



**UTM**  
UNIVERSITI TEKNOLOGI MALAYSIA

**FACULTY OF COMPUTING**  
UTM Johor Bahru

## **Semester II 2023/2024**

**Subject : System Analysis and Design (SECD2613)**

**Section : 08**

**Task : Phase 1- Project Proposal and Planning (12%)**

**Due : 20 April 2024**

**Lecturer : Dr CIK SUHAIMI BIN YUSOF**

**Group : 08**

**URL of the GitHub Repository:**[https://github.com/Ramimoha1/-Project1\\_SAD\\_20232024](https://github.com/Ramimoha1/-Project1_SAD_20232024)

	<b>Name</b>	<b>Matric Number</b>
1	RAMI YASSEIN ELTAYEB MOHAMED	A23CS0022
2	OW YEE HAO	A23CS0261
3	CHANG WEI LAM	A23CS0212
4	YAP JIA XIN	A23CS0199

## Table of Contents

1.0 Introduction.....	3
2.0 Background Study .....	4
3.0 Problem Statement.....	5
4.0 Proposed Solutions.....	6-10
5.0 Objective .....	11
6.0 Scope	
6.1 Project Scope .....	12-13
7.0 Project Planning	
7.1 Human Resource.....	14
7.2 Work Breakdown Structure (WBS).....	15
7.3 Pert Chart .....	16-17
7.4 Gantt Chart.....	18
8.0 Benefit and Summary of Proposed System.....	19

## **1.0 Introduction**

Nowadays , technology has become a dominant part of everyone's life . making our life more productive and easier . So it would not come to anyone's surprise that the world is moving towards technological advancement and so is our university . UTM's future campus vision is just an example of the effort being put towards achieving this goal .

However, despite the advancements in technology, students at our campus continue to face challenges in accessing timely information about various clubs and societies. The current methods of communication, such as campus group messages, are full of commercial spam, making it challenging for students to find information regarding clubs , events and other co-curricular activities. Additionally, many clubs lack exposure, further exacerbating the issue and hindering students' ability to explore and engage in extracurricular activities effectively.

To address these challenges, our team has embarked on a project planning approach to develop innovative solutions that enhance the accessibility and visibility of club and society information for all students . By leveraging project planning methodologies, we aim to develop a user-friendly platform that offers students in UTM , seamless access to a wealth of club information, empowering them to discover, explore, and engage in extracurricular activities with ease. Additionally, our platform simplifies the lives of organizers by streamlining event registration and certificate awarding processes, all within one cohesive space.

In this proposal, we will outline our plans for the development of the current system, focusing on enhancing user experience, improving information channels, and increasing engagement among students. Our approach will involve conducting thorough research to understand the specific needs and preferences of our target audience. We will then design and implement features that address these needs, ensuring that the platform is intuitive, user-friendly, and effective in facilitating communication between clubs and students.

## **2.0 Background Study**

Khalid is a new international student coming all the way from Egypt to study in UTM , he is so excited to meet new people and try out all the numerous activities that the university has to offer , but to his surprise , instead of easily finding activities that interests him in an organized and fast way , he got bombarded with a flood of spam advertisements and posters that are mostly uninteresting to him . Overwhelmed with these spam messages , he decided against fighting his way through the pile of random spam advertisements .

Khalid is not alone , all students whether junior or senior , face this exact problem the moment they step foot in the university and many have decided to share their frustration online and also address that there could be a possible solution to this .. And indeed there is.

Recognizing the pressing need to overhaul the current system of communication and engagement, our dedicated team has embarked on a mission to develop a comprehensive platform that addresses these challenges head-on. By harnessing the power of technology and innovative thinking, this initiative aims to streamline the process of discovering and participating in club and society activities, making it easier for students like Khalid to find their niche and thrive within the campus community.

In the forthcoming sections of this proposal, we will outline our approach to tackling this issue, through the introduction of Clubhub , and also detailing our strategies for developing this user-friendly platform that caters to the diverse needs of UTM students. Through collaborative efforts and a steadfast commitment to enhancing the student experience, we aspire to usher in a new era of extracurricular engagement at UTM, where every student has the opportunity to explore their passions and forge lasting connections within the campus community.

### **3.0 Problem Statement**

#### **1. Problem 1: Campus group messages are flooded with spam**

Event details obtained from social media groups are often time consuming and unsatisfactory as it is often flooded with spams and advertisements, causing students to miss some of the important event promotions. Too many social media groups that are requested for students to join shares the same information and spam messages that causes students to take much time in identifying useful information.

#### **2. Problem 2: Uncentralized platform for communication of information**

Many school announcements and information are communicated through the same social media group that is being used as the means to promote club events, at the same time advertising for student businesses. This creates a confusing situation for students when they come across different types of information in the same group and makes it difficult to trace back certain useful information about club events in the future.

#### **3. Problem 3: Lack of exposure to niche clubs**

As information fails to reach students on a daily basis through social media groups, it is almost certain that a lot of smaller clubs and societies might not be able to get much event information out when they're hosting an event. The lack of exposure for these clubs is also a key reason why many students are not able to join the events hosted around campus as they are not aware of the existence of these clubs.

#### **4.0 Proposed Solutions**

To address the identified challenges faced by students in accessing timely and relevant information about campus clubs and societies, we propose the development of a mobile application designed specifically for streamlining communication and enhancing engagement within the campus community. This application will serve as a centralized platform, bringing together all club-related information, events, and announcements into one convenient location. By providing a comprehensive hub for students to access club details, activities, and announcements, the application aims to reduce the burden of navigating through multiple social media groups and channels, ultimately reducing the likelihood of missing important event promotions.

The proposed solution includes several key features aimed at optimizing user experience and encouraging active engagement in extracurricular activities. Firstly, the mobile application will boast a user-friendly interface, allowing clubs and societies to effortlessly publish event details while ensuring that users receive only relevant and non-spammy information. By prioritizing ease of use and accessibility, the application aims to enhance overall user engagement and foster a sense of community within the campus.

Additionally, each club or society will have its own dedicated section within the application, enabling them to showcase their history, purpose, membership details, and past activities. This personalized approach not only empowers the students to make informed decisions about which clubs to join but also fosters a deeper understanding and appreciation of the diverse array of opportunities available on campus.

Furthermore, the application will feature a repository of past event records, including photos, reviews, and participant feedback. By providing access to this valuable information, students can gain insights into previous events and activities, aiding them in making informed decisions about future participation and engagement.

To ensure the sustainability and viability of the proposed solution, we recommend implementing profit-making approaches such as commission from registration fees, promotional charges, and ticket sales commission. These revenue streams will not only offset the costs associated with maintaining and operating the application but also provide funding for future enhancements and developments, ensuring the longevity and success of the platform in supporting the campus community's extracurricular endeavors.

## **Technical feasibility**

The proposed mobile application can feasibly be developed using existing mobile app development tools, frameworks, and skilled developers. To ensure the long-term viability and effectiveness of the application, several considerations must be addressed. Firstly, the application will require a strong database system to manage user data, club information, and event details efficiently. Additionally, implementing a sorting system within the app will enhance user experience by allowing users to organize and filter club information according to their preferences. Furthermore, measures for data security, scalability, and maintenance will be essential to safeguard user data, accommodate potential growth, and ensure ongoing performance and reliability of the application.

## **Operational Feasibility**

The operational feasibility of our proposed mobile application hinges on the availability and capability of human resources to operate it once it's developed and installed. Smooth operation of the database system and sorting functionality demands ongoing maintenance by IS support. Additionally, we will provide a demonstration video and support to help the students navigate the app effectively. Continuous monitoring and feedback mechanisms will be essential for identifying and addressing any operational challenges, ensuring the application's ongoing effectiveness and user satisfaction.

## **Economic Feasibility(CBA)**

The economic feasibility of our project depends on the careful evaluation of its estimated costs and potential benefits. We need to consider expenses related to hardware, software development, maintenance, marketing, and support in relation to the anticipated revenue from registration fees, promotional charges, event commissions, and sponsored content. By conducting a comprehensive analysis, including calculations of Present Value (PV) and Profitability Index (PI), we can determine if our project is financially viable. This assessment is crucial to ensuring that our project aligns with our organizational goals and demonstrates responsible financial management.

<b>Assumptions</b>	
<b>Discount rate</b>	<b>10%</b>
<b>Sensitivity Factor (Cost)</b>	<b>1.1</b>
<b>Sensitivity Factor (Benefit)</b>	<b>0.9</b>
<b>Annual change in production costs</b>	<b>7%</b>
<b>Annual change in benefits</b>	<b>5%</b>

<b>Estimated Costs</b>	
<b>Hardware</b>	<b>RM10000</b>
<b>Software Development</b>	<b>RM 7000</b>
<b>Maintenance</b>	<b>RM 3000 per year</b>
<b>Marketing and Promotion</b>	<b>RM 3000 per year</b>
<b>IS Support</b>	<b>RM 4000 per year</b>

<b>Estimated Benefits</b>	
<b>Commission(Registration fees/Certificate generation fees)</b>	<b>RM12000 per year</b>
<b>Promotional charges</b>	<b>RM 7500 per year</b>
<b>Club Event Commission</b>	<b>RM 9000 per year</b>
<b>Sponsored Content</b>	<b>RM 5000 per year</b>



## **Calculate CBA – Costs**

<b>Costs</b>	<b>Year 0</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>
<b>Development Costs</b>				
<b>-Hardware</b>	<b>11 000</b>			
<b>-Software Development</b>	<b>7 700</b>			
<b>Total</b>	<b>18 700</b>			
<b>Production Costs</b>				
<b>- Maintenance</b>		<b>3 300</b>	<b>3 531</b>	<b>3 778</b>
<b>-Marketing and Promotion</b>		<b>3 300</b>	<b>3 531</b>	<b>3 778</b>
<b>-IS Support</b>		<b>4 400</b>	<b>4 708</b>	<b>5 038</b>
<b>Annual Production Costs</b>		<b>11 000</b>	<b>11 770</b>	<b>12 594</b>
<b>(Present Value)</b>		<b>10 000</b>	<b>9 727</b>	<b>9 462</b>
<b>Accumulated Costs</b>		<b>28 700</b>	<b>38 427</b>	<b>47 889</b>

## **Calculate CBA-Benefits, Gain/Loss and Profitability Index**

<b>Benefits</b>	<b>Year 0</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>
<b>Commission</b>		<b>10 800</b>	<b>11 340</b>	<b>11 907</b>
<b>Promotional Charges</b>		<b>6 750</b>	<b>7 088</b>	<b>7 442</b>
<b>Club Event Commission</b>		<b>8 100</b>	<b>8 505</b>	<b>8 930</b>
<b>Sponsored Content</b>		<b>4 500</b>	<b>4 725</b>	<b>4 961</b>
<b>Total</b>		<b>30 150</b>	<b>31 658</b>	<b>33 240</b>
<b>(Present Value)</b>		<b>27 409</b>	<b>26 164</b>	<b>24 974</b>
<b>Accumulated Benefits</b>		<b>27 409</b>	<b>53 573</b>	<b>78 547</b>
<b>(Present Value)</b>				
<b>Gain or Loss</b>		<b>(1 291)</b>	<b>15 146</b>	<b>30 658</b>
<b>Profitability Index</b>	<b>1.64</b>			

$$\text{Profitability Index} = 30\,658 / 18\,700$$

$$= 1.64$$

Since the Profitability Index is 1.64, showing that it is a good investment because its index is greater than 1.

## **5.0 Objectives**

The Objective of our project is:

- To enhance accessibility to comprehensive club and society information.
- To streamline communication between students and clubs/societies.
- To increase student engagement in extracurricular activities.
- To promote the diversity of clubs and societies available on campus.
- To improve overall user experience and facilitate effective communication.

These objectives are aimed at addressing the identified challenges and improving the overall experience for students involved in extracurricular activities on campus. By enhancing accessibility, streamlining communication channels, and promoting diversity, our project seeks to create a more inclusive and engaging environment for students to explore and participate in various clubs and societies. Through effective implementation of these objectives, we aim to foster a stronger sense of community and support the holistic development of students beyond their academic pursuits.

## **6.0 Scope of the Project**

Clubhub is a centralized platform designed to streamline the process of discovering, advertising, and participating in events organized by various clubs and facilities across the university campus. The platform aims to simplify event exploration for students, reduce spam advertisements on social media, and provide a more organized approach to event management.

Core Features of clubhub:

Event Discovery:

- Students will have access to a centralized hub where they can explore a wide range of events organized by clubs and facilities.
- Events will be categorized based on genres such as music, cultural, and sports, allowing users to easily find events of interest.

Filter Options:

- Users can utilize various filter options to refine their event search based on criteria such as date, time, ticket costs, and genre.
- Filter options will also enable students to find all upcoming events hosted by a specific club or faculty.

Additional Features and Enhancements:

In addition to the core functionalities, Clubhub will include the following features and enhancements:

Event Registration and Attendance Tracking:

- Students can register for events directly through Clubhub, facilitating seamless attendance management.
- Upon attending an event, participants will receive digital certificates of participation and university merit points to recognize their engagement.

#### Enhanced Club and Facility Profiles:

- Clubs and facilities will have dedicated profiles on Clubhub to showcase their activities, upcoming events, and contact information.
- Club administrators will have access to an interface for managing their profiles, updating event listings, and tracking attendance.

#### Integrated Ticketing System:

- Clubhub will feature a built-in ticketing system for events that require ticket purchases, allowing clubs to manage attendance and ticket sales efficiently.
- Students can purchase event tickets securely through the platform, with support for various payment methods.

#### User-Friendly Interface:

- Clubhub will prioritize user experience with an intuitive and visually appealing interface.
- Customizable filters and search options will enable students to easily discover events tailored to their preferences.

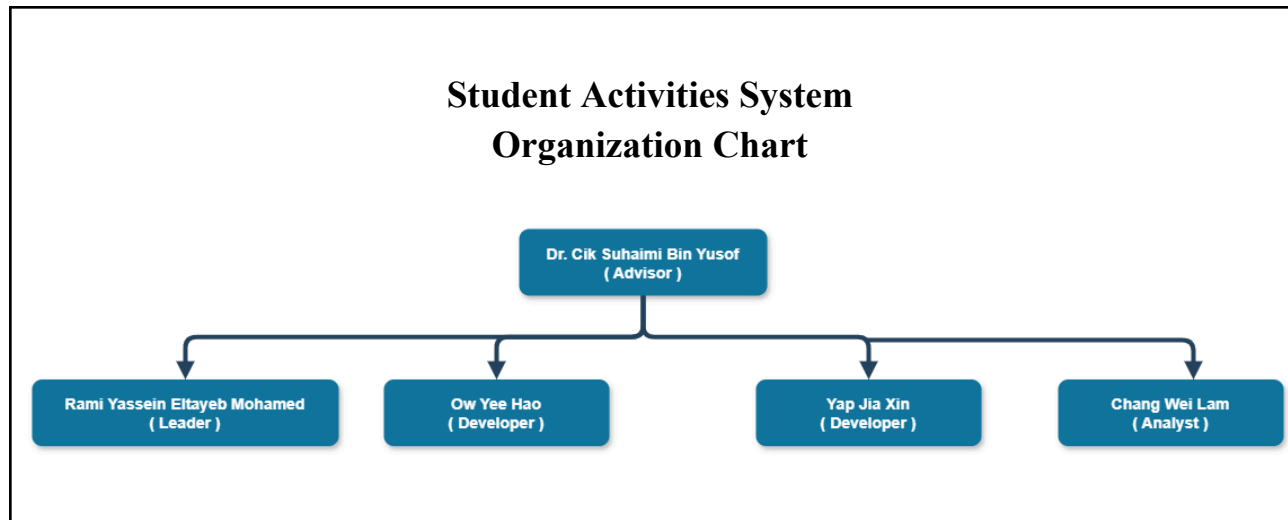
#### Comprehensive Support and Feedback:

- Clubhub will provide dedicated support channels for students and club administrators, offering assistance with account management and event registration.
- Feedback mechanisms will be integrated to gather input from users and improve platform functionality.

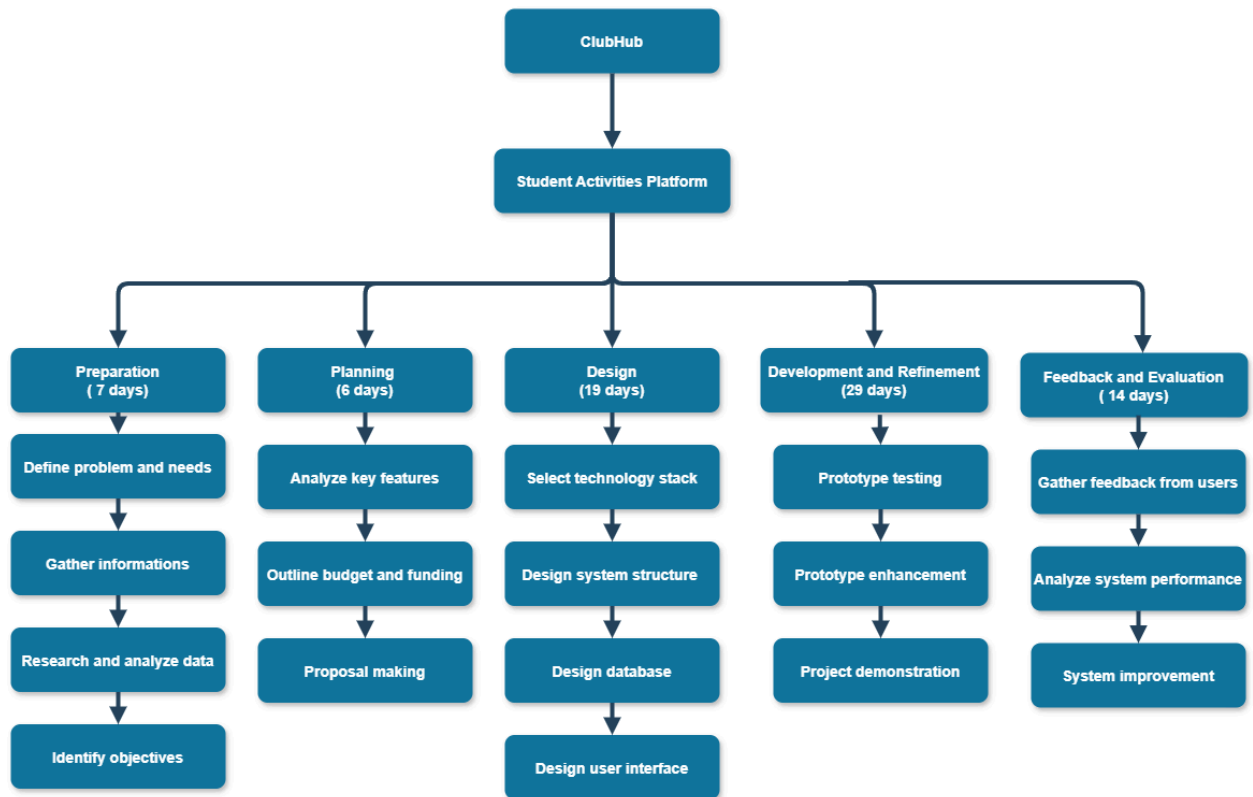
By incorporating these features and enhancements, Clubhub aims to revolutionize campus event management, fostering a vibrant community of engaged students and clubs.

## 7.0 Project Planning

### 7.1 Human Resource

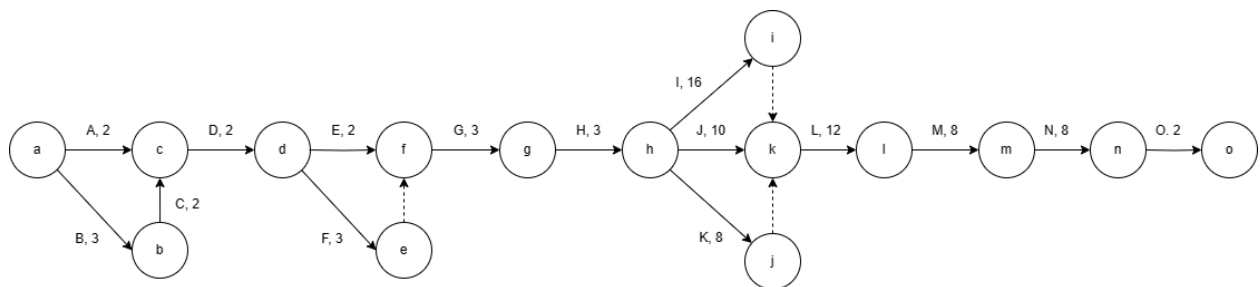


## 7.2 Work Breakdown Structure (WBS)



### 7.3 PERT Chart (based on WBS)

Activity		Predecessor	Duration(day)
A	Define problem and need	-	2
B	Gather information	-	3
C	Research and analyze data	B	2
D	Identify objectives	A, C	2
E	Analyze key features	D	2
F	Outline budget and funding	D	3
G	Proposal making	E, F	3
H	Select technology stack	G	3
I	Design system structure	H	16
J	Design database	H	10
K	Design user interface	H	8
L	Develop prototype	I, J, K	12
M	Prototype testing	L	8
N	Prototype enhancement	M	8
O	Prototype demonstration	N	2





Path 1: A - D - E - G - H - J - L - M - N - O

Length:  $2 + 2 + 2 + 3 + 3 + 10 + 12 + 8 + 8 + 2 = 52$

Path 2: A - D - E - G - H - I - L - M - N - O

Length:  $2 + 2 + 2 + 3 + 3 + 16 + 12 + 8 + 8 + 2 = 58$

Path 3: A - D - E - G - H - K - L - M - N - O

Length:  $2 + 2 + 2 + 3 + 3 + 8 + 12 + 8 + 8 + 2 = 50$

Path 4: A - D - F - G - H - J - L - M - N - O

Length:  $2 + 2 + 3 + 3 + 3 + 10 + 12 + 8 + 8 + 2 = 53$

Path 5: A - D - F - G - H - I - L - M - N - O

Length:  $2 + 2 + 3 + 3 + 3 + 16 + 12 + 8 + 8 + 2 = 59$

Path 6: A - D - F - G - H - K - L - M - N - O

Length:  $2 + 2 + 3 + 3 + 3 + 8 + 12 + 8 + 8 + 2 = 51$

Path 7: B - C - D - E - G - H - J - L - M - N - O

Length:  $3 + 2 + 2 + 2 + 3 + 3 + 10 + 12 + 8 + 8 + 2 = 55$

Path 8: B - C - D - E - G - H - I - L - M - N - O

Length:  $3 + 2 + 2 + 2 + 3 + 3 + 16 + 12 + 8 + 8 + 2 = 61$

Path 9: B - C - D - E - G - H - K - L - M - N - O

Length:  $3 + 2 + 2 + 2 + 3 + 3 + 8 + 12 + 8 + 8 + 2 = 53$

Path 10: B - C - D - F - G - H - J - L - M - N - O

Length:  $3 + 2 + 2 + 3 + 3 + 3 + 10 + 12 + 8 + 8 + 2 = 56$

**Path 11: B - C - D - F - G - H - I - L - M - N - O**

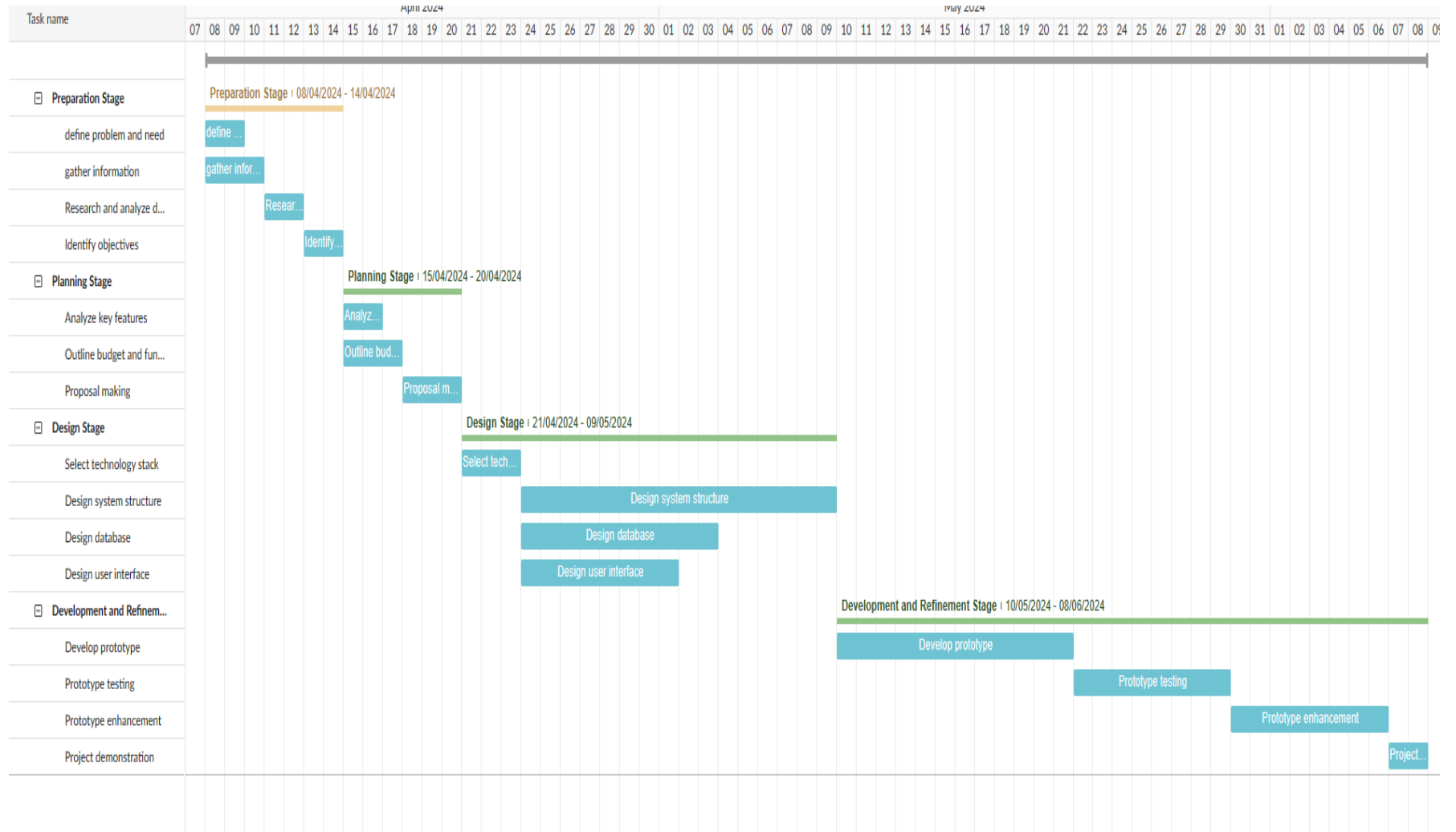
**Length:  $3 + 2 + 2 + 3 + 3 + 3 + 16 + 12 + 8 + 8 + 2 = 62$**

Path 12: B - C - D - F - G - H - K - L - M - N - O

Length:  $3 + 2 + 2 + 3 + 3 + 3 + 8 + 12 + 8 + 8 + 2 = 54$

Since the critical path is the longest path through the network diagram, Path 11 is the critical path for this Project.

## 7.4 Gantt Chart



## **8.0 Benefit and Overall Summary of Proposed System**

Clubhub is a transformative platform designed to revolutionize campus life at UTN by providing students with a centralized hub for discovering and participating in a diverse range of events organized by clubs and facilities. With streamlined event management features such as event registration, attendance tracking, and integrated ticketing, clubs can efficiently organize and promote their activities, leading to increased engagement and participation. Through a comprehensive feasibility study and profitable Cost-Benefit Analysis (CBA) indicating a favorable investment return, Clubhub is financially viable, with multiple income streams including but not limited to promotional fees , commissions and sponsorship , this therefore ensures the sustainability. With a development timeline estimated at three months, Clubhub emphasizes thorough research and rigorous testing to ensure a seamless launch without technical issues.

By leveraging technology to address campus-wide challenges and enhance the overall campus experience, Clubhub contributes to UTM's vision of a future-ready campus that fosters student engagement and academic excellence.

## Repository Snapshot:

### Main page of the Repository : -

The screenshot shows the main page of a GitHub repository named "Project1\_SAD\_20232024". The repository is public and has 1 branch and 0 tags. The README file is the most recent commit, updated 2 days ago by Jiaxin061. The repository description is "System Analysis and Design subject's group project". The README content includes the project title, a description of CLubHub, a list of contributors, and links to the Kanban Board and Proposal.

**Project1\_SAD\_20232024**

CLubHub

A user-friendly platform that offers students in UTM, seamless access to a wealth of club information, empowering them to discover, explore, and engage in extracurricular activities with ease.

Prepared By

Name	Matric Number
RAMI YASSEIN ELTAYEB MOHAMED	A23CS0022
OW YEE HAO	A23CS0261
CHANG WEI LAM	A23CS0212
YAP JIA XIN	A23CS0199

Finding

[Kanban Board](#)

[Proposal](#)

## Kanban :-

The screenshot shows a Kanban board for the repository "Project1\_SAD\_20232024". The board is divided into four columns: "TO DO", "Done", "In progress", and "In review". The "In progress" column contains a list of tasks, each with a draft icon and a description.

**Project1\_SAD\_20232024**

Filter by keyword or by field

**TO DO** (0/5) (Estimate: 0)

This item hasn't been started

**Done** (0/5) (Estimate: 0)

This is ready to be picked up

- Draft Create the WBS for the system
- Draft decide on the system module
- Draft distribute the tasks for writing the proposal report.
- Draft discuss and finalize the features of the system
- Draft writing the introduction, problem statement, background study and summary for the proposal report
- Draft writing the proposed solution of the system (Feasibility study, CBA)
- Draft creating the PERT Chart and Gantt Chart for the system
- Draft finalize the proposal report
- Draft edit GitHub repository and add a kanban.

**In progress** (0/5) (Estimate: 0)

This is actively being worked on

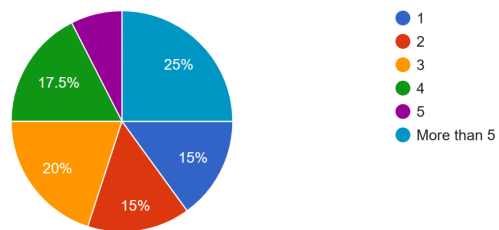
**In review** (0/5) (Estimate: 0)

This item is in review

## Result of an online questionnaire conducted to gather information :-

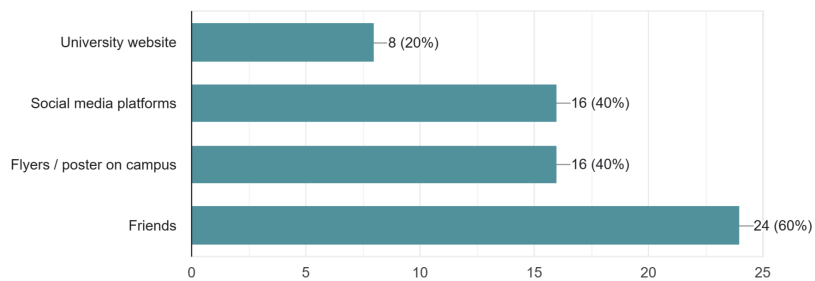
If yes, how many extracurricular activities are you involved in current semester?

40 responses



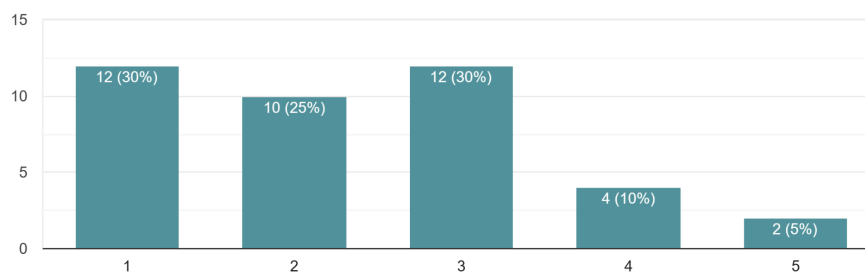
How do you currently find information about club activities and events on campus?

40 responses



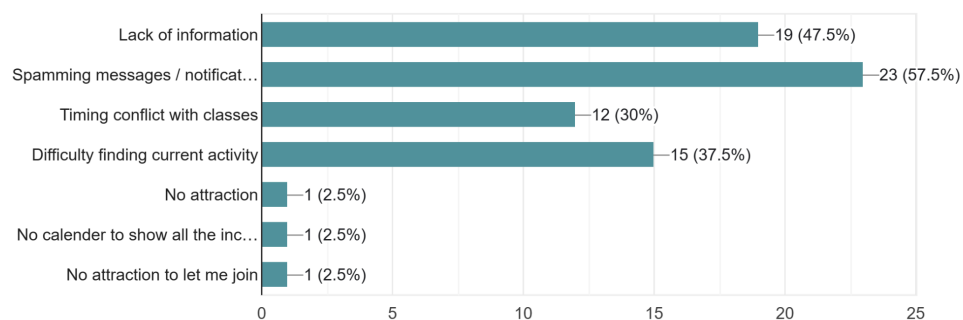
How would you rate the current extracurricular system in your university?

40 responses



What obstacles have you faced while trying to search for extracurricular activities to join?

40 responses



If there was a brand-new system to organize everything related to extracurricular activities, what features would you like to see in it?

39 responses

Ability to search and filter activities based on interests and availability.

Calendar view with color-coded events.

Attendance tracking for meetings and events.

Being able to filter and look for events based on interest

User-friendly interface for easy navigation

Customizable profiles for students, teachers, and administrators

Integration with academic schedules for seamless planning.

Notifications for upcoming events and deadlines.

Secure messaging system for communication between members.

Option to track participation and achievements.

Mobile app for on-the-go access.

Resource library for sharing materials and resources.

Easy to use

No spamming message :)

showing current activities with accurate details

Show more history and the future event

filter to find different kind of activity

Need a centralized platform to organise all the info