-visible': this.state.visible
 });

 return (
 <div className={classes}>Foo Header</div>
)
 };
}
```

## **5. Reference**

- [1] <https://google.github.io/styleguide/htmlcssguide.html>.
- [2] [https://developer.mozilla.org/en-US/docs/MDN/Guidelines/Code\\_guidelines/JavaScript#general\\_javascript\\_guidelines](https://developer.mozilla.org/en-US/docs/MDN/Guidelines/Code_guidelines/JavaScript#general_javascript_guidelines)
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# Capstone Project 2

CMU-SE 451

## Meeting

Version 1.7

Date: 14 May 2022

## SENIOR PROJECT MANAGEMENT SYSTEM FOR INTERNATIONAL SCHOOL

### Submitted by

Tien, Nguyen Van

Phuoc, Ha Duc

Huy, Truong Dong

Dat, Nguyen Thanh

### Approved by

Chau, Truong Ngoc

#### Proposal Review Panel Representative:

Name \_\_\_\_\_ Signature \_\_\_\_\_ Date \_\_\_\_\_

#### Capstone Project 2- Mentor:

Name \_\_\_\_\_ Signature \_\_\_\_\_ Date \_\_\_\_\_

## PROJECT INFORMATION

<b>Project acronym</b>	Senior Project Management System for International School		
<b>Project Title</b>	SPMS		
<b>Start Date</b>	18 Feb 2022	<b>End Date</b>	15 May 2022
<b>Lead Institution</b>	International School, Duy Tan University		
<b>Project Mentor</b>	Chau, Truong Ngoc		
<b>Scrum master / Project Leader &amp; contact details</b>	Tien, Nguyen Van Email: cnnguyenvantien@gmail.com Tel: 0704.042.832 Student ID: 24211208536		
<b>Partner Organization</b>			
<b>Project Web URL</b>			
<b>Team members</b>	<b>Name</b>	<b>Email</b>	<b>Tel</b>
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## **REVISION HISTORY**

<b>Version</b>	<b>Date</b>	<b>Comments</b>	<b>Author</b>	<b>Approval</b>
v1.0	27/02/2022	Initial Release	All Members	x
v1.1	21 Feb 2022	Update mentor and team meeting	Dat	x
v1.2	17 Mar 2022	Update Sprint 1	Dat	x
v1.3	27 Mar 2022	Update Sprint 2	Dat	x
v1.4	10 Apr 2022	Update review	Dat	x
v1.5	26 Apr 2022	Update Sprint 3	Dat	x
v1.6	12 May 2022	Update Sprint 4	Dat	x
v1.7	14 May 2022	Update demo	Dat	x

## SIGNATURE

**Document Approvals:** *The following signatures are required for approval of this document.*

Chau, Truong Ngoc <i>Mentor</i>		Date:
Tien, Nguyen Van <i>Scrum Master</i>		Date:
Phuoc, Ha Duc <i>Product Owner</i>		Date:
Huy, Truong Dong <i>Member</i>		Date:
Dat, Nguyen Thanh <i>Member</i>		Date:

# Team Meeting

- Place:
  - Google Meet
  - Time: 20h00 – 21h00
- Participants:
  - Nguyen Van Tien
  - Ha Duc Phuoc
  - Nguyen Thanh Dat
  - Truong Dong Huy
- Content:
  - Discuss about the topic for the project.
  - Solution
  - Plan for the next meeting
  - Report ideas.

## SIGNATURE

<b>SCRUM MASTER</b>	<b>Nguyen Van Tien</b>	<b>Date</b>	<b>15/02/2022</b>
---------------------	------------------------	-------------	-------------------

# Mentor Meeting

- Place:
  - Google Meet
  - Time: 20h00 – 21h00
- Participants:
  - Mentor: Truong Ngoc Chau
  - Nguyen Van Tien
  - Ha Duc Phuoc
  - Nguyen Thanh Dat
  - Truong Dong Huy
- Content:
  - Discuss with the mentor about the topic.
  - Solution
  - Choose a topic
  - Plan for the next meeting
  - Report ideas.

## SIGNATURE

<b>SCRUM MASTER</b>	<b>Nguyen Van Tien</b>	<b>Date</b>	<b>17/02/2022</b>
---------------------	------------------------	-------------	-------------------

## Mentor Meeting

- Place:
  - Google Meet
  - Time: 20h00 – 21h00
- Participants:
  - Mentor: Truong Ngoc Chau
  - Nguyen Van Tien
  - Ha Duc Phuoc
  - Nguyen Thanh Dat
  - Truong Dong Huy
- Content:
  - Discuss with the mentor about the topic.
  - Agree the topic
  - Plan for the next meeting

### SIGNATURE

<b>SCRUM MASTER</b>	<b>Nguyen Van Tien</b>	<b>Date</b>	<b>19/02/2022</b>
---------------------	------------------------	-------------	-------------------

# Team Meeting

- Place:
  - Google Meet
  - Time: 20h00 – 21h00
- Participants:
  - Nguyen Van Tien
  - Ha Duc Phuoc
  - Nguyen Thanh Dat
  - Truong Dong Huy
- Content:
  - Discuss the tasks for members..
  - Assign document for members.
  - Plan for the next meeting

## SIGNATURE

<b>SCRUM MASTER</b>	<b>Nguyen Van Tien</b>	<b>Date</b>	<b>21/02/2022</b>
---------------------	------------------------	-------------	-------------------

# Sprint 1 Plan Meeting

- Place:
  - Google Meet
  - Time: 20h00 – 21h00
- Participants:
  - Nguyen Van Tien
  - Ha Duc Phuoc
  - Nguyen Thanh Dat
  - Truong Dong Huy
- Content:
  - Discuss about the task for sprint 1.
  - Check task
  - Assign task for sprint 1
  - Plan for the next meeting

## SIGNATURE

<b>SCRUM MASTER</b>	<b>Nguyen Van Tien</b>	<b>Date</b>	<b>01/03/2022</b>
---------------------	------------------------	-------------	-------------------

# Sprint 1 Monitoring Meeting

- Place:
  - Google Meet
  - Time: 20h00 – 21h00
- Participants:
  - Nguyen Van Tien
  - Ha Duc Phuoc
  - Nguyen Thanh Dat
  - Truong Dong Huy
- Content:
  - Discuss about the task for sprint 1.
  - Check the current progress
  - Plan for the next meeting

## SIGNATURE

<b>SCRUM MASTER</b>	<b>Nguyen Van Tien</b>	<b>Date</b>	<b>10/03/2022</b>
---------------------	------------------------	-------------	-------------------

## End of Sprint 1 Meeting

- Place:
  - Google Meet
  - Time: 8h00 – 10h00
- Participants:
  - Nguyen Van Tien
  - Ha Duc Phuoc
  - Nguyen Thanh Dat
  - Truong Dong Huy
- Content:
  - Discuss about the task for sprint 1.
  - Check the completed tasks at the end of sprint 1
  - Plan for the task that are behind schedule
  - Plan for the next meeting

### SIGNATURE

<b>SCRUM MASTER</b>	<b>Nguyen Van Tien</b>	<b>Date</b>	<b>17/03/2022</b>
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## Sprint 2 Plan Meeting

- Place:
  - Google Meet
  - Time: 20h00 – 22h00
- Participants:
  - Nguyen Van Tien
  - Ha Duc Phuoc
  - Nguyen Thanh Dat
  - Truong Dong Huy
- Content:
  - Discuss about the task for sprint 2.
  - Assign tasks for sprint 2
  - Check tasks
  - Plan for the next meeting

### SIGNATURE

<b>SCRUM MASTER</b>	<b>Nguyen Van Tien</b>	<b>Date</b>	<b>19/03/2022</b>
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## Sprint 2 Monitoring Meeting

- Place:
  - Google Meet
  - Time: 20h00 – 22h00
- Participants:
  - Nguyen Van Tien
  - Ha Duc Phuoc
  - Nguyen Thanh Dat
  - Truong Dong Huy
- Content:
  - Discuss about the task for sprint 2.
  - Check the current progress
  - Plan for the next meeting

### SIGNATURE

<b>SCRUM MASTER</b>	<b>Nguyen Van Tien</b>	<b>Date</b>	<b>23/03/2022</b>
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## End of Sprint 2 Meeting

- Place:
  - Google Meet
  - Time: 20h00 – 22h00
- Participants:
  - Nguyen Van Tien
  - Ha Duc Phuoc
  - Nguyen Thanh Dat
  - Truong Dong Huy
- Content:
  - Discuss about the task for sprint 2.
  - Check the completed tasks at the end of sprint 2
  - Plan for the task that are behind schedule
  - Plan for the next meeting

### SIGNATURE

<b>SCRUM MASTER</b>	<b>Nguyen Van Tien</b>	<b>Date</b>	<b>27/03/2022</b>
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## Review Meeting

- Place:
  - Google Meet
  - Time: 20h00 – 22h00
- Participants:
  - Mentor: Mr. Truong Ngoc Chau
  - Nguyen Van Tien
  - Ha Duc Phuoc
  - Nguyen Thanh Dat
  - Truong Dong Huy
- Content:
  - Review and demo the product.
  - Overall review of the product
  - Note things to add
  - Plan for the next meeting

### SIGNATURE

<b>SCRUM MASTER</b>	<b>Nguyen Van Tien</b>	<b>Date</b>	<b>10/04/2022</b>
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## Sprint 3 Plan Meeting

- Place:
  - Google Meet
  - Time: 14h00 – 16h00
- Participants:
  - Nguyen Van Tien
  - Ha Duc Phuoc
  - Nguyen Thanh Dat
  - Truong Dong Huy
- Content:
  - Discuss about the task for sprint 3.
  - Assign tasks for members
  - Check tasks
  - Plan for the next meeting

### SIGNATURE

<b>SCRUM MASTER</b>	<b>Nguyen Van Tien</b>	<b>Date</b>	<b>14/04/2022</b>
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## Sprint 3 Monitoring Meeting

- Place:
  - Google Meet
  - Time: 8h00 – 10h00
- Participants:
  - Nguyen Van Tien
  - Ha Duc Phuoc
  - Nguyen Thanh Dat
  - Truong Dong Huy
- Content:
  - Discuss about the task for sprint 3.
  - Check the current progress
  - Plan for the next meeting

### SIGNATURE

<b>SCRUM MASTER</b>	<b>Nguyen Van Tien</b>	<b>Date</b>	<b>21/04/2022</b>
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## End of Sprint 3 Meeting

- Place:
  - Google Meet
  - Time: 20h00 – 22h00
- Participants:
  - Nguyen Van Tien
  - Ha Duc Phuoc
  - Nguyen Thanh Dat
  - Truong Dong Huy
- Content:
  - Discuss about the task for sprint 3.
  - Check the completed tasks at the end of sprint 3
  - Plan for the task that are behind schedule
  - Plan for the next meeting

### SIGNATURE

<b>SCRUM MASTER</b>	<b>Nguyen Van Tien</b>	<b>Date</b>	<b>26/04/2022</b>
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## Sprint 4 Plan Meeting

- Place:
  - Google Meet
  - Time: 20h00 – 21h00
- Participants:
  - Nguyen Van Tien
  - Ha Duc Phuoc
  - Nguyen Thanh Dat
  - Truong Dong Huy
- Content:
  - Discuss about the task for sprint 4.
  - Assign tasks for members
  - Check tasks
  - Plan for the next meeting

### SIGNATURE

<b>SCRUM MASTER</b>	<b>Nguyen Van Tien</b>	<b>Date</b>	<b>02/05/2022</b>
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## Sprint 4 Monitoring Meeting

- Place:
  - Google Meet
  - Time: 20h00 – 21h00
- Participants:
  - Nguyen Van Tien
  - Ha Duc Phuoc
  - Nguyen Thanh Dat
  - Truong Dong Huy
- Content:
  - Discuss about the task for sprint 4.
  - Check the current progress
  - Plan for the next meeting

### SIGNATURE

<b>SCRUM MASTER</b>	Nguyen Van Tien	Date	08/05/2022
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## End of Sprint 4 Meeting

- Place:
  - Google Meet
  - Time: 20h00 – 22h00
- Participants:
  - Nguyen Van Tien
  - Ha Duc Phuoc
  - Nguyen Thanh Dat
  - Truong Dong Huy
- Content:
  - Discuss about the task for sprint 4.
  - Check the completed tasks at the end of sprint 4
  - Plan for the task that are behind schedule
  - Plan for the next meeting

### SIGNATURE

<b>SCRUM MASTER</b>	<b>Nguyen Van Tien</b>	<b>Date</b>	<b>12/05/2022</b>
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## Review Meeting

- Place:
  - 123 Le Loi, Da Nang
  - Time: 8h00 – 10h00
- Participants:
  - Mentor: Mr. Truong Ngoc Chau
  - Nguyen Van Tien
  - Ha Duc Phuoc
  - Nguyen Thanh Dat
  - Truong Dong Huy
- Content:
  - Review and demo the product.
  - Check the features built
  - Note things to update
  - Plan for the next meeting

### SIGNATURE

<b>SCRUM MASTER</b>	<b>Nguyen Van Tien</b>	<b>Date</b>	<b>14/05/2022</b>
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# Capstone Project 2

CMU-SE 451

## Reflection

Version 1.0

Date: 13 May 2022

## SENIOR PROJECT MANAGEMENT SYSTEM FOR INTERNATIONAL SCHOOL

### Submitted by

Tien, Nguyen Van

Phuoc, Ha Duc

Huy, Truong Dong

Dat, Nguyen Thanh

### Approved by

Chau, Truong Ngoc

### Proposal Review Panel Representative:

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Name              Signature              Date

### Capstone Project 2- Mentor:

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Name              Signature              Date

## PROJECT INFORMATION

<b>Project acronym</b>	Senior Project Management System for International School		
<b>Project Title</b>	SPMS		
<b>Start Date</b>	18 Feb 2022	<b>End Date</b>	15 May 2022
<b>Lead Institution</b>	International School, Duy Tan University		
<b>Project Mentor</b>	Chau, Truong Ngoc		
<b>Scrum master / Project Leader &amp; contact details</b>	Tien, Nguyen Van Email: cnnguyenvantien@gmail.com Tel: 0704.042.832 Student ID: 24211208536		
<b>Partner Organization</b>			
<b>Project Web URL</b>			
<b>Team members</b>	<b>Name</b>	<b>Name</b>	<b>Name</b>
24211202634	Phuoc, Ha Duc	dphuoc432000@gmail.com	0961622464
24211206538	Huy, Truong Dong	huydongtruong@gmail.com	0358040650
24211206470	Dat, Nguyen Thanh	ngthanhdat521@gmail.com	0767836541

## **REVISION HISTORY**

<b>Version</b>	<b>Date</b>	<b>Comments</b>	<b>Author</b>	<b>Approval</b>
v1.0	13/05/2022	Initial Release	All Members	x

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## SIGNATURE

**Document Approvals:** *The following signatures are required for approval of this document.*

Chau, Truong Ngoc <i>Mentor</i>		Date:
Tien, Nguyen Van <i>Scrum Master</i>		Date:
Phuoc, Ha Duc <i>Product Owner</i>		Date:
Huy, Truong Dong <i>Member</i>		Date:
Dat, Nguyen Thanh <i>Member</i>		Date:

**1. What challenges did you face while completing this project?**

- New technology. This is the team's first project using the ReactJS library, NodeJS Framework and SQL (PostgreSQL). Although this does not affect much, this is also a common difficulty of the group in completing the project.
- Lack of communication is also a barrier for my team
- Lack of practical experience. Estimation of workload is highly dependent on each individual's perception and experience
- Lack of professional knowledge.
- Difficulty finding resources. The right technology for the project.
- Programming skills are not good.

**2. What is the most important thing you learned in this project?**

- Process to produce a product.
- Communication between people and teamwork. Although we cannot meet to work together during the Covid pandemic. But we still try to work together through online meetings.
- Manage the progress of each stage and task. Estimation is very important to ensure that the work is completed on time.
- Work with the team to solve the project's requirements. Make requests optimal and simple.
- Improved access to new knowledge and new technologies.

**3. What needs to be improved to make the project teamwork best?**

- Improve teamwork in communication and working together.
- Exploit deep requests.
- Should make rules when working in groups.
- Have a clear goal.
- Members need to be responsible for the group's project.
- Clear schedule.
- Accept changes to the requirements to make the project more optimal.
- Improve programming skills.

**4. How could you/your mentor(s) change this project to make it better next time?**

- Complement the team's fever in the product finishing process.
- Indicate the problems encountered. Provide appropriate solutions and suggestions for optimal and better products.
- Help the team solve problems encountered during group work. Improve teamwork.

**5. What do you expect after completing the project?**

- Through this project, each member wants to improve their programming skills. Improve self-learning when encountering new things.
- Besides, the group wants to improve their communication skills, teamwork and work under pressure.
- All members have a deep understanding of the Scrum model and understand how to get work done on time.