UNSW AUSTRALIA

Group Assignment Cover Sheet

Never Stand Still | Faculty of Engineering | School of Mechanical and Manufacturing Engineering

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- Please retain a copy of this assignment for your records.

Course code: GSOE 9820 **Course name: Project Management**

Date submitted: 13/04/2021

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Team Attribution Survey and Signature Table

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Grading procedure:

1. The report is marked according to the marking guide giving raw grade ***R***.
2. The team's demonstrator will check, modify if necessary, and approve the teamattribution survey
3. The approved contribution of a group member is ***C***
4. The highest (or equal highest) contribution(s) is/are C_{max}
5. Each group member receives a final grade $F = R \times C/C_{max}$
6. You will be individually notified of ***F*** and ***R***

Gsoe 9820: Project Management

T1/2021

Assignment1 part 3

Project Management Plan (PMP)

UNSW life, Wherever you are

DC-Team 8

Data: 13/04/2021

Group members and contributions

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Scope statement WBS PMP reflection doc	Risk management plan PMP reflection doc	Schedule part Schedule Gantt Chart Network diagram HR resource plan part
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Network diagram Project Charter Scope statement Definition of Success Management Strategy	HR resource plan Estimated Time and Cost WBS	

Contents

1. PROJECT CHARTER

1.1 Project Description and Purpose

UNSW notifies every student about their schedules like location and time of their lectures, tutorials and laboratory sessions related to the courses they are enrolled in. But apart from just studies there are heaps of things which are happening in UNSW which are organized by student societies, clubs and from some external partners as well. Especially when most of the activities moved online, the student participation rate has been drastically reduced due to certain reasons like not aware of the events happening online and in person activities at UNSW. In order to satisfy all the UNSW students and stakeholders, a website is designed which acts as a common interface between students and stakeholders to share and check their details regarding all the extracurricular activities organized by UNSW which helps in having a better UNSW life experience with lots of fun and information. When the students get accurate information about the different events and activities happening, there will be audience for all the events happening which satisfies the purpose of organizing an event or activities.

1.2 Main Objectives:

Currently, all clubs and societies in UNSW use different social media platforms like Facebook, Instagram, discord, Microsoft Teams, and several other apps to promote any events, workshops about their clubs. However, it is impossible for every student to use all these social media platforms. So, there are lot of chances that a student might miss out some meaningful events or activities that are hosted or organized by clubs or organizations. So, the main objective of our project is to provide information on various events and activities happening in different clubs and societies in one single platform. So, there is no chance that a student is missing out any social events/ activities, webinars, seminars, workshops, etc. as they will be notified at the through the website which will be helpful in saving time to distinguish different events which will be useful for a particular student. At the same time, it will be beneficial and easy for the stakeholders to just stick to one website to update their events and activities to notify the students which in turn reduces time consumption for stakeholders as well as students.

1.3 Stakeholders List and Benefits for Stakeholders:

- **Clubs and Societies**

They can post or update their events on our platform and students will get notified through this platform instead of checking or posting on different social media platforms.

- **Volunteers and club members**

Volunteers can check their available timeslots for their volunteering activities and get AHEGS recognition. It is also beneficial for the club members to access and organize social events, workshops and maintain a track of all the activities happening in the club or society.

- **Sponsors and Enterprise**

Sponsors from different enterprises can host various workshops and promote numerous opportunities in their organization for students through clubs and societies by professional networking.

- **Students**

Students from all the faculties will be benefited by being updated on all the extracurricular activities happening at UNSW from a single website and there is no chance that a student missing any opportunity which paves way in exploring life at UNSW.

1.4 Major Risks:

- Identifying trustworthy team members to work on the project as the implementation ideas should not be leaked anywhere as per the privacy notice till the project gets the authorization to publish its features, specs, and core idea.
- In cases like, an equipment or software unavailable, malfunctioning of equipment during the testing phase, needs a replacement of any equipment, shipping from other countries, any improvisation in the middle of the project may all lead to exceeding the estimated budget and time.
- Delay in handing over the project on time due to issues like lack of human resourcedue to covid-19 which may lead to increase in wages of the current employees which in turn exceeds the estimated budget.
- Improper planning, some internal software bugs leading to calculation errors.
- Project team members quitting their role and finding a new replacement for that team member may lead to lack of human resources and delay in completion of the project.

- Eliminating smaller errors may lead to bigger problems at the later stage of the project development will lead to waste of time and requires more additional time and cost to rectify the errors.

2. DEFINITION OF SUCCESS & MANAGEMENT STRATEGY

This project will be successful, if the project deliverables are met considering all the factors and incorporating in the project without exceeding the funding and time provided by the stakeholders. On top of everything, if there is a proper management strategy, there comes success. The detailed management strategy is explained below to attain success which will help in achieving the 2025 strategy in which UNSW attaining educational excellence and knowledge exchange for social progress and economic development (Sections: A2, B3 in UNSW 2025 strategy).

Management Strategy

- Initial development of the project will be having some priorities to be constrained to budget and the time duration with acceptance from the stakeholders without any concerns.
- Estimating the cost considering every factors and scheduling accordingly based on the WBS and creating a Gantt chart and network diagram to proceed further on the development stage.
- Analyzing and figuring out, what are the requirements for the project and providing a detailed risk assessment based on the assumptions as well. To have a track record of all the risks encountered during the entire project, a register is maintained to keep control of everything.
- Having a record of all the meetings along with minutes of meeting with the team as well as the stakeholders will be helpful in the later stage if there are any issues arising and reporting updates timely to the stakeholders to make sure the project is proceeding in the right direction. So that, the stakeholders can give more suggestions if anything needs to be improvised.
- Providing necessary training to the team members if required to achieve better results with efficiency to achieve success as the entire project success is based on their inputs. For staff Management, a Human Resource Management Plan has been developed to maintain fair work and transparency.
- Setting up a separate medium of communication with all the team members to maintain transparency and to exchange or share their suggestions and ideas from everyone on the project. Providing the necessary resources required to complete the project and giving them proper deadlines for each task helps in completing the project on time without any delay.
- Taking surveys and getting suggestions from others opens doors to various solutions for different problems which will help in maintaining the reputation.

3. SCOPE STATEMENT

3.1 Background

Based on the UNSW 2025 Strategy, a virtual education environment called digital campus is planned to be built. It can collect and process campus information more effectively and no longer it will be limited by time and space. The main focus is on the digitalization of student societies planning to build a club platform named 'UNSW life, wherever you will be on the website. This project is designed to create a reliable online environment for all the UNSW students and can be used as a new organizational strategy for activities created by different student societies to reduce the difficulties in organizing various activities for students by stakeholders.

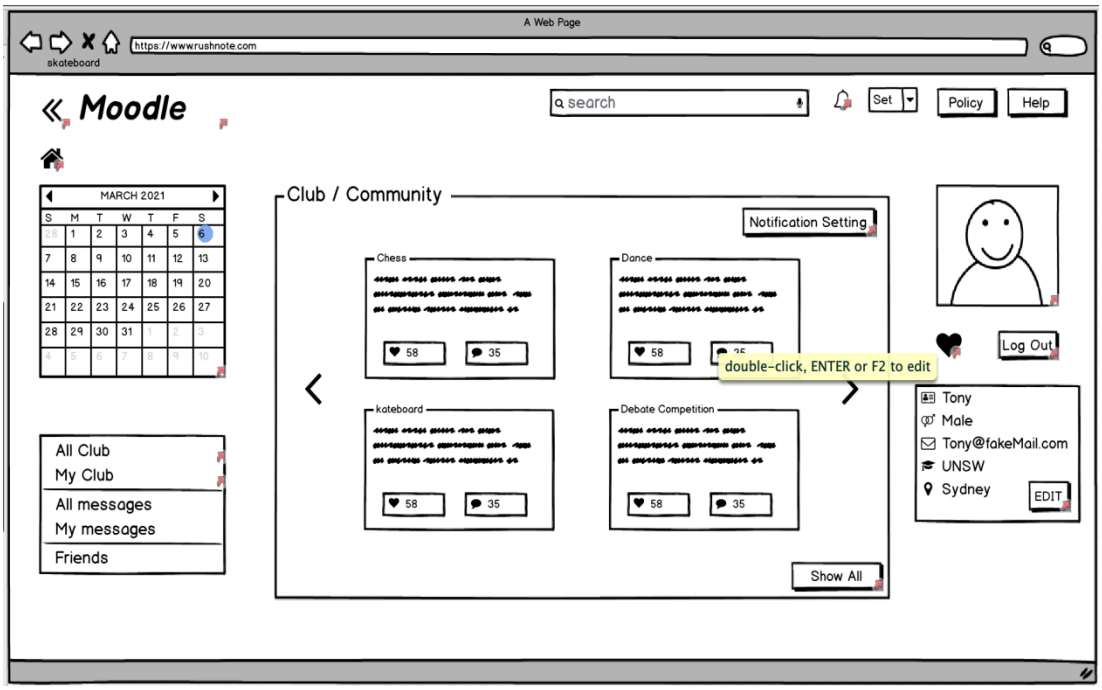


Fig 3.1.1 *The designed user interface*

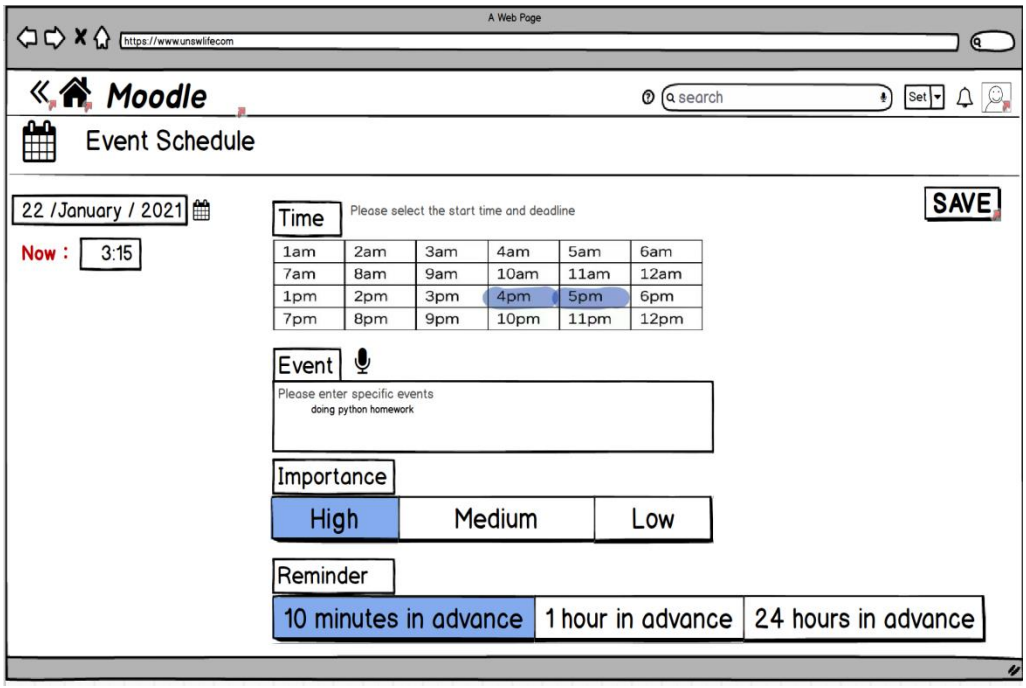


Fig 3.1.2 *The designed administrator's interface*

This website will be built in 12 weeks (about 3 months) and the budget is about 100,000 dollars. This system adopts client server structure. The client system completes the task of interacting with the students, club members and club managers, including the operation of user information and club information. The server system completes the task of data management. When the students, club members and club managers make the above operation request, the server system modifies corresponding database (user information and club information) and present the results to students, club members and club managers.

3.2 Project deliverables

System design	**Client system design** □ User information: information of student includes names, emails, z-id. In addition, club members also include membership information. □ GUI (Graphical User Interface): display the introduction of clubs and activities of clubs. □ Database: client system can access the UNSW student information system. Except student personal information. The database stores membership information. **Server system design** □ User information: information of club managers includes names, emails, z-id (if necessary). □ Database: club managers can upload and update the

	introduction and activities of clubs they manage. Club managers have the authority to manage user data, including adding and modifying the membership of club members.
Software testing	**Unit test** Testing the module of the software to find the coding error. • User information: check whether the system can add, modify and delete students, club members, club managers information correctly. • Club information: check whether the system can add, modify, delete clubs and activities information correctly. **Integration test** Testing the relevance of each module. • Users can receive the latest club information and activities information. • Club managers can receive the request from users, including adding and modifying the membership of club members. **System test** The system meets the software requirements. • Test the maximum number of clubs and club members. • Make sure that club and user information is not leaked.
User feedback	**User training and acceptance** • After using the client system, club managers, club members and students may have new requirements. Engineers develop new function or modify the function.
System maintenance	**Software maintenance plan** • For more students, club members and club managers to use the system, the system capacity can be expanded. • Evaluate the usage habits of students, club managers and club members, adjust the display of club information to improve user experience. **Maintenance report** • According to the actual modification of the system by the Engineer, modify the corresponding user manual (students, club members and club managers).

3.3 Project Exclusions

- In addition to students, club members and club managers, add new user types to database.
- Development of mobile application.

3.4 Project Assumptions

- The system development engineer can deliver the system on time and have enough resources.
- There are enough students, club members, club managers to test the server system.
- Sections of “Moodle” will be provided by UNSW for project promotions.
- Access to the database storing the information of the student’s name and mail address.
- There will be no force majeure that will cause the team members working on the project to be absent or quit and affect the progress of the project due to covid-19.

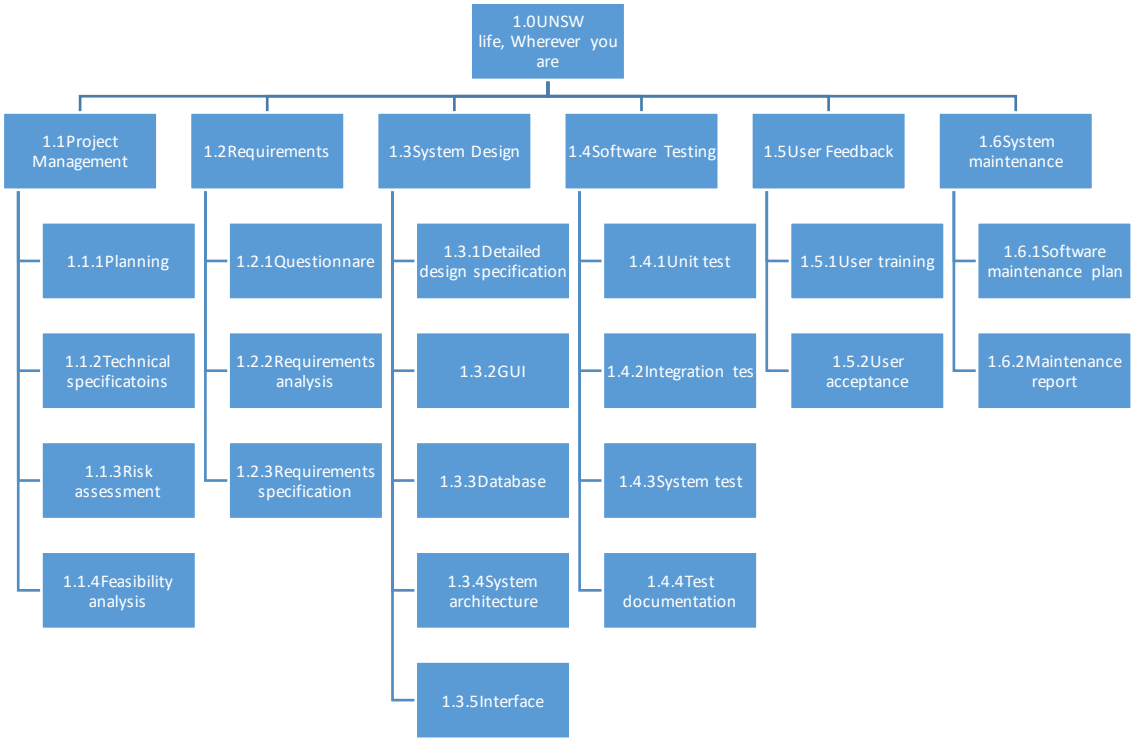
3.5 Project Constrains

- The cost of the entire project should be less than AUD 1000,000 including any contingencies.
- This project should be built in 12 weeks (about 3 months).
- Database access must comply with Australian Laws and regulations but not limited to privacy laws.

3.6 Technical Requirements

- Server device: 1.4Ghz or faster central processing unit, more memory, 256GB or more storage (SSD can reduce response time).
- Operation system: this system can install and run on windows7 or higher, macOS Catalina or Big Sur.

4 . WORK BREAKDOWN STRUCTURE



5. ESTIMATED TIME AND COST

In order to ensure the smooth progress of the project, this section will explain the cost of each part and the estimated time during the execution of the project. The plan was discussed by a group of five people, and finally implemented by the product manager. We will conduct the time and cost of the project based on the following three departments: General part, user module and management developer module. We will finally evaluate the effect of the plan through Earned Value Management (EVM) We will evaluate the performance of the project based on the following points: Cost Performance Index (CPI), Schedule Performance Index (SPI), and Cost Variance.

5.1 General part

In the general part, the budget includes hiring and training basic staff and paying their salaries, and the cost of website operation. The salary standard of employees will be determined in accordance with the salary standard of New South Wales. We reserve 10% of the cost to ensure that when there is a shortage of labour, the necessary manpower will be increased in time. Most of this part of the expenditure is implemented throughout the project. Due to the shortage of skilled workers caused by the COVID-19, we plan to increase the labor cost by 20% to deal with this problem. We also plan

to recruit more internships or part-time staff to make up for the shortage of skilled workers and rising labor costs. At the same time, we transfer some non-essential tasks to online completion to reduce the risk of people being infected with COVID-19

#	item	category	Work package cost($AUD)	Work Package contingency reserve(AUD$)
1	labor costs	general	2400	240
2	Website design and construction	administrators	20000	2000
3	Website testing and maintenance	administrators	10000	1000
4	Manager training	administrators	6000	600
5	Manager incentive bonus	administrators	5000	0
6	Discover user costs	users	10000	500
7	users incentive bonus	users	10000	0
8	User training	users	5500	1200
9	Offline events held	users	5000	2000
Total budget($ AUD)	$83,500	/	/	/

Table 5.1.1 *The estimation of the project costs*

#	item	category	Activity start	Activity end	Duration(Day)
1	labor costs	general	2021/2/15(week1)	2021/5/7(week4)	20
2	Website design and construction	administrators	2021/2/15(week1)	2021/3/15(week5)	28
3	Website testing and maintenance	administrators	2021/3/15(week5)	2021/3/31(week6)	7
4	Manager training	administrators	2021/4/1(week7)	2021/4/7(week8)	7
5	Manager incentive bonus	administrators	2021/4/7(week8)	2021/5/7(week12)	30
6	Discover user costs	users	2021/2/25(week3)	2021/3/31(week6)	35
7	users incentive bonus	users	2021/4/1(week7)	2021/5/7(week12)	37
8	User training	users	2021/4/1(week7)	2021/5/7(week12)	37
9	Offline events held	users	2021/4/1(week7)	2021/5/7(week12)	37

Table 5.1.2 *The estimation of the project time*

5.2 Users part

The user's expenditure mainly includes the following parts:

- Expenses for the promotion of our products at the initial stage of the project.
- Reward users who use and share with their classmates.
- The labour cost of training users to use the product.
- Costs related to holding events offline.
- Costs related to web design and testing of the user interface.

The user part of the web design and construction plan will be completed before April, and the user recruitment will also start in mid-March. When the system development is completed, it will enter the user training stage. The webpage will be fully launched from mid-to-late April, providing users with services for selecting community activities online.

5.3 Administrator part

The administrator expenditure mainly includes the following parts:

- Costs related to web design and testing of the administrator interface.
- The cost of encouraging managers to use the website.
- Training costs for site managers.
- Daily operating expenses and labour costs of the website.

The web design and development of the manager part will be started and completed simultaneously with the user part and will start in early April. The test work will be carried out slightly earlier than the user part, and the manager training will be completed in mid-April, and related activities will be launched. Starting from mid-April, the main expenses of the administrator will be the maintenance and operation of the website and addition of some new functions. At present, we have transferred part of the training work to online to deal with the shortage of personnel caused by covid19

6. PROJECT SCHEDULE

In order to successfully achieve this project in the future as well as efficiently use this estimated twelve weeks, our team would like to divide our works into following parts:

- Project Preparation
- Information collection
- Doing survey
- Initial test in UNSW
- Feedback Summary and Adjustments
- Potential investments attraction

6.1 The required works

According to the project time duration combined with the project budget, to successfully achieve this project, we have set up seven steps to finish this project:

- **Project Preparation**

In the first two weeks, we must finish deciding all the details about the PMP, writing a professional and completed PMP documents. Besides that, we also need to apply for the initial investment and ask for the permission for Moodle management and sending

emails to UNSW students. Moreover, setting up an organizational team is the basic requirement. We want to recruit some IT background technicians and few volunteers, also we need some arts and science background students to finish some further design tasks. Due to Covid-19 the recruitment period have to be extended. Also the amount of volunteer should be increased as we need to decrease the cost of human resources.

- **Information collection**

After we set up an organizational team, we must collect information and investigate the existing situation of the UNSW clubs, student societies, volunteer organizations etc. We want to clearly know their activity contents and organizational model as well as the possibility for operating these activities online.

- **Doing survey**

Based on the collected information of activities, we would like to select some available and meaningful activities for survey. We hope that we can send an email to every UNSW student and get as much as feedbacks. Then, select top 10 popular activities for the initial test.

- **Initial test in UNSW**

When we start operating our designed platform, we must try to organize some campus activities for publicity, but this time, the number of offline publicities have to be limited, the budget we were going to set on the publicity such as poster printing will be saved, also we want to add more online advertisements on existing popular social media platforms like Facebook and Instagram. We want to collect and analyze the user's feedback and focus on their comments to improvise.

- **Feedback Summary and Adjustments**

After we received significant feedback, we may need some adjustments related to the activity content, operational model and provided services. Also, we may need to make some adjustments in order to satisfy the targeted users.

- **Potential investments attraction**

When this platform has sufficient fixed users, we can regard this platform as an ideal information board and based on the managing permission, it is possible to look for some potential investment from some companies and societies.

6.2 Project Schedule Gantt Chart

Task names	start date	end date	duration
Project management	w-01-1	w-12-7	84 days
1. Preparation	w-01-1	w-02-7	14 days
1.1 Project overview	w-01-1	w-01-3	3 days
1.2 Project plan	w-01-2	w-01-3	2 days
1.3 PMP writing	w-01-3	w-01-7	5 days
1.4 Reflection	w-01-7	w-01-7	1 day
1.5 Investment application	w-02-1	w-02-5	5days
1.6 Apply for Moodle permission	w-02-1	w-02-5	5days
1.7 Apply permission for email transformation	w-02-1	w-02-5	5days
1.8 Build up a team	w-02-1	w-02-7	7 days
1.8.1 Technicists'recruitment	w-02-1	w-02-7	7 days
1.8.2 Volunteers'recruitment	w-02-1	w-02-7	7 days
1.8.3 Human resources adjustments	w-02-5	w-02-7	3 days
1.9 Website design	w-02-5	w-02-7	3 days
1.10 Advertisement design	w-02-5	w-02-7	3 days
2 Information collection	w-03-1	w-04-1	8days
2.1 Information provider	w-03-1	w-03-5	5days
2.1.1 Exist off-line activities	w-03-1	w-03-2	2days
2.1.2 UNSW clubs	w-03-2	w-03-2	1day
2.1.3 Students society (Arc)	w-03-3	w-03-3	1day
2.1.4 Employer and company	w-03-4	w-03-5	2days
2.1.5 Volunteer organization	w-03-4	w-03-5	2days
2.1.6 Exist network environment	w-03-5	w-03-5	1day
2.2 Activities' organization	w-03-6	w-04-1	3days
2.2.1 Activities' content	w-03-6	w-03-7	2days
2.2.2 Organizational model	w-04-1	w-04-1	1day
3 Survey	w-04-2	w-05-3	9days
3.1 Design survey forms (online and off-line)	w-04-2	w-04-2	1day
3.2 Survey implementation	w-04-2	w-05-1	7days
3.3 Online and off-line information aggregation	w-05-2	w-05-3	2days
3.4 Statistical findings	w-05-2	w-05-3	2days
3.5 Selecting the test activities	w-05-3	w-05-3	1day
4 initial test	w-05-4	w-07-4	14 days
4.1 Design poster, logo	w-05-4	w-05-4	1day
4.2 Volunteer trainning	w-05-4	w-05-6	3days
4.2 Applying website on Moodle	w-05-5	w-12-7	52days
4.3 Poster production and online publicity	w-05-5	w-07-4	13days
4.4 Organize publicity activities	w-05-7	w-07-4	12days
5 Feedback	w-05-5	w-07-9	19days
5.1 Monitor the background click rate and comments	w-05-5	w-07-5	14days
5.2 Investigate the users experience	w-06-5	w-07-5	7days
5.2.1 Invite the users to provide comments	w-06-5	w-07-5	7days
5.2.2 Sending online survey email	w-06-5	w-07-5	7days
5.3 Investigate the participation for different activiti	w-06-5	w-07-5	7days
5.4 Summary the feedback	w-07-5	w-07-6	2days
5.5 Discuss the adjustments' plan	w-07-7	w-08-2	3days
5.6 discuss with activities' organizations and net engi	w-07-7	w-08-2	3days
5.6.1 Adjust the website	w-07-7	w-08-2	3days
6 Absorb potential investments	w-08-3	w-12-7	33days
6.1 Monitor the activity participation rate	w-08-3	w-12-7	33days
6.2 Monitor the comments boards	w-08-3	w-10-3	14days
6.3 Enhance the prioritization	w-08-3	w-10-3	14days
6.4 Absorb the advertising investments	w-10-4	w-12-7	19days
6.5 Finding out the potential event organizer	w-10-4	w-12-7	19days

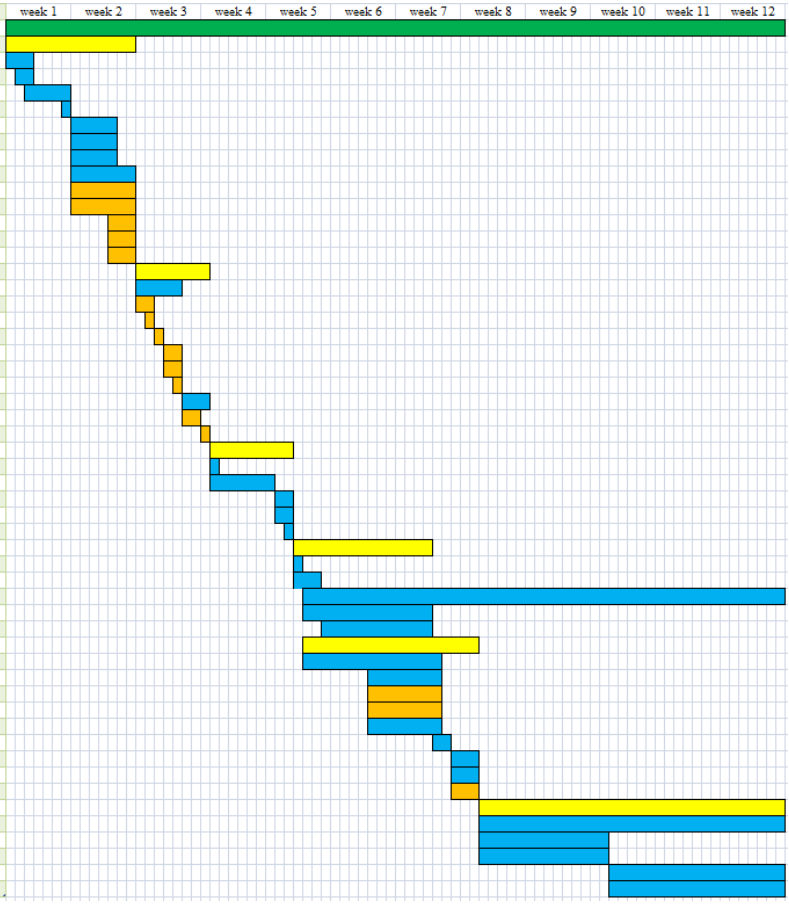
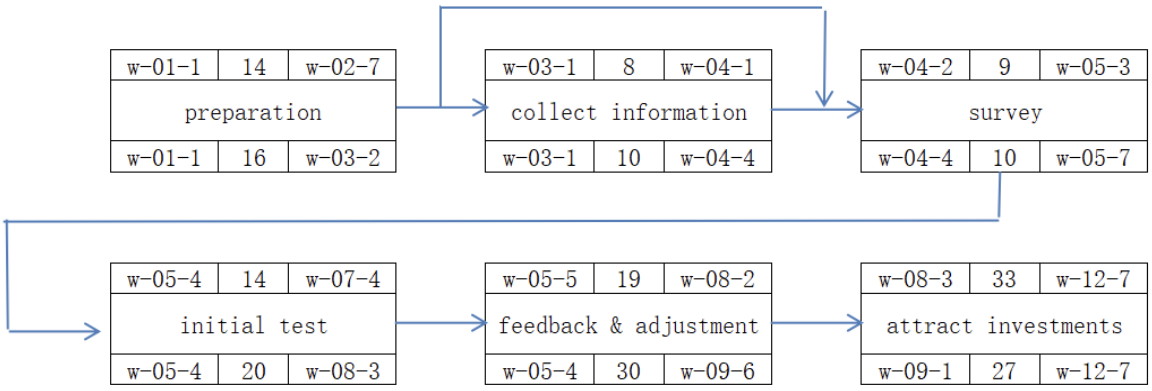


Fig 6.1 *project schedule Gantt Chart*

6.3 The Network Diagram

Fig.6.3 *Network diagram*



7. HUMAN RESOURCE PLAN

7.1 Team Composition

Based on the estimated time duration, the potential works we must finish is setting up a professional operational team to help achieving this project.
At first, the core person is the project manager. It is required to select a team leader to lead the several teams. Besides, the general manager operations, the IT background team for technical tasks and HR management team who is responsible for some recruitment, volunteer training related works.

7.2 Position Description and Responsibility

In order to correctly evaluate the ability of the candidates and their matching degree with the position, we will interview and train the candidates according to the following aspects: Job responsibilities, applicant's background and work experience, skills, etc.

Table 7.1 *the position description, skills and responsibilities*

Position	Candidate's Background	Skills	Responsibilities
Project Manager	MS/PhD degree in Management or relevant major; 3 years + group management experience	Familiar with the responsibilities of various tasks in the team. Effective communication skills and ability to deal with emergencies.	Responsible for the task assignment of managing team. Responsible for tracking the progress of various tasks and adjusting the team structure. Have online training experience
System Test Volunteers	Students from UNSW or other universities; Club managers and	Explore the various interface functions of the website.	Clearly describe the emergence process of bugs, and identify similar problems of current test

	club members.		problems. □ Give product suggestions and feedback.
Web Interface developer and Intern	MS/Bachelor's degree in Computer Science, IT or relevant major; 1 years+ web develop experience.	□ Familiar with various mainstream frameworks at the front and back ends. □ Familiar with various development tools and have good programming skills. □ Have good interpersonal skills and teamwork skills.	□ Responsible for the development and testing of user and manager interface. □ Responsible for daily maintenance and operation of the website, as well as website testing. □ Have online training experience
Technical Lead and Technical Support	MS/PhD's degree in Computer Science, IT or relevant major; 3 years+ web developer experience.	□ Experience in project development, able to independently complete the architecture, design of the project.	□ Responsible for leading the team to complete the overall web page development. □ Responsible for interviewing and recruitment of technical candidates for web development.
Product Operations Manager and Intern	MS/bachelor's degree in management or relevant major; 1 years + group management experience.	□ Good interpersonal, communication and teamwork skills. □ Familiar with MS office	□ Responsible for planning and operation of daily activities. □ Responsible for recruiting new users and promoting our

		such as word, excel, ppt, etc.	website.
Human Resources Management Team	MS/bachelor's degree in management or relevant major; 1 years + group management experience	Familiar with various jobs within the company.	Responsible for recruitment and training of other positions. Responsible for various tasks managed by the management team.

7.3 Organization Chart

The organization structure is shown in the figure below. We will complete team management and work report according to the following structure.

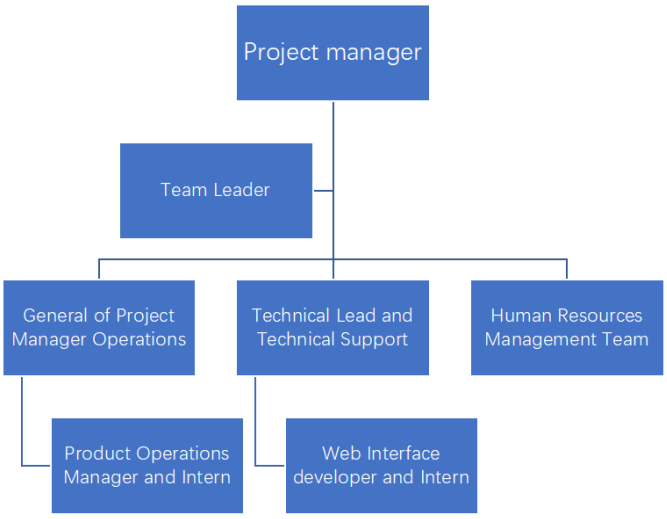


Fig 7.1 *The organization chart*

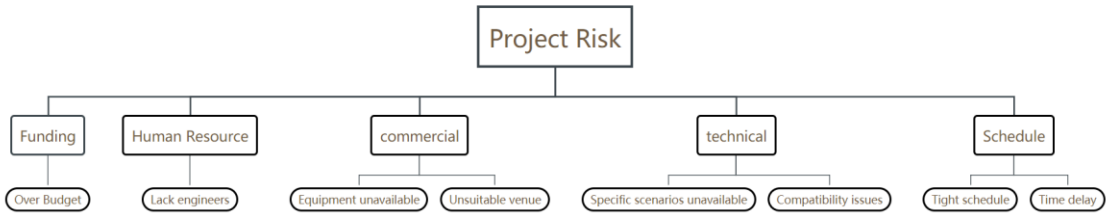
8. RISK MANAGEMENT PLAN

8.1 Roles and responsibility

- Risk Identification: Project Team
- Risk Assessment: Project Manager
- Risk Response: Project Manager & Project Technology Team
- Risk Reporting: Project Manager

8.2 Risk identification

Fig 8.1 *The RBS chart*



Here are the risk descriptions:

Table 8.1 *The risk description*

Categories	Risk ID	Risk Name	Description
Funding	1	Over budget	The cost of implementing the function exceeds the project budget. Due to COVID-19, a shortage of staff leads to the increase of salary.
Human resource	2	Lack of engineers	Too difficult to find professional full-stack developer.
Commercial	3	Equipment unavailable	Not sure about or difficulty in equipment procurement.
	4	Unsuitable venue	There is no suitable venue, or the venue conditions cannot meet the demand.
technical	5	Specific scenarios unavailable	Specific activity scenarios are difficult to implement online.
	6	Compatibility issues	The page is not compatible with some hardware or some versions are not compatible with the software.
Schedule	7	Tight schedule	Task schedule is too tight.
	8	Time delay	Time delay caused by equipment (not working).

8.3 Risk Assessment and control

Based on the Probability and impact table, the project team made the Risk Assessment Matrix blow:

Table 8.2 *Probability and impact table*

value	Probability	Impact
1	Highly likely (80%-100%)	Negligible
2	Likely (60%-80%)	Minor
3	Moderate (40%-60%)	Moderate
4	Unlikely (20%-40%)	Critical
5	Very unlikely (0%-20%)	Disaster

Table 8.3 *Risk Assessment Matrix*

Probability / Impact	1	2	3	4	5
5	Moderate	Moderate	High	High	High
4	Moderate	Moderate	Moderate	High	High
3	Low	Moderate	Moderate	Moderate	High
2	Low	Low	Moderate	Moderate	Moderate
1	Low	Low	Low	Moderate	Moderate

According to risks of being identified. we have formulated detailed responses to make the project proceed smoothly, which are outlined below:

Table 8.4.1 *Over budget*

No.	Risk	owner	Current Risk			Residual Risk		
1	Over budget	Project Manager	P	I	T	P	I	T
			4	5	20	2	3	6

Controlling the flow of funds from the beginning of the project. For the Cost of equipment, employment and venue rental, general market research must be carried out while coordinating the time to keep the expenses within a reasonable range. Funds must pass financial review before they can be used. The PM team use online training and telecommuting to reduce labor costs.

Table 8.4.2 *Lack of Engineers*

No.	Risk	owner	Current Risk			Residual Risk		
2	Lack of Engineers	Technical Lead	P	I	T	P	I	T
			3	5	15	1	3	3

Extensive recruitment information would be posted by Human Resource Management team on the Internet. Suitable developers will be screened out according to the applicant's abilities and expected salary.

Table 8.4.3 *Equipment unavailable*

No.	Risk	owner	Current Risk			Residual Risk		
3	Equipment unavailable	Project manager	P	I	T	P	I	T
			3	4	12	1	3	3

Project manager should have communication with Technical Lead and Technical Support, analyzing the requirement of equipment and completing the shopping list. Considering market and regional restrictions, a suitable way need to be found to meet all equipment requirements.

Table 8.4.4 *Unsuitable venue*

No.	Risk	owner	Current Risk			Residual Risk		
4	Unsuitable venue	Project manager	P	I	T	P	I	T
			4	4	16	2	4	8

First, Project manager should confirm the demand with technical lead. After screening out venues online, there will be on-site inspections to assess whether the facility meets the standards of project requirements. Appropriately, labs in UNSW could be considered.

Table 8.4.5 *Specific scenarios unavailable*

No.	Risk	owner	Current Risk			Residual Risk		
5	Specific scenarios unavailable	PM team	P	I	T	P	I	T
			5	4	20	3	2	6

Product Operations Manager (POM) should divide the activities into various categories. Then, Technical Lead and Technical Support will Set up different activity scenarios for each category. POM could collect feedbacks from surveying stakeholders and confirm the specific plan on the details of each scenario module by meeting with stakeholders.

Table 8.4.6 *Compatibility issues*

No.	Risk	owner	Current Risk			Residual Risk		
6	Compatibility issues	Web Interface developer	P	I	T	P	I	T
			4	4	16	2	3	6

Web Interface developer should be responsible for the entire process. Using all mainstream hardware on the market for compatibility testing. Once a mismatch is found, report it to the project manager and Technical Lead. Technical team should

make corresponding modifications according to the report.

Table 8.4.7 *Tight schedule*

No.	Risk	owner	Current Risk			Residual Risk		
7	Tight schedule	Project manager	P	I	T	P	I	T
			3	3	9	1	2	2

The project manager should leave a short period of time when making the itinerary to prevent unexpected situations during the project. Two meetings are required every week to understand the specific progress of the project and ensure the overall progress of the project. When a certain part is found to be delayed, the project manager should arrange a reasonable amount of paid overtime according to the length of the extension.

Table 8.4.8 *Time delay*

No.	Risk	owner	Current Risk			Residual Risk		
8	Time delay	PM Team	P	I	T	P	I	T
			2	3	6	1	2	2

Firstly, the technical team conducts stability tests on the purchased equipment. During the project development, technicians are obliged to maintain the equipment from damage caused by humans. Finally, our team should prepare spare equipment in advance for emergency situations.

Table 8.4.9 *A shortage of skilled staff*

No.	Risk	owner	Current Risk			Residual Risk		
9	A shortage of skilled staff	PM team	P	I	T	P	I	T
			5	4	20	3	3	9

When the PM team encounters the issue of a shortage of skilled staff in the market, the PM team will provide online training to make employees more skilled and remote office to let the best talents from all over the world participate in our projects, which could reduce our labor costs and improve fault tolerance.

9. REFERENCES

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