



UTM
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1.0 Overview of the Project

In an era where technology permeates every aspect of our lives, it's imperative for educational institutions like UTM to evolve accordingly. The proposed project, titled Clubhub, is a strategic response to the challenges faced by students in accessing timely and relevant information about campus clubs and societies. Led by a dedicated team, Clubhub aims to revolutionize the way students engage in extracurricular activities by providing a centralized platform for event discovery, communication, and participation.

At its core, Clubhub seeks to address three primary issues: the inundation of campus group messages with spam, the lack of a centralized platform for communication, and the limited exposure of niche clubs. By leveraging technology and innovative thinking, Clubhub endeavors to streamline the process of discovering and participating in club activities, making it easier for students to find their interests and actively engage within the campus community.

The project proposal outlines a comprehensive plan for the development of Clubhub, starting with a thorough analysis of the current challenges and needs of the student body. The proposed solution includes the development of a mobile application featuring user-friendly interfaces, personalized club profiles, event registration, attendance tracking, and integrated ticketing systems.

Moreover, the proposal encompasses a detailed feasibility study, including technical, operational, and economic assessments to ensure the sustainability and viability of Clubhub. Through a Cost-Benefit Analysis (CBA), it's demonstrated that Clubhub is not only financially feasible but also promises a favorable return on investment, making it a sound strategic endeavor for UTM.

In summary, Clubhub represents a transformative initiative aimed at enhancing the overall campus experience for students at UTM. By providing a centralized platform for event management and communication, Clubhub fosters a vibrant community of engaged students and clubs, aligning with UTM's vision of a future-ready campus that prioritizes student engagement and academic excellence.

2.0 Problem Statement

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

Clubs are trying to find a medium where they can reach students across the campus , unfortunately this leads to them spamming messages and advertisements in campus chat groups in order to get the students attention . through numerous information gathered this was proven to be a common problem across the campus

2. Problem 2: Uncentralized platform for communication of information

Based on information gathered from students, alot indicated that using the same social media group for school announcements, club events, and student businesses makes things confusing for them. Making it hard to find relevant information that they need in the group .

3. Problem 3: Lack of exposure to niche clubs

Due to the limited dissemination of information via social media channels, many smaller clubs and societies struggle to promote their events effectively. This lack of exposure often results in students being unaware of these clubs and their activities, consequently hindering their participation in campus events. Hence , The data collected indicates the lower number of student participation in club activities .

3.0 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.

4.0 Information gathering process

The information gathering process is a pivotal component of system analysis and design, as it provides invaluable insights into the recommended system design, requirements, and the intricacies of the business workflow.

4.1 Method used

In Order to gather relevant data efficiently, we adopted a comprehensive approach utilizing interactive methods like questionnaires and interviews, complemented by unobtrusive techniques such as sampling and observation.

4.1.1 Sampling:-

In the sampling process, we employed purposive sampling to carefully select recipients for our questionnaires. Our focus was on identifying individuals who could offer comprehensive insights beneficial to our system design and functionality. Primarily, we targeted outstanding students known for their academic achievements, particularly senior students. Their extensive experience and deep familiarity with campus life ensured the provision of reliable data essential for our information gathering phase.

Furthermore, we were attentive to the needs of future users, particularly club members and organizers. Recognizing their pivotal role within the system, we sought their input to capture valuable information during the data collection process. By engaging with these stakeholders, we aimed to gather insights that would directly contribute to the refinement and enhancement of our application's features and usability.

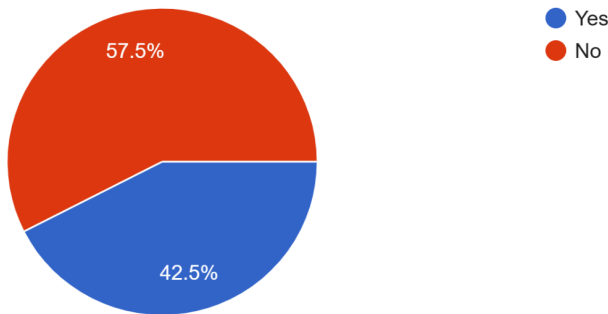
4.1.2 Questionnaire

In the process of gathering information, we used a questionnaire as a crucial tool to collect insights necessary for our system analysis and design. Through purposive sampling, we carefully selected recipients for the questionnaire to engage individuals capable of providing comprehensive perspectives on our system's requirements and functionalities. By utilizing an online platform like Google Forms, we made it easy for respondents to participate and expanded our reach. This method enabled us to gather 40 responses from a diverse pool of participants, ensuring a rich and varied dataset essential for informing the development and refinement of our.

Questions that was asked in the survey :-

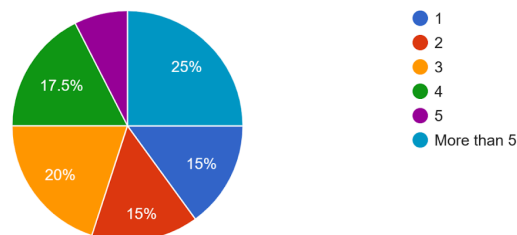
- Do you often participate in extracurricular activities at university?
- If yes, how many extracurricular activities are you involved in this semester?
- How do you currently find information about club activities and events on campus?
- How would you rate the current extracurricular system in your university?
- What obstacles have you faced while trying to search for extracurricular activities to join?
- If there was a brand-new system to organize everything related to extracurricular activities, what features would you like to see in it?

Do you often participate in extracurricular activities at university?
40 responses

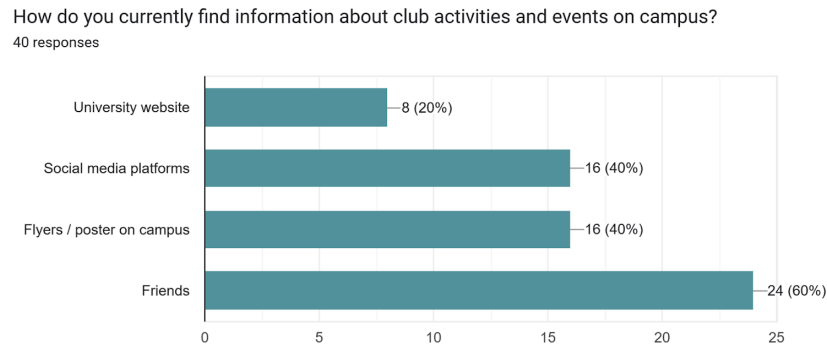


Based on the data gathered from the participants in the questionnaire , the majority of them (57.5%) stated that they do not often involve themselves in extracurricular activities . which further confirms and highlights the need of the system which will help and encourage users to participate in more activities inside the campus .

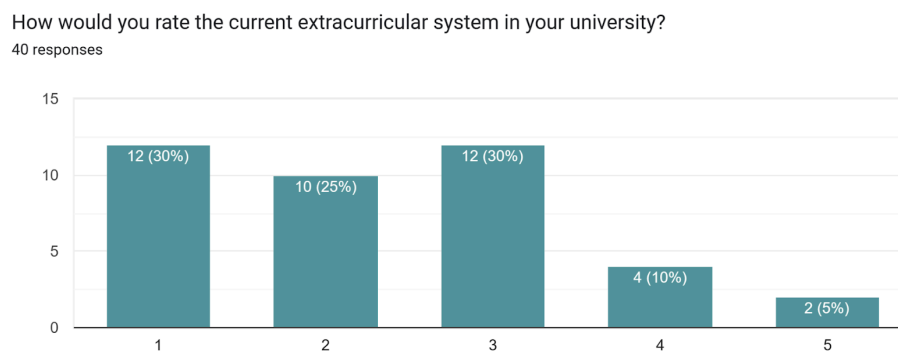
If yes, how many extracurricular activities are you involved in current semester?
40 responses



The findings reveal that the majority of participants engage in fewer than five activities, with only a quarter (25%) showing high involvement in various university communities and clubs. This underscores the necessity for the system to facilitate clubs in reaching out to students and streamline the enrollment process, eliminating any barriers that may deter participation. The goal is to create an environment that is highly motivating for students to engage in a wider range of activities.

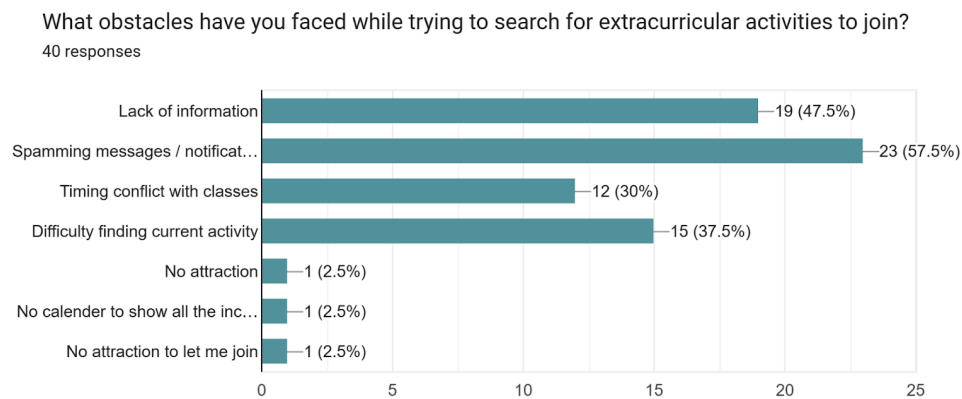


The data indicates that the majority of respondents rely on friends (60%) as their primary source of information regarding club activities and events on campus. This highlights the significant role of peer networks in sharing information and fostering engagement within the university community. Additionally, social media platforms serve as a prominent source for 40% of respondents, reflecting the widespread use of digital platforms for communication and event promotion. Moreover, an equal percentage of respondents (40%) still resort to traditional methods such as flyers and posters on campus, underscoring the enduring effectiveness of physical advertising in reaching students. However, the relatively lower percentage (20%) of respondents utilizing the university website suggests potential areas for improvement in terms of the online accessibility and visibility of club-related information. Overall, these findings emphasize the importance of employing attractive digital channels, to ensure comprehensive coverage and maximum engagement among students.



The figure shows that most student are dissatisfied with the the current extracurricular activities System in the university , where most student give it a rating of 1 (30%) , 2 (20%) ,3 (30%) out

of 5 respectively . This emphasizes the need for a more robust centralized system for extracurricular activities .



This pivotal question within the survey provides essential insights into the main areas of focus for feature development in the system. Examination of the collected data shows that a significant number of students (47.5%) identify a lack of information as a key obstacle to their participation in extracurricular activities. Furthermore, a majority (57.5%) express dissatisfaction with excessive messages, highlighting the importance of streamlining communication channels and ensuring they are non-intrusive. Moreover, issues such as timing conflicts with classes (30%) and challenges in discovering current activities (37.5%) are identified as significant barriers to student engagement. These results emphasize the need for the system to prioritize providing informative content, offering clear and detailed descriptions of ongoing activities while reducing spam. Additionally, addressing scheduling conflicts and improving access to current events are crucial in promoting increased involvement in extracurricular pursuits.

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

This particular question in the survey yielded insightful responses from 39 participants regarding the desired features for a new system focused on organizing extracurricular activities. The most recurring requests include the ability to search and filter activities based on interests and availability, alongside a calendar view with color-coded events for easy tracking. Attendance tracking, customizable profiles, and integration with academic schedules were also emphasized as essential functionalities. Participants emphasized the importance of user-friendly interfaces, secure messaging systems, and mobile app accessibility for on-the-go usage. Notably, there was

a strong consensus on the need to eliminate spamming messages, ensure accurate and up-to-date event listings, and provide features for reviewing and providing feedback on events. Other desired features include personalized recommendations, club creation and joining capabilities, budget tracking tools, privacy settings, and integration with social media platforms for promotion. These responses highlight the importance of creating a centralized platform that is informative, easy to navigate, and tailored to meet the diverse needs of users involved in extracurricular activities. It also provides valuable suggestions for features that can be added to the system during its release phase.

4.1.2 Interview

In the process of gathering information, we utilized the pyramid method to conduct interviews. This method involved a combination of open-ended and closed questions, along with probe questions, to gain a deeper understanding of our stakeholders' perspectives. One of the interviews we conducted was with Chong Lun Quan, a software engineering student at our university's computing facility. Chong's insights as both a future user and stakeholder proved to be extremely valuable in comprehending the complexities of student engagement in extracurricular activities.

Throughout the interview, we delved into various aspects of Chong's experiences with extracurricular activities at UTM. We asked key questions regarding the frequency of his participation in such activities, his perceptions of the current extracurricular landscape at the university, and how he accessed information about club activities on campus. Additionally, we aimed to identify any challenges he faced while seeking information related to extracurricular activities.

Moreover, we presented Chong with a hypothetical scenario that involved the development of a completely new system designed to comprehensively organize extracurricular activities. We encouraged him to share his vision for such a system and suggest any features he would like to see implemented. This approach allowed us to gather detailed insights into Chong's preferences and expectations regarding the design and functionality of the proposed system.

His responses helped to better our understanding of our stakeholders' needs and requirements for the system.

Questions asked to Chong Lun Quan:-

- Do you often join extracurricular activities in utm?
- What do you think about current extracurricular activities in our university?
- How do you currently find information about club activities on campus?
- What kind of challenges have you faced when trying to search for information related to extracurricular activities?

- if there is a brand new system which organizes activities related to extracurricular activities , how do you like it to be , and any features you want to see in?

4.2 Summary from method used

Our information gathering process employed a multifaceted approach, utilizing various methods including questionnaires, interviews, sampling, and observations. These methods provided invaluable insights into the system requirements, user preferences, and challenges faced in the current extracurricular landscape at our university.

For instance, through questionnaires, we were able to collect quantitative data from a diverse pool of participants, shedding light on the frequency of student participation in extracurricular activities and their preferred methods of accessing information about club activities on campus. Furthermore, interviews conducted with stakeholders like Chong Lun Quan, a software engineering student, offered qualitative insights into the intricacies of student engagement and the perceived shortcomings of the current extracurricular system. Chong 's input, along with that of other interviewees, guided our understanding of the user experience and informed the design and functionality of the proposed system.

Sampling played a crucial role in our data collection process, allowing us to target specific individuals who could offer comprehensive insights beneficial to our system design and functionality. By selecting outstanding students known for their academic achievements, particularly senior students, and engaging club members and organizers, we ensured that our data pool was diverse and representative of our user base.

Observations complemented these methods by providing real-time insights into student behavior and interaction patterns with existing extracurricular systems. By observing how students navigate club events and access information, we gained valuable context that enriched our understanding of user needs and informed our decision-making process.

In summary, the combination of questionnaires, interviews, sampling, and observations allowed us to gather a comprehensive dataset essential for informing the development and refinement of our extracurricular activities management system. These methods provided a holistic understanding of user requirements and preferences, ensuring that our system is tailored to meet the diverse needs of our university community.

5.0 Requirement Analysis (based on AS-IS analysis)

Problem Identification:

- **Campus group messages flooded with spam:** Many clubs resort to spamming campus chat groups with messages and advertisements to gain student attention, resulting in cluttered communication channels.
- **Lack of a centralized platform for communication of information:** Students find it challenging to navigate through multiple social media groups and channels to find relevant information about club events and announcements.
- **Limited exposure to niche clubs:** Smaller clubs and societies struggle to promote their events effectively, leading to low awareness and participation among students.

User Needs:

- **Streamlined Access to Information:** Users require a centralized platform to access club-related information, events, and announcements conveniently.
- **Reduction of Spam:** Users seek a platform that filters out spam messages and delivers only relevant and non-spammy information.
- **Discoverability of Niche Clubs:** Users want to discover and engage with niche clubs and societies easily, enhancing their overall campus experience.

Current Challenges:

- **Information Overload:** Students face difficulty in finding relevant information amidst a barrage of spam messages and advertisements.
- **Ineffective Communication Channels:** The lack of a centralized platform leads to confusion and missed opportunities for students to engage in extracurricular activities.
- **Low Awareness and Participation:** Niche clubs struggle to attract student attention and participation due to limited exposure and promotion.

5.1 Current business process (scenarios, workflow)

As we mentioned above, we have three specific users to use the system such as the regular user which is the students, organizer, and the administrator. Each of them has a different interface and process to work with the system.

Regular User

1. Existing user **login the system** with their username and password
 - 1.1 If they are new user, register with their name, matric number, username, password
 - 1.1.1 New users are required to fill up a survey to understand their interest and preferred club event or activities. They also can edit their profile details like username and portfolio.
2. Users enter to the **main page**. There are some advertisements and promotion banners for the upcoming club activities. Recommended activities based on user interest filterable by date, genre is listed on the main page.
 - 2.1 If the user chooses the **recommended list**, the user will enter the **event page**.
 - 2.1.1 Users are able to view the event details such as the title, requirement of joining the activity, cost, description of the activity, total capacity, etc.
 - 2.1.1.1 If the user chooses to enroll in the activity, the user will redirect to the payment portal (if the user enrolls to a paid event).
 - 2.2 If the user chooses the **club page**,
 - 2.2.1 The user is able to view the club description and profile, follow the club page for notifications, view the event organized.
 - 2.3 If the user chooses the **user profile page**,
 - 2.3.1 Users manage to view their own profile and portfolios. They also can view the joined events and manage enrollments of the upcoming activities.

Organizer

1. Existing organizer **login** with their username and password.
 - 1.1 If they are new organizers, they require their profile details, username and password.
2. Organizer enters the main page.
 - 2.1 If the organizer enters the **event creation page**, (if they want to create an event)

2.1.1 They are able to create new events with details like title, description, requirement, cost, capacity, date and time. They can also specify the event categories and upload event images.

2.2 If the organizer chooses the **event management options**,

2.2.1 They are able to edit the event details, manage events enrollments by approving or rejecting requests, track the attendance and communicate with the participants by sending out notice or notification.

2.2.2 They are also able to view the event statistics and manage the ticket sales for the paid event.

2.3 If the organizer enter the **club management page**,

2.3.1 They are able to edit profile and club details.

2.3.2 They are also able to track the club member, assign the club administration and manage the member's club status.

2.4 If the organizer enter to the **advertisement management page**,

2.4.1 They are able to manage the advertisement and promotion about the club and club events that show on the user's main menu.

2.4.1.1 Create, edit, and delete banners for promoting activities.

2.4.2 Access data analytics and reports on user engagement, club popularity, etc.

2.5 If the organizer enter to the **feedback and support page**,

2.5.1 They are able to review the user's feedback regarding the events or activities.

2.5.2 They able to respond to the inquiries and address issues related to the events and club

Administrator

1. Existing admin login with their username and password.

1.1 If they are a new admin, they need to set up profile details, username, password.

2. When they enter to the **administrator page**,

2.1 They are able to view and manage user profiles, events, and club profiles.

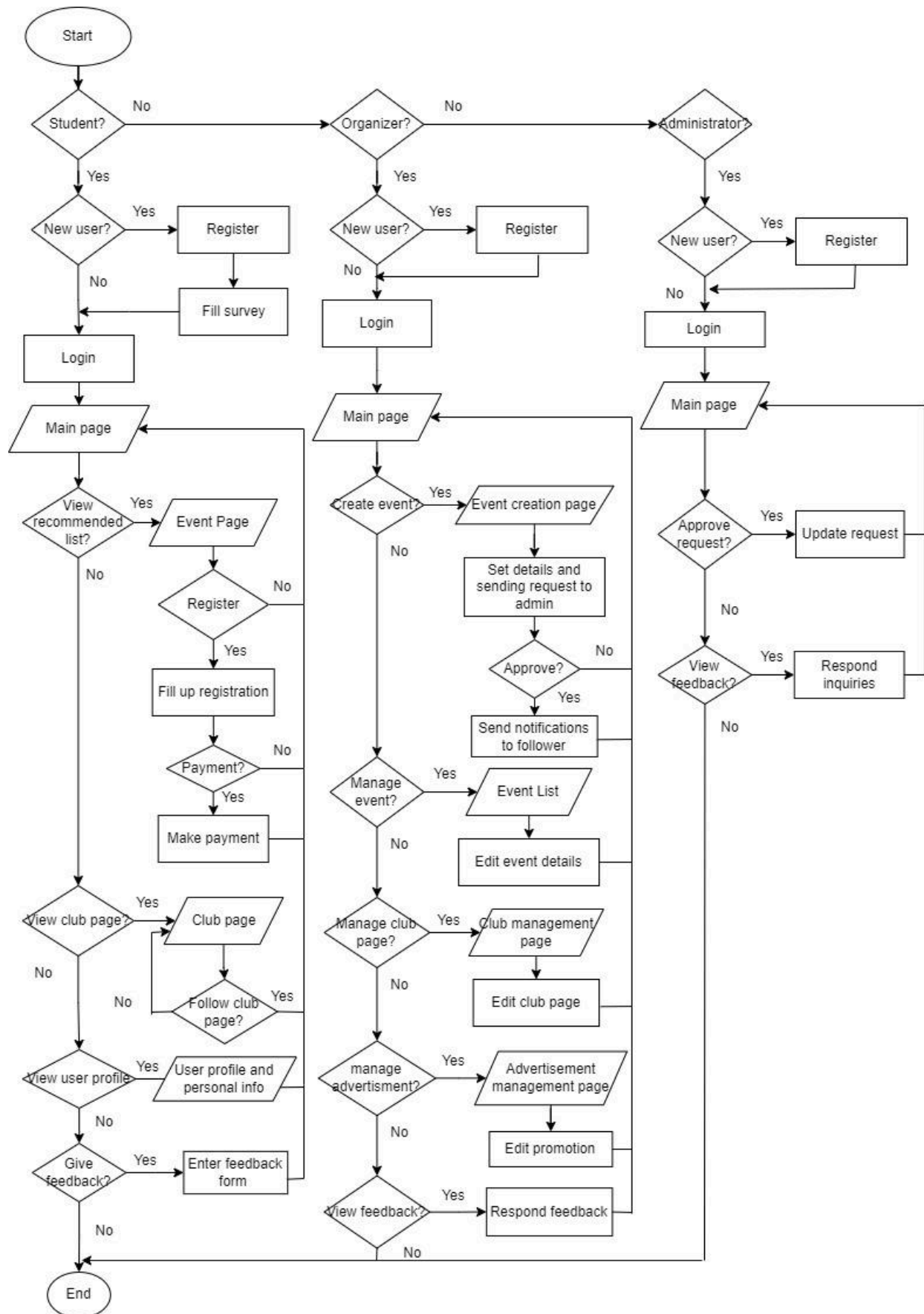
2.2 They can approve promotion requests by the organizer.

2.3 They can also view site statistics and manage payments system

3. When they choose the **feedback and support page**,

3.1 They can receive user feedback and support requests regarding the system.

3.2 They can respond to inquiries and address issues to improve the user experience.



5.2 Functional Requirement (input, process and output)

5.2.1 Context Diagram

PROCESS	INPUT	OUTPUT
Clubhub System	Event detail Approve Status Event preferences Register response Payment Event info	Registration payment Approve request Recommendation list Event notification Event certificate

5.2.2 Level 0 Diagram

PROCESS	INPUT	OUTPUT
Manage Event	Approve event Event detail	Approve request Approved event
View Event List	Event list Event Preferences	Recommendation List
Register Event	Event detail Register response	Registration info Registration detail Payment detail

Apply Payment	Payment Payment detail	Payment status Registration Payment Event Notification
View User Profile	Event certificate	Event info Attendance record

5.2.3 Child Diagrams

5.2.3.1 Manage Event

PROCESS	INPUT	OUTPUT
Create Event	Approve status Event detail	Approved event Approve request
Update Approved Event	Approved event	Approved event

5.2.3.2 View Event List

PROCESS	INPUT	OUTPUT
Filter Event	Event preferences	Filtered Event
Check Event Availability	Filtered Event Event List	Available event
Generate Recommendation Event List	Available event	Recommendation List

5.2.3.3 Register Event

PROCESS	INPUT	OUTPUT
Search Event	Event detail Register response	Register response
Apply Registration	Register response	Registration detail Registration info Registered event
Check Registration Fee	Registered event	Payment Detail

5.2.3.4 Apply Payment

PROCESS	INPUT	OUTPUT
Pay Registration Fee	Payment detail Payment	Valid payment
Update Payment Status	Valid payment	Payment status Event Notification Registration Payment

5.2.3.5 View User Profile

PROCESS	INPUT	OUTPUT
Search Joined Event	Event info	Event info
Check Event Attendance	Attendance record	Valid Attendance
Generate Event Certificate	Valid Attendance	Event certificate

5.3 Non-functional Requirement (performance and control)

1. Performance:

- Requirement: Responsive, scalable system.
- Control: Regular performance monitoring, optimization measures (load testing, caching, server scaling).

2. Security:

- Requirement: Safeguard user data, prevent unauthorized access.
- Control: Implement encryption, access controls, authentication mechanisms, conduct regular security audits.

3. Usability:

- Requirement: Intuitive, user-friendly interface.
- Control: User-centered design, usability testing, iterative feedback collection.

4. Accessibility:

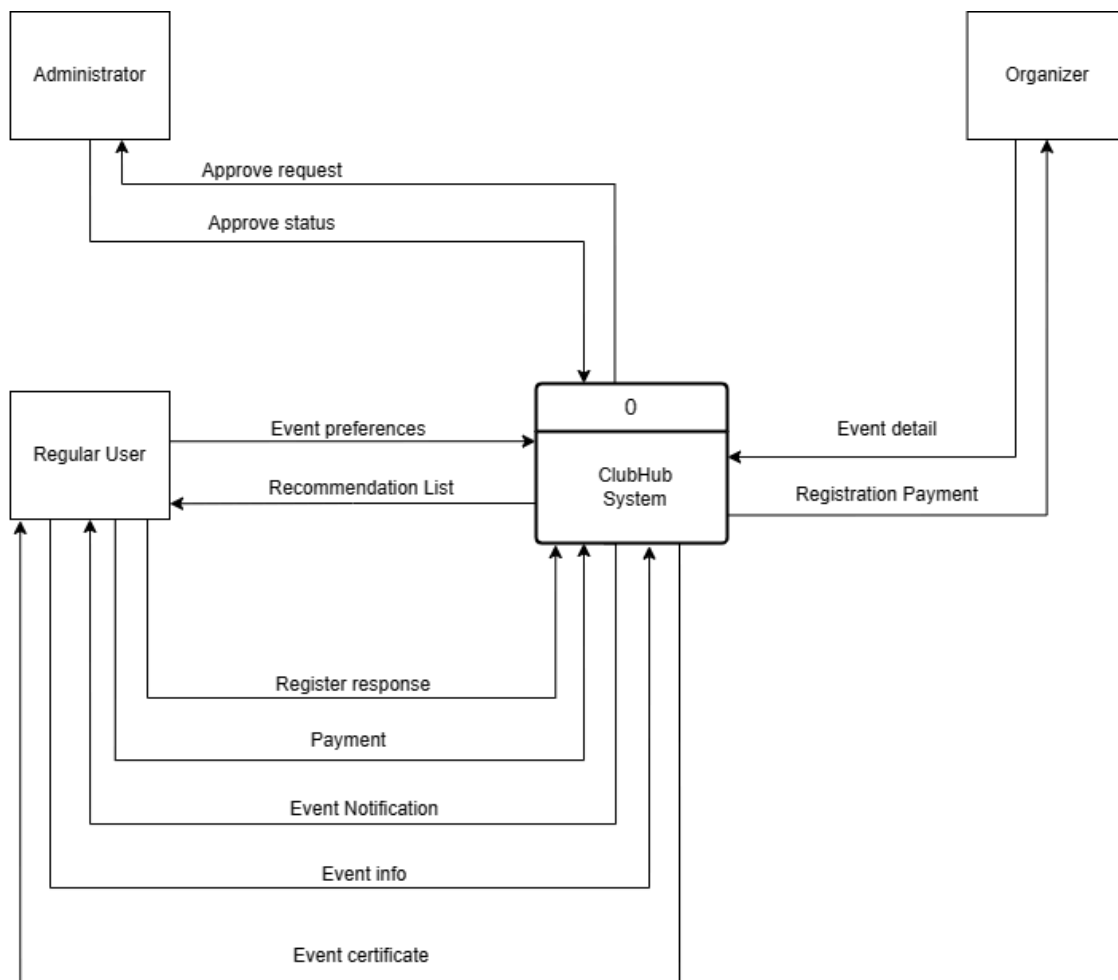
- Requirement: Accessible to users with disabilities.
- Control: Compliance with accessibility standards (WCAG), implementation of accessibility features (screen reader compatibility, keyboard navigation).

5. Regulatory Compliance:

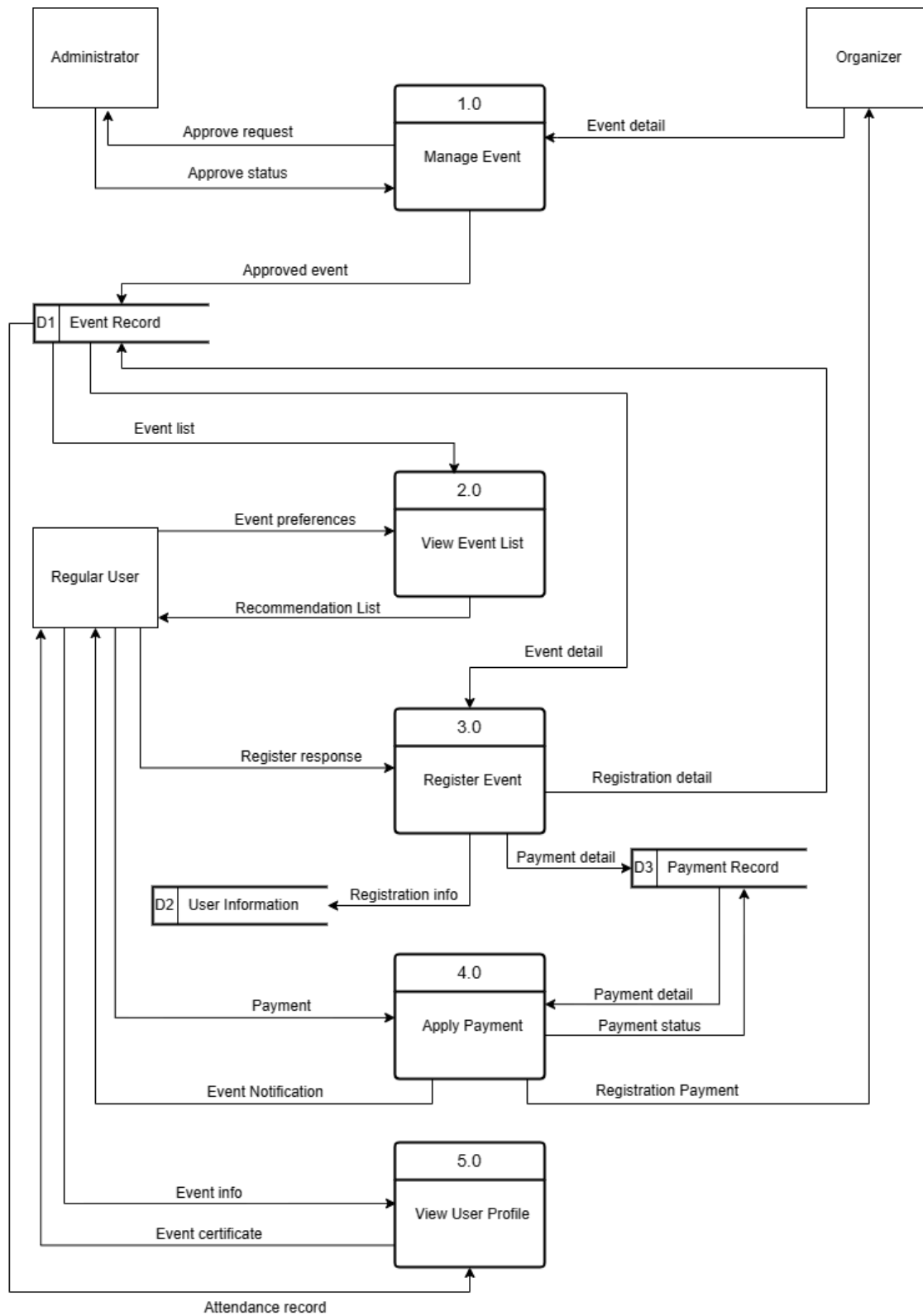
- Requirement: Comply with data protection, privacy regulations.
- Control: Regular review of privacy policies, adherence to regulations (GDPR, CCPA), implementation of data protection measures.

5.4 Logical DFD AS-IS system (Context Diagram, Diagram 0, Child)

5.4.1 Context Diagram

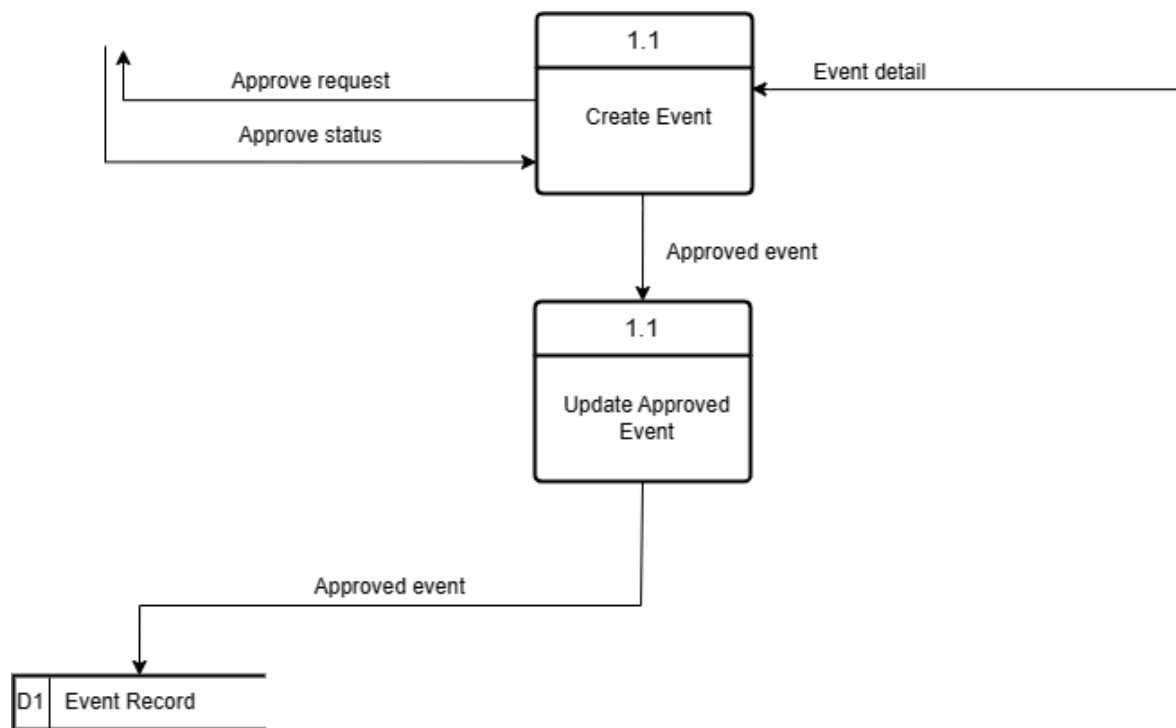


5.4.2 Level 0 Diagram

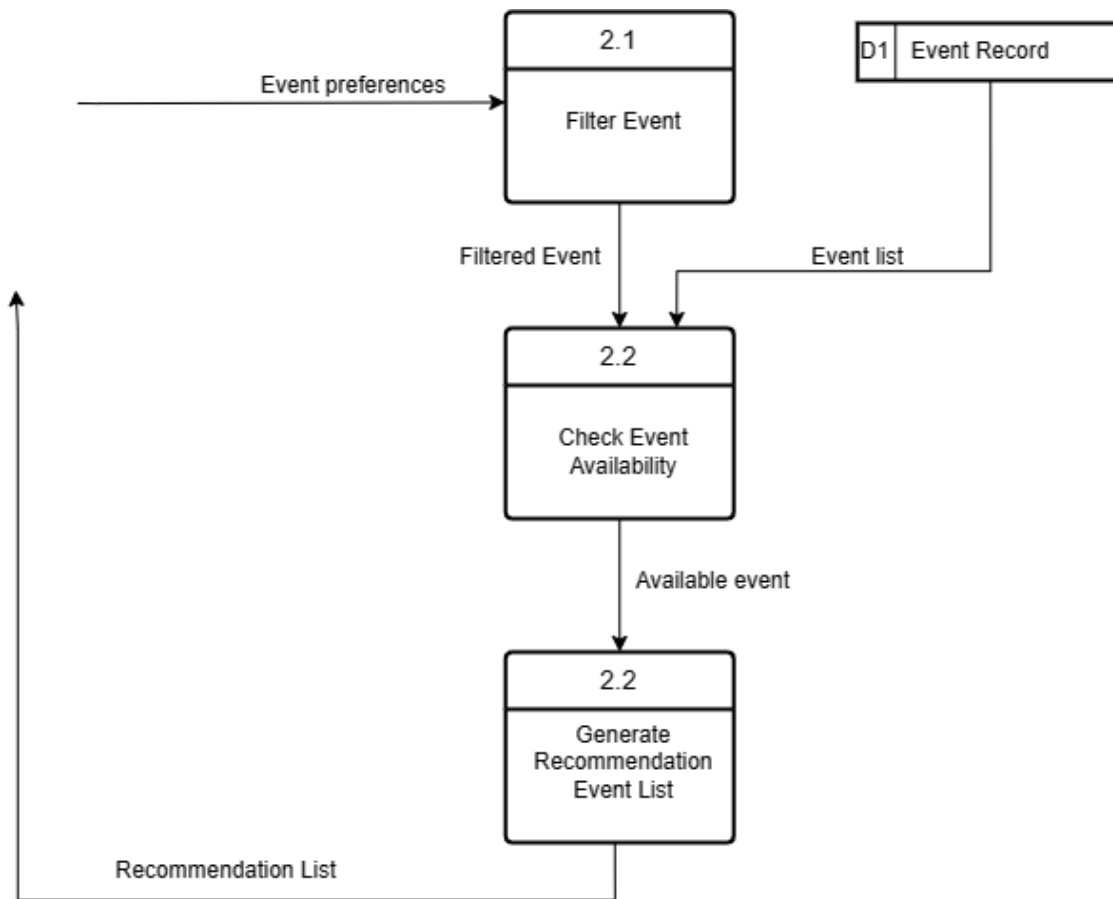


5.4.3 Child Diagram

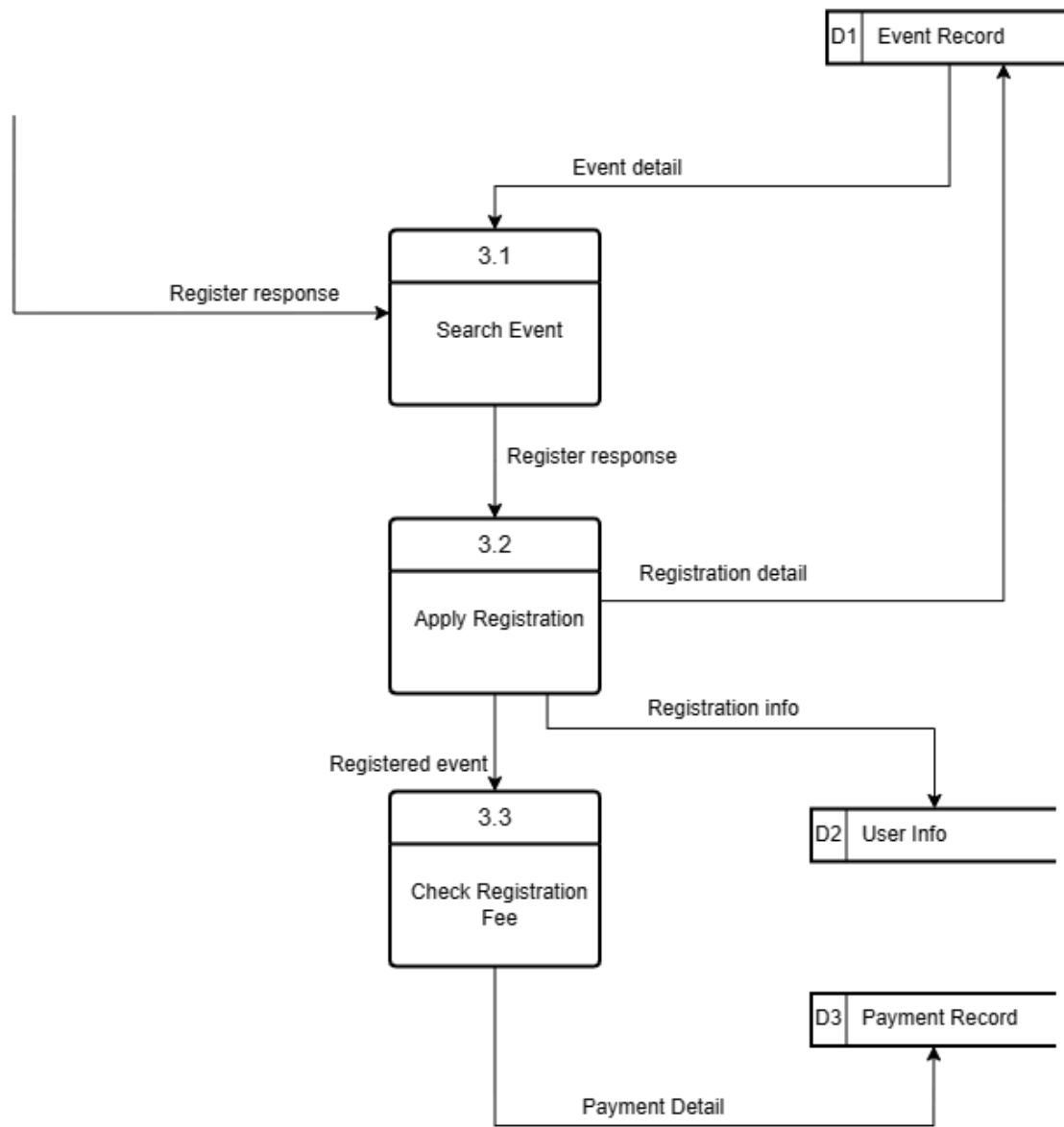
5.4.3.1 Process 1: Manage Event



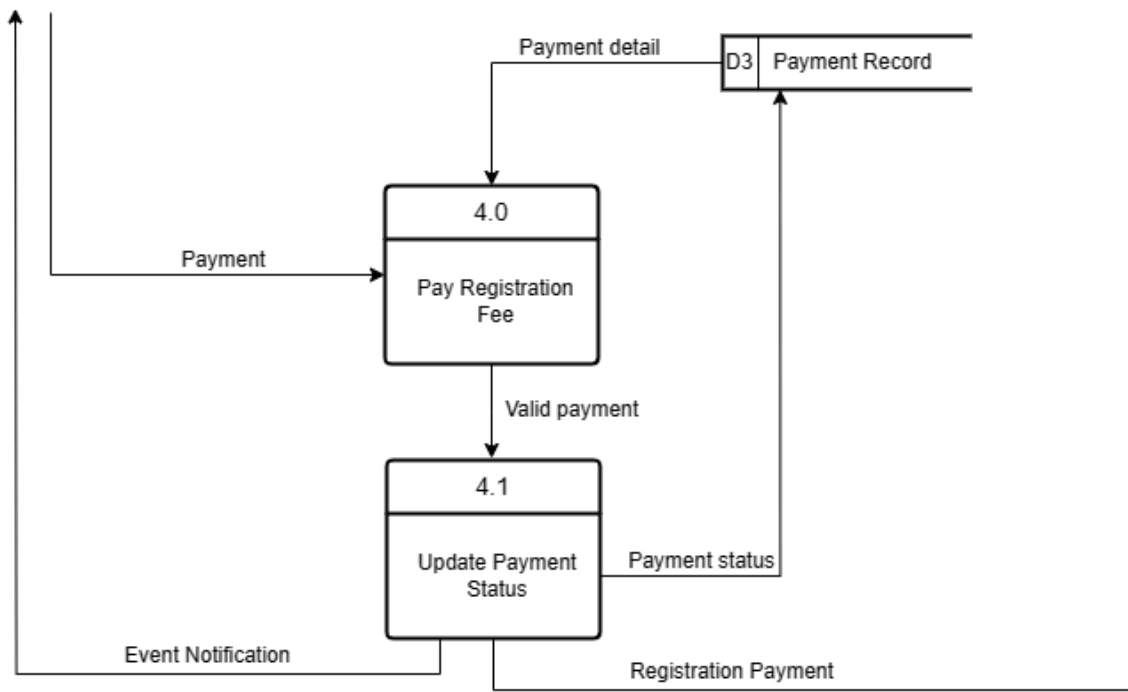
5.4.3.2 Process 2: View Event List



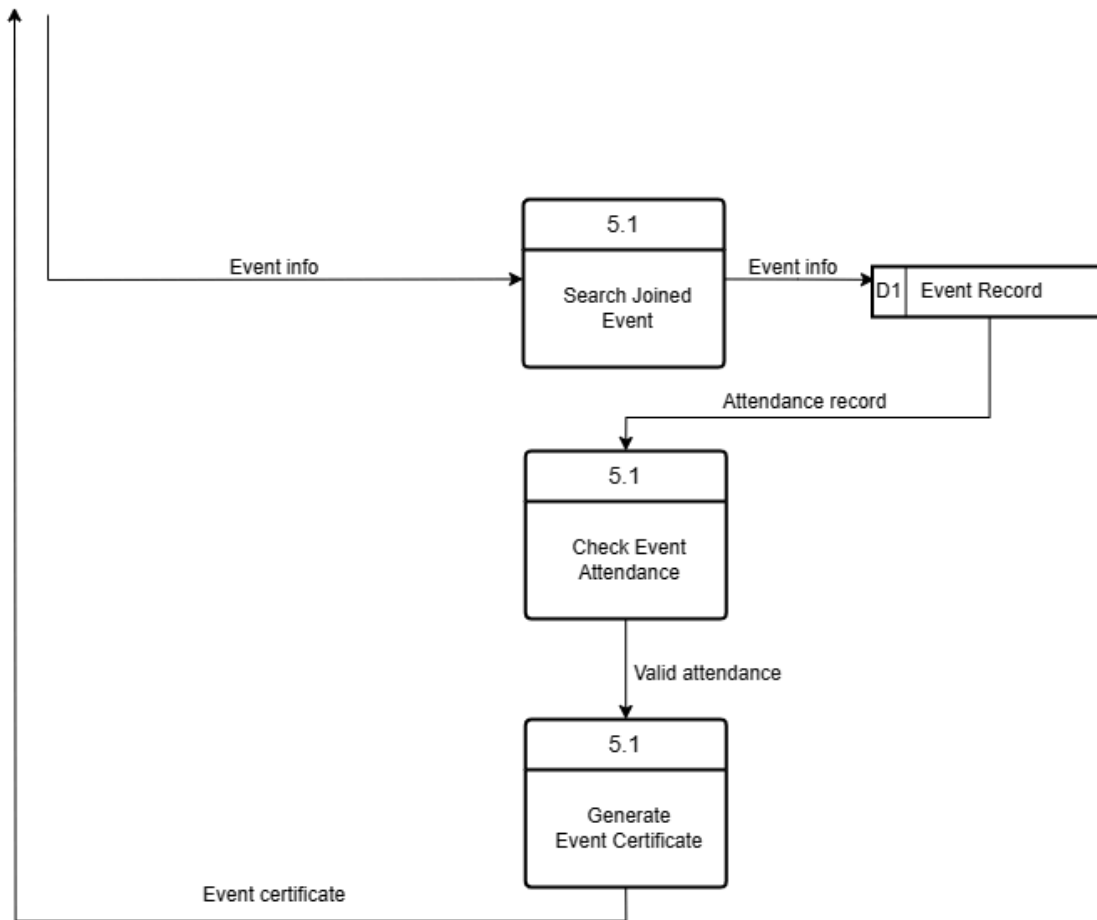
5.4.3.3 Process 3: Register Event



5.4.3.4 Process 4: Apply Payment



5.4.3.5 Process 5: View User Profile



6.0 Summary of Requirement Analysis process

Setting the stage for the new communication network, requirement analysis offers a profound understanding of the obstacles that are currently experienced by students and club organizers as it targets the unendurable circumstances caused by these common challenges. The platform gravitates towards serving the issues like spam, information overload, and ineffective distractions by recognizing and eliminating them. This would, in effect, enable students to complete activities with the clubs and events of their college in the best possible manner.

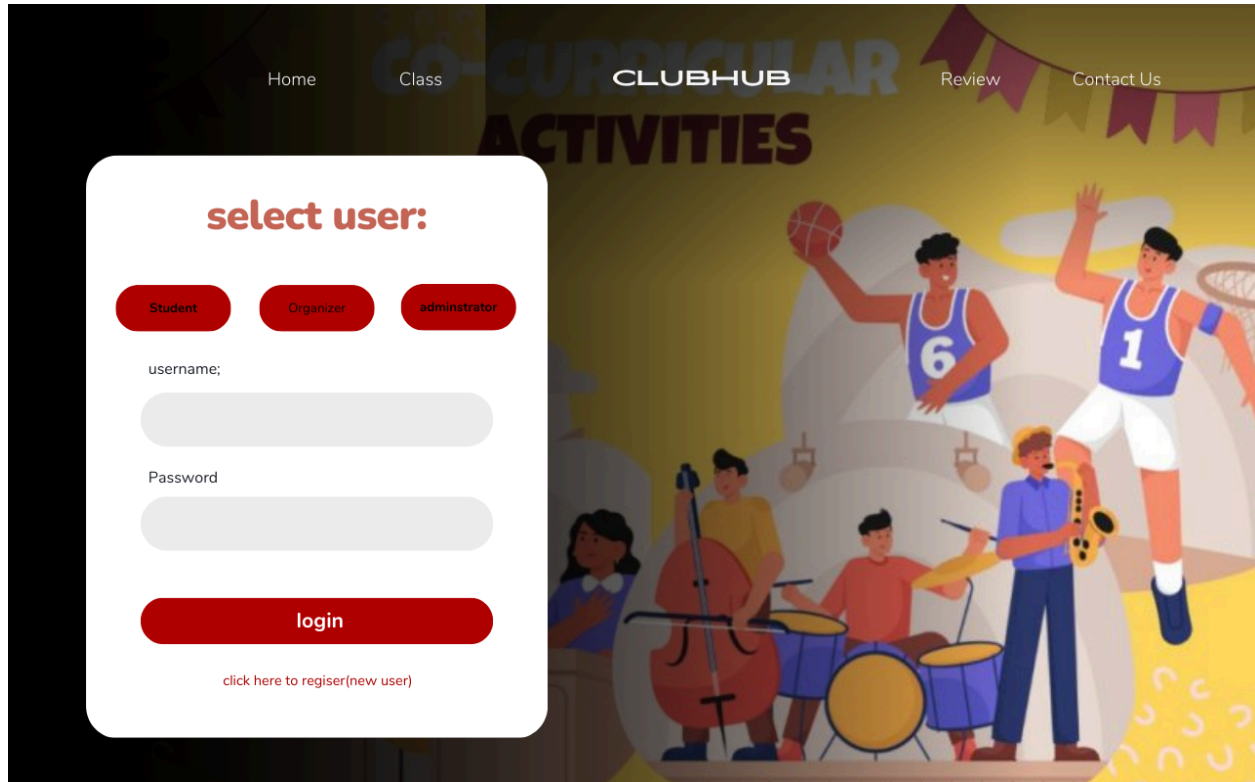
The planned system, by contradiction, is a two-way communication method between the university and its clubs. In doing so, the process will help students obtain the correct information and submissions from the clubs, thus ensuring the students get what is most pertinent to them and not spammy content. The features contained in the system will meet the expectations of regular users, organizers, and administrators by means of perceiving and tracking their operations in an interfaced and thematic way.

Moreover, the only original non-ops are accessibility, manageability, reliability, accessibility, and regulatory compliance. The non-functional requirements govern the platform's overall performance, security, usability, accessibility, and regulatory compliance. The noteworthy components consist of the user registration and profile management system as well as the event creation and enrollment application, and club promotion. The non-functional requirements ensure the platform's performance, security, usability, accessibility, and regulatory compliance.

The creation of this kind of a system is meant to bring harmony between the organization and its students and provide an intellectual exchange and the student's involvement in extracurricular activities apart from that, is meant to be catalysts for getting involved through the various clubs. At the same time, organizing a far-reaching and effective strategy for students to discover and be present at campus events will contribute to enriching their overall school years.

APPENDIX

1. [clubhub - Desktop Mockup \(canva.com\)](#)



Questionnaire:-

1. [Research on University Extracurricular Activities Platform \(google.com\)](#)

Interview:

1. <https://youtu.be/96JcnEzw5qo>