



Count Me In

IT 496: Graduation Project Report Product Release-1

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1 Introduction

In universities, college students tend to focus only on getting good grades and perform the required academic work [1]. However, the college experience is much more than facing the curriculum squarely, it is about meeting new people, taking part in the big community, taking on a new journey, learning more about yourself, and enhancing your skills. Professionals have deemed extracurricular activities to be the gateway to achieving those skills and have described them as “an essential element of the university experience” [2]. Universities provide various activities and opportunities outside the scope of the curriculum but are just as important for the student’s future, skill development, and careers that the students lack the knowledge of and are unaware of even though it is taking place in their university. Therefore, they do not get the full experience and advantages of college and are not able to take advantage of the opportunity to make professional connections and get involved in a bigger society. The root of this problem is the lack of a platform that neatly gathers and displays the extracurricular activities and opportunities. It leads to the students missing out on these opportunities because they are not aware of them or think of the searching and enrolling process as a burden and a waste of time. Therefore, they will miss out on the great potential and benefits of enrolling in extracurricular activities, i.e., courses, workshops, and opportunities, i.e., volunteer work and research which can affect the students’ future greatly. So, technology will guide them and help them find their interests easily and enroll in any activity they want. We aim in this project to supply university students with a platform where they can take part in any activity provided by their university, summarize the activity's information, and ease the process for the student to be a participant, keeping students well informed.



1.1 The Problem

College students have a significant problem in keeping up with and finding extracurricular activities and opportunities provided by the university, because of the many different platforms and mediums that display them and the lack of one unified platform making it both time and effort consuming. In addition, there is a chance that opportunities are not advertised for all students equally. Some know about opportunities through friends or through an announcement made by a mentor verbally. Those will get the chance to apply for the opportunity while others who had not been present when the opportunities have been talked about or announced, unfortunately, will never know of it. Being unaware of such activities and opportunities will make students miss the chance of having an invaluable edge that can potentially give them the benefit in the job market [3].

1.2 The Solution

We proposed a hybrid recommender system mobile application, that recommends extracurricular activities for college students (system users) based on the interests they chose (content-based) and the similarity across profiles(collaborative-filtering), so they can fully benefit from the university experience. The recommender system will improve the process of finding and participating in extracurricular activities and opportunities and save the students' effort and time. Our aim is to enrich the academic experience for college students, encouraging them to explore their interests and talents, refine their skills and make benefit from the university resources to better help them and their future. All the students will be up to date on the activities and opportunities. Students will have a fair chance to apply for opportunities and enroll in extracurricular activities, it will directly sync with their calendars. Additionally, it will encourage the authorized personnel (admin user) to manage their activities and opportunities within the platform and get feedback from the students (system user) through ratings, it also will ease the task of reaching the targeted demographic [4].



1.3 Product

1.3.1 Product Vision

For the students who need to keep up with the extracurricular activities and opportunities to develop their skills and get the full college experience. “Count Me In” is a mobile application, that recommends the students extracurricular activities and opportunities, that are most suitable for their interests. Unlike other applications and websites, our product is tailored for KSU students to keep them well informed about the activities and opportunities giving everyone an equal chance of enrolling in extracurricular activities and applying to opportunities.

1.3.2 Product Roadmap

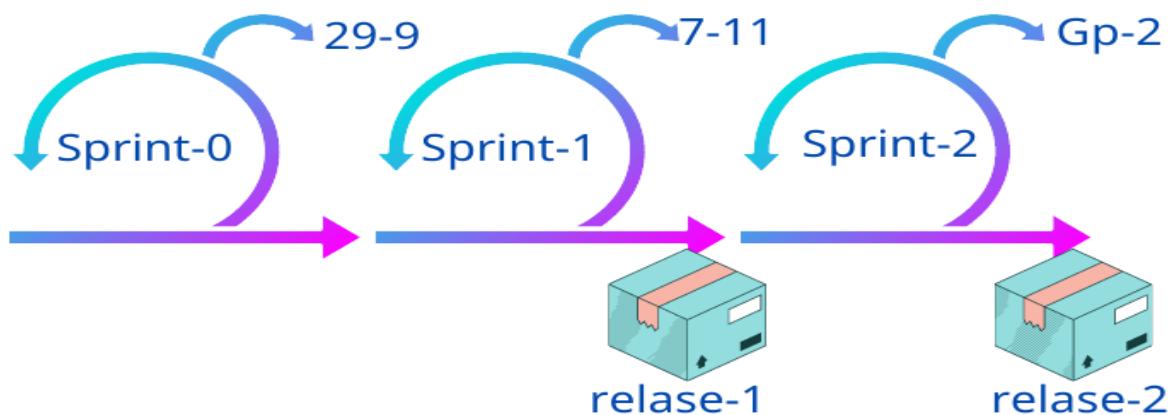


Figure 1 - Roadmap Timeline



Table 1 - Product Roadmap Deliverables

Sprint-0	Domain analysis Requirements specification Requirement elicitation	
Sprint-1	Data collection UI design Features for student (system user): Sign up, log in, setting up profile, setting interests, editing interests, viewing activities, search, enroll to activity, disenroll to activity, apply to opportunities, log-out.	Release 1
Sprint-2	Features: for student (system user): Build a recommender system, events sync in calendar, rating and reviewing activists, notifications me on extracurricular activities' availability, for activity admin and super admin: log-in, view extracurricular activities, search for extracurricular activities, log-out. For activity admin: sign-up, request adding opportunities, request adding/deleting/editing extracurricular activities. For super admin: adding opportunities, adding/deleting/editing extracurricular activities, managing activity admins' requests.	Release 2



1.3.3 Objectives

1.3.3.1 Product (customer focus-value):

- A hybrid recommendation system that recommends the university's activities and opportunities based on the user's interests.
- Provide a recommender system mobile app that allows students to enroll and apply for available extracurricular activities and opportunities.
- help students manage their time and effort.
- Enrich the academic experience for college students and encourage them to explore their interests and make benefit from the university resources.

1.3.3.2 Project (solution focus-plan):

- Collecting data from club leaders and event organizers at the university.
- Building application using flutter to allow the end user to interact with the recommendation system.

1.3.3.3 Learning (student focus):

- We will learn how to program using flutter and dart.
- We will learn how to use firebase.
- Using tools for building the application such as android studio for SDK, it will help us in running and connecting the emulator.
- We will learn about data mining methods for the recommender system.



1.3.4 Scope

“Count Me In” is an Android mobile application that supports Arabic language. It aims to help the female students at King Saud University of different levels (between the ages of 18 to 22) to view and enroll in and apply to the recommended courses, workshops, events, or opportunities, and to improve the college experience for the average student. “Count Me In” will be providing many user and admin features. Admin features include signing up, uploading extracurricular activities and opportunities with the necessary information, enable the users to rate the activities, editing/deleting activities, logging in and out. User features also include signing up, logging in, viewing extracurricular activities, setting up the profile, setting preferences, apply to an opportunity, enrolling/disenrolling in activities, events sync in calendar, enable notification, rating activities.

1.3.5 Hardware/Software Tools and Cost

Table 2 - Hardware/Software Tools and Cost

Hardware Tools	
Name and Description	Cost
5 Laptops: required for every step of developing our application. Each team member has one.	No spending cost needed as all team members already have laptops, as well as the university providing computers on campus.
1 Android phone: required for testing	No spending cost is needed.
Software Tools	
Name and Description	Cost
Android Studio: SDK.	No spending cost needed.
Visual Studio Code: for programming.	No spending cost needed.
Grammarly: Typing assistants.	No spending cost needed.
GitHub: for integration.	No spending cost needed.
Jira: To organize the tasks each team member wants to achieve/ have already achieved.	No spending cost needed.
Microsoft Office: More specifically excel and Microsoft calendar	No spending cost needed.
FlutterFlow: to create the application interface	No spending cost needed.
Firebase: To provide the database for authenticating and storing the data	No spending cost needed.



1.4 Scrum Team

1.4.1 Skill Set Requirements

Table 3 - Skill set Requirements

Technical Skill Required	The current level of the team - Learning plan
Data Collection	Team level: Intermediate. Learning plan: Learn and research the most efficient way of data collection along with data analysis.
Data Analysis	Team level: Intermediate. Learning plan: As mentioned in the data collection learning plan, a more efficient way of data analysis will be researched and studied more.
Android application programming	Team level: Beginner. Learning plan: Learn how to program using android studio
UX Design	Team level: Intermediate. Learning plan: Learn more about user experience for the best possible encounter with our application.
UI Design	Team level: Beginner. Learning plan: taking a course in flutter development prior to Sprint 1.

1.4.1.1 Learning

To acquire a higher level of technical skills more research has been done as well as taking courses and joining study group chats. Currently the team knows the basics of flutter and dart, and visual studio code. However, there is still room for improvement therefore we will continue to take more courses and do research.



1.4.2 Roles and Responsibilities

Table 4 - Roles and Responsibilities

Scrum Team	
Product Owner:	Dr. Amani Al-Ajlan
Developers:	Raghad Saad Al-Shamrani Ghadah Altuwaym Kayan Alshehri Noura Alqahtani Reem Almutairi
Scrum Master (SM):	Dr. Rana Alkadi
Stakeholders:	Development team: Raghad Saad Al-Shamrani Ghadah Altuwaym Kayan Alshehri Noura Alqahtani Reem Almutairi Clients: University students wanting to enroll themselves into collage activities and opportunities.



2 Background

A recommendation system is software tool and method for making recommendations to users based on their needs, or preferences [5]. Recommender system help users in decision-making, such as: genres of music you want to listen to, types of items you want to buy, categories of online news want to listen to, types of items you want to buy, categories of online news you want to read. Information overload has become a problem in recent years. The recommender system has proven to be a valuable tool as it generates recommendations based on user or item history [6]. It is an information processing system that assists users in searching through knowledge records by gathering various types of available data. It primarily targets people who have difficulty evaluating potential items from an overwhelming number of options available online. Essentially, all recommender systems go through three stages:

- (a) Phase of information collection via implicit, explicit, or feedback.
- (b) Phase of learning using various machine learning algorithms and pattern recognition.
- (c) prediction or recommendation phase [7].

There are three main types of recommender systems: content-based, collaborative, or a combination of the two (hybrid). The first type is a content-based recommendation system which is primarily concerned with two criteria: item and user. Several types of records before the system analyzes an item's attributes and a user's profile, they may reveal valuable information prior to the system analysis [8]. It considers this information and suggests more appealing items to users based on their preferences. To supply a satisfactory recommendation, there must first be enough usable data. Second, a proper learning algorithm must be used to learn about the user and the item [9]. The collaborative system, on the other hand, tries to figure out the feasibility of items for an individual. Considering not only their profile histories but also the similarities between their profiles [10]. It assumes that people behave similarly when deciding whether they have similar tastes in the past while making a purchase, rating items, or selecting items [11]. Lastly, the combination of the two systems the Content-based and the Collaborative Filtering (CF), is the hybrid recommendation systems are modified that control one mechanism and maximize the advantages and also reduce the limitations of both strategies. Therefore, hybrid recommendation systems work on characteristics that are related to both [12].



Figure 2 shows the difference in filtering methods between the two types of recommender systems the collaborative and the content-based in a simple example. The collaborative RS takes into consideration the activity history of the user so if we have two users with similar activity history and one of them read an article the system will recommend the same article to the other user with the same activity history. On other hand the content-based RS focuses on the content the user reacts with the most and will keep recommending similar content to the user.

Table 5 give a brief about each system and advantages and disadvantages of using each one.

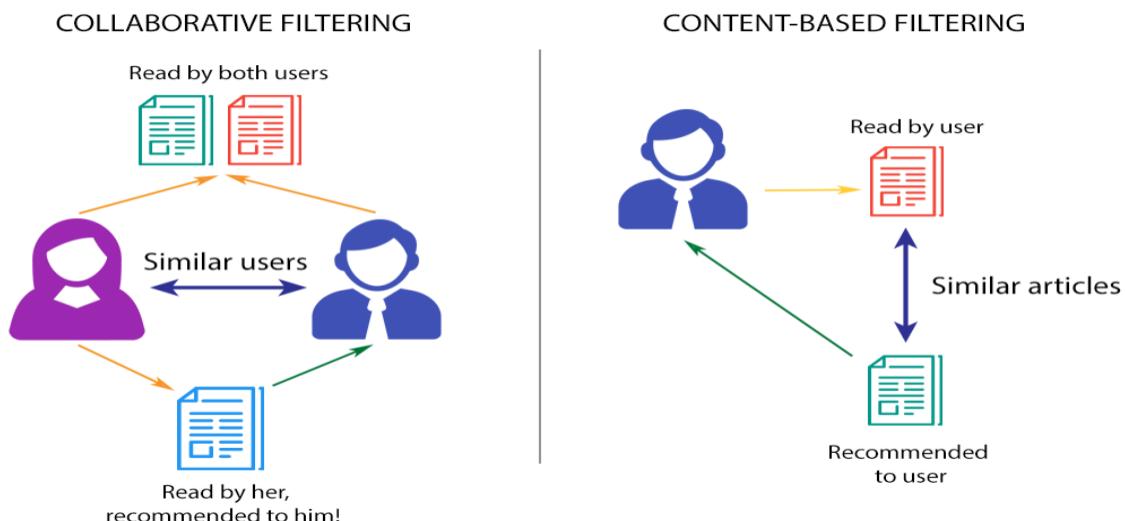


Figure 2 - The difference between collaborative and content-based recommender system



Table 5 - RS types comparison

RS types comparison		
	Content-based	Collaborative
Brief	This filtering is based on the description, or some data provided for that item. The system finds the similarity between items based on their context or description.	The recommendations are done based on the user's behavior. The history of the user plays an important role.
Advantages	<ul style="list-style-type: none">• The user gets recommended the types of items they are interested in.• The user is satisfied by the type of recommendation.	New products can be introduced to the user.
Disadvantages	<ul style="list-style-type: none">• The user will never be recommended for different items.• depends on the user activity	User's previous history is required or data for products is required based on the type of collaborative method used.



3 Literature Review

In this section, we searched thoroughly for similar systems, either software applications or websites that provide the same features as our application “Count Me In”. The purpose of this search is to compare between our application and already existing systems to make sure that our application provides uniqueness that sets “Count Me In” apart from other recommendation system. This section helps us draw out, maintain, upgrade, or even delete features to help make our application the best version it can be.

3.1 Competitive Product Analysis

3.1.1 Findcourses.co.uk

Findcourses.co.uk is a website based on the United Kingdom that connect users to course providers in multiple fields. It has over (30000) courses and over 700 providers [13].

- It provides an educational search engine to help find the providers of the courses the user wants to learn.
- It provides some brief quizzes in different fields that recommend which course is most suitable for you (Figure 3) and then helps forward you to the recommended course provider.
- It provides filters to help you filter out the courses that you do not want such as “in company” courses.
- It provides the opportunity to rate and write a review on the course you took.

Upon search for the courses that the user wants to learn, he/she can filter the courses according to category (it recommends the popular categories), type of training, course location, and whether the user wants it to be online/classroom/in the company, price, study pace, and some other filters that the user can specify. Once the website displays the courses the user can then filter the result by the average rating, price: lowest to highest, closest start date, length, number of reviews, and highest review score. The website, however, does not recommend the courses after getting to know the user’s interests at the beginning, the user must take the quiz for that, and the quizzes supplied are for a very little number of courses (less than 10).



The figure consists of five screenshots from the findcourses.co.uk website. The first two screenshots show quizzes: 'Quizzes: Careers, Personality, Leadership style & more' and 'Which hobbies should I take up?'. The third screenshot shows a quiz titled 'Should you take a CMI or ILM management course?' with a bar chart comparing CMI and ILM scores. The fourth screenshot shows a result page for the CMI quiz with a bar chart and a 'Next question' button. The fifth screenshot shows a search results page for 'CMI ACCREDITED COURSES' with filters for category, type of course, course location, and online courses.

Course	Score
CMI	8
ILM	6

Figure 3 - findcourses.co.uk quiz interface and results

3.1.2 Marquette.edu

Marquette.edu is a university website you can use to apply to different colleges and programs. It has 75+ majors, 80+ minors, as well as 90+ programs [14].

- It allows users interested to explore the majors and minors.
- It allows users to discover graduate programs.
- It helps users connect with online learning programs.
- It provides a “choose your major quiz” to help the student choose the most suitable major for his/her personality. (Figure 4)

The university website is not a recommender system however it has a recommender feature that we are greatly interested in. The “choose your major quiz” gets to know the student beyond just their educational interests, and accordingly recommend majors that the user might want to consider. However, all the feature does is display the recommended majors, but it will not forward the user to the recommended major’s collage application page and there are no reviews or ratings of any sort.



Figure 4 - Marquette.edu "choose your major quiz" interface

3.1.3 Career explorer

A website that provides career suggestions to the user based on a set of questions to help people to choose their career, it contains a feature of recommendations for jobs and provides career matches based on your interests, goals, history, and workplace preferences. Figure 5 shows the interface of the application and some functions such as evaluation, questions, and the way the result is displayed [15].

- The user is allowed to register and start answering questions.
- The user is asked about personal information such as the degree of education.
- The user rates a set of jobs and excludes unwanted jobs.
- The website provides a list of suggested jobs based on user answers.

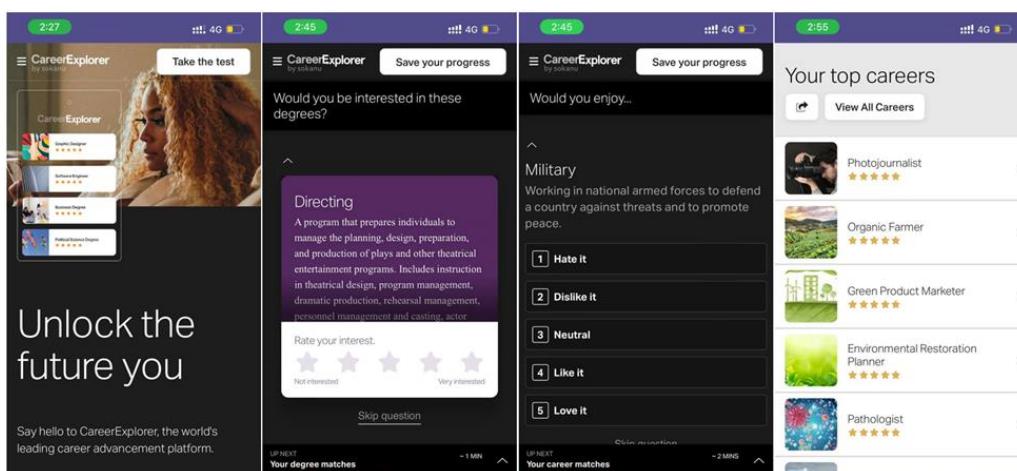


Figure 5 - Career Explorer interface



3.1.4 Enjoy Saudi

Enjoy Saudi is platform offers a calendar for all recreational activities around all parts of kingdom [16]. as shown in figure 6.

- The user can browse the calendar easily or search for specific activities in the search box.
- It allows the user to register and start managing his favorite activities on this application.
- It allows the user to choose his interests.
- It provides recreational activities throughout the year.
- It displays details about the event, its dates, rules, and location.
- It allows the user to share the activities with his family and friends.
- It allows the user to rate and review the activity.



Figure 6 - Enjoy Saudi application interface



3.1.5 Faaliat

It is a platform for quick and easy access to all international events and days related to government and private agencies in the kingdom of Saudi Arabia [17], as shown in figure 7.

It shows all events, their dates, duration, classification, and location in all cities of kingdom of Saudi Arabia.

- It allows the user to search for events.
- It allows the user to rate and review the activity.
- It allows the user to register for events.
- It allows the user to share events.
- It allows the user to add the event to their calendar.

When the user registers on this site or application, he will be able to discover and search for the activities he wants he can also join any event he wants and schedule it at the right time for his calendar.



Figure 7 - Faaliat website interface



3.2 Comparison table

Table 6 - Comparing main features of similar website/applications to Count Me In

Similar web/mobile applications	Comparing criteria								Languages
	Browsing content	Setting up a profile	Setting preference	Syncing events to calendar	Build a team	Rating	Reviewing	Website/Mobile application	
findcourses.co.uk	√	√	√ (Via filters)			√	√	Website	√ English
MARQUETTE UNIVERSITY BE THE DIFFERENCE.		√	√ (Via personality quiz)					Website	√ English Spanish
CareerExplorer by sokanu	√		√ (Via test)			√		Website	√ English
faaliyat.sa	√	√	√ (Via filters)			√	√	Both	√ English Arabic
Count me in (our app)	√	√	√ (Via filters)		√	√	√	Both	√ Arabic
	√	√	√	√	√	√	√	Mobile Application	√ English



“Count Me In”, is a hybrid recommender system that suggest extracurricular activities happening in the university to its students. We compared our application to other recommender system applications/website as presented in Table 6, and after thoroughly inspecting our competitors, we've concluded the following: almost every app/website has user-friendly interface, allows users to set up a profile, and allows users to rate and review, so we have decided to follow in their footsteps and maintain those features to increase usability.

What sets our application apart from other apps/websites is that our application tailored for KSU students provides a timeline where the user can keep up with the latest extracurricular activities added. By default, the timeline shows the recommended extracurricular activities to meet the users' interest, unlike our competitor that mostly use only filters in a drop-down list.



4 System Requirements

4.1 System Users

Students: The general characteristics of the user are a female KSU college student of different levels (18 - 22 years old).

Activity admin: Could either be club leaders or any authorized personnel that needs to upload activities or opportunities for students.

Super admin: The university administration.

All users should have basic knowledge in technology and can understand the Arabic language.

4.2 Requirements Elicitation and Analysis

Our methods for requirements elicitation were both interviews and questionnaires. Through them it came to our knowledge that our application is in fact, needed. The interview was the best technique that allows the interviewee to verify their understanding of the question and provide a detailed answer. Also, allows the interviewer to get a deeper answer. The questionnaires targeted KSU students while the interview targeted club leaders.

Through 151 responses to the questionnaires (Appendix A), we found out the following: more than half of the students of different levels have not enrolled in extracurricular activities, almost half of them are unaware of the activities taking place in the university, and more than 80% of the participants think that a platform that collects, recommend, and display the extracurricular activities would help them decide and enroll. After carefully analyzing the survey responses we noticed that the majority of the students have not enrolled in extracurricular activities despite wanting to because they do not know where to look for the activities they are interested in, and the various platforms make it harder for them to keep up with the extracurricular activities.

After the club leaders were interviewed (Appendix B), we noticed that many of them announce the events through social media sites, WhatsApp groups, and posters hanging around the college. Some of them does not face difficulty in reaching the target group for the events, but few would rather have one platform for announcements and advertisements, but others face difficulties if the event is held in a different college other than the one in which the



announcement was made in, and on the other hand, some find it impossible for the advertisement to reach everyone.

Also, all of them think that the feedback is very important to see whether the event was successful or not. It also motivates those in charge of effectiveness. Most of them get it directly after the event, face to face, through social media, or an evaluation form. And others do not see that there is a certain way to get the feedback.

There were inconsistencies in the survey responses and the interview answers, while the leaders think that they have reached the targeted groups, many of these groups showed that they were unaware of the events of which interests them.

4.3 User Interactions

Figure 8 presents the use case diagram.

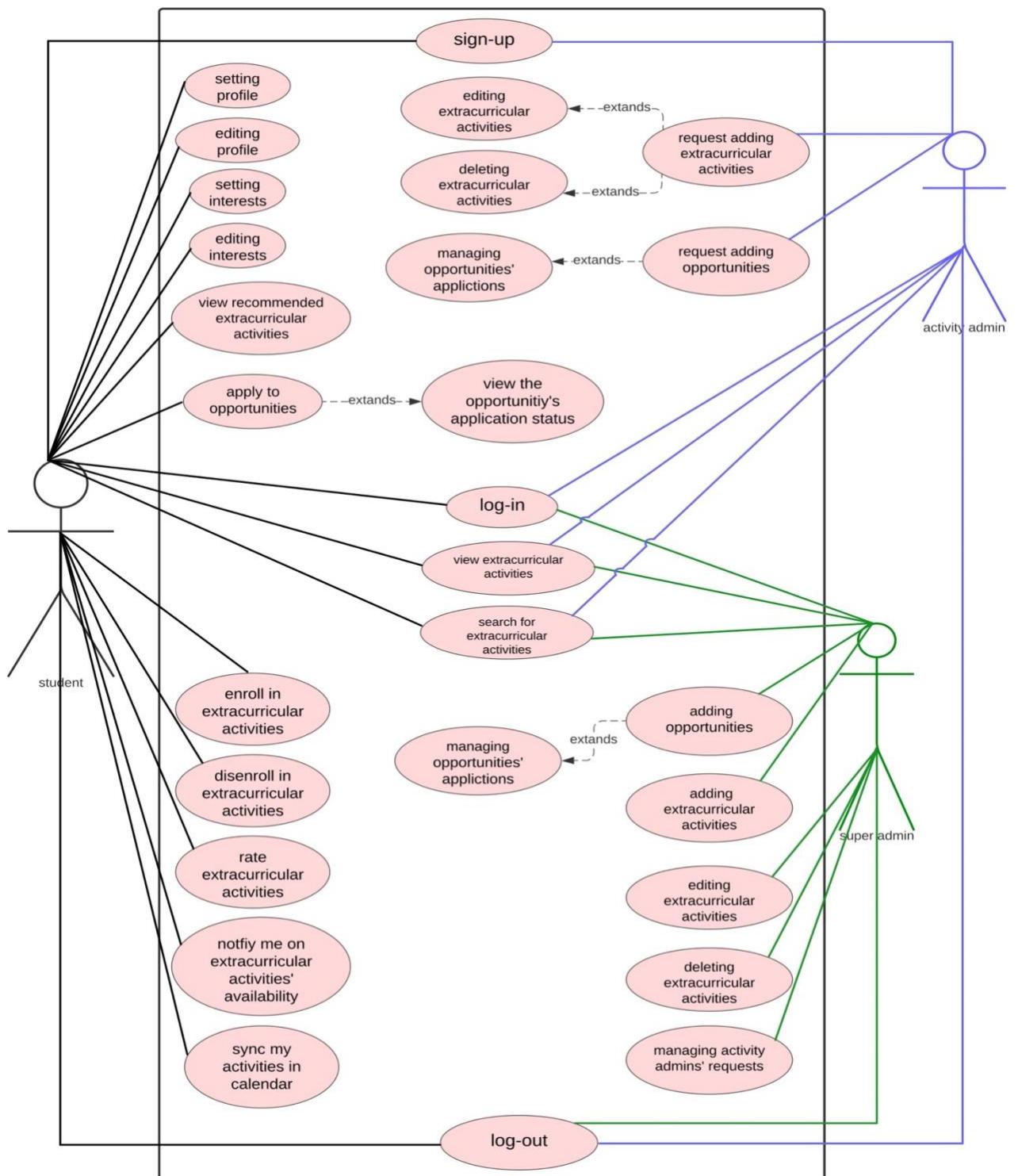


Figure 8 - Use Case Diagram



4.4 Product Backlog

Table 7 - Product Backlog

ID	PBIs (User Stories)	Size	Type	Status	Acceptance Criteria
1	As a student, I want to sign up so that I can make my own account to show my information and be able to benefit from all app features.	2	Feature	Done	<ul style="list-style-type: none">- If I fill in my information and click on the sign-up button. I will be transferred to the setting up profile page- If I fill my information and the password is less than 8 characters, I will get an error message- If I fill my information and the password is missing a special character or an uppercase or a lowercase or a number, I will get an error message- If I try signing up and the email is already in the database, I will get an Error message



2	As a student, I want to set up my profile so that I can personalize my page.	2	Feature	Done	- After signing up successfully I should be navigated to setting up a profile to be able to enter my information.
3	As a student, I want to edit my profile information so that I can reflect the changes in them	2	Feature	Done	- After changing my personal information and clicking “save changes” I would get a confirmation message.
4	As a student, I want to set my interests, so that the application recommends me activities that I would like.	5	Feature	Done	- If I sign up, then a form will appear that asks me to fill in my information and skills.
5	As a student, I want to edit my interests so that the system can update the recommended extracurricular according to my new interests	3	Feature	Done	- If I edit the choices, the user's preferences will be updated and displayed immediately.
6	As a student, I want to view all the extracurricular activities, so	6	Feature	Done	- All activities' information is displayed, nicely



	that I can see all the available activities.				written, and easy to grasp so that I can explore my options easily.
7	As a student I want to view the recommended extracurricular activities so that I can see the activities customized to my interests.	7	Feature	To-do	<ul style="list-style-type: none">- The recommended activities' information is displayed, nicely written, and easy to grasp and are true to my interests so that I can explore my options easily.
8	As a student, I want to search so that I can find a specific activity more quickly.	2	Feature	Done	<ul style="list-style-type: none">- If I search for a specific keyword, all extracurricular activities with that keyword will be displayed
9	As a student, I want to have the option of enrolling in any extracurricular activities so that I may fully engage.	5	Feature	Done	<ul style="list-style-type: none">- If I click on enroll to an activity's button it will be in my activities page- If I click on enroll to an activity's button and I have been enrolled successfully a confirmation



					<p>massage will appear</p> <ul style="list-style-type: none">- If I click on enroll to an activity's button and I have already been enrolled successfully in the past a massage will appear
10	As a student, I want to apply to an opportunity so that I can benefit from them and develop my skills.	3	Feature	Done	<ul style="list-style-type: none">- If I click on apply to an opportunities button and I have applied successfully a confirmation massage will appear- If I click on apply to an opportunities button and I have applied successfully to a message will appear
11	As a student, I want to be able to disenroll so that I can leave the chance to others.	3	Feature	Done	<ul style="list-style-type: none">- If I click on disenroll to an activity's button it will be removed



					from “my activities” page
12	As a student, I want to rate extracurricular activities so that admins can receive feedback from my experience.	4	Feature	In progress	<ul style="list-style-type: none">- I can't rate an activity unless it ended- After successfully rating an activity, I get a confirmation message
13	As a student, I want to view my application to opportunity status so that I can keep up with it	2	Feature	Done	<ul style="list-style-type: none">- If I navigate to my opportunities page my applications status will be displayed nicely and up to date
14	As a student, I want to get a notification on the extracurricular activities availability so that I don't miss my chance again	5	Feature	In progress	<ul style="list-style-type: none">- If I tried to enroll in a limited seated extracurricular activity that has been fully booked, I will get a message- If I tried to enroll in a limited seated extracurricular activity that has been fully booked, I want to get a



					notification if a seat is available
15	As a student, I want to synchronize my enrolled events with my calendar so that I can keep track with my events.	3	Feature	To-do	<ul style="list-style-type: none">- If I enroll in any activity, I will receive an access notification confirming my permission to sync to my calendar
16	As a student, I want to log out so that I can leave my account.	2	Feature	Done	<ul style="list-style-type: none">- If I click on the log out button, I will get a confirmation message to confirm my action- If I click on the log out button and confirm my action, then the system will redirect me to the log in page.
17	As a student, I want to log in so that I can access my account.	1	Feature	Done	<ul style="list-style-type: none">- If I go to the log in page and leave username and password unfilled, then click on log-in button the system will ask me to fill out my information



					<ul style="list-style-type: none">- If I go to the log in page and fill username and password successfully, then click on log-in button, the system will direct me to the homepage.
18	As an activity admin, I want to sign up so that I can make my own account to able to manage the extracurricular activities and be able to use app features.	2	Feature	To-do	<ul style="list-style-type: none">- If I fill in my information and click on the sign-up button. I will be transferred to homepage- If I fill my information and the password is less than 8 characters, I will get an error message- If I fill my information and the password is missing a special character or an uppercase or a lowercase or a number, I will get an error message



					<ul style="list-style-type: none">- If I try signing up and the email is already in the database, I will get an Error message
19	As an activity admin I want to view the extracurricular activities so that I can see the available opportunities.	7	Feature	To-do	<ul style="list-style-type: none">- Any activity's information that I click on will be nicely written and easy to grasp.
20	As an activity admin I want to search so that I can find a specific activity more quickly	2	Feature	To-do	<ul style="list-style-type: none">- If I search for a specific keyword, all extracurricular activities with that keyword will be displayed
21	As an activity admin, I want to put in a request to add extracurricular activities so that I can upload the activity for the students to view.	5	Feature	To-do	<ul style="list-style-type: none">- If I put in a request to add an activity successfully, I will get a confirmation message- If I put in a request to add an activity, I will be able to keep up with the activity's status
22	As an activity admin, I want to edit extracurricular activities so that if the information of the	4	Feature	To-do	<ul style="list-style-type: none">- A confirmation message will show up if I click update



	activity changes, I may reflect those changes.				to alter some information that has been updated and then click save.
23	As an activity admin, I want to remove extracurricular activities so that no done activities can be found.	3	Feature	To-do	<ul style="list-style-type: none">- If I click remove, a confirmation box asking whether I want to remove the selected activity displays to confirm my action
24	As an activity admin, I want to put in a request to add an opportunity so that I can upload the opportunity for the students to view.	4	Feature	To-do	<ul style="list-style-type: none">- If I put in a request to add an opportunity successfully, I will get a confirmation message- If I put in a request to add an opportunity, I will be able to keep up with the activity's status
	As an activity admin, I want to manage the student's application to opportunities to that I can approve/decline it.	2	Feature	To-do	<ul style="list-style-type: none">- If I approve or decline an application I will get a confirmation message to



					confirm my actions.
25	As an activity admin, I want to log out so that I can leave my account.	2	Feature	To-do	<ul style="list-style-type: none">- If I click on the log out button, I will get a confirmation message to confirm my action- If I click on the log out button and confirm my action, then the system will redirect me to the log in page.
26	As an activity admin, I want to log in so that I can access my account.	1	Feature	To-do	<ul style="list-style-type: none">- If I go to the log in page and leave username and password unfilled, then click on log-in button the system will ask me to fill out my information- If I go to the log in page and fill username and password successfully, then click on log-in button, the system



					will direct me to the homepage.
27	As a super admin, I want to log in with the given credentials so that I can access my account.	1	Feature	To-do	<ul style="list-style-type: none">- If I go to the log in page and leave username and password unfilled, then click on log-in button the system will ask me to fill out my information- If I go to the log in page and fill username and password successfully, then click on log-in button, the system will direct me to the homepage.
28	As a super admin I want to be able to manage admin's requests so that I can manage what appears in the students' system.	5	Feature	To-do	<ul style="list-style-type: none">- If I click approve, a confirmation box asking whether I want to approve the selected item displays to confirm my action.- If I click disapprove, a confirmation box asking whether I



					want to disapprove the selected item displays to confirm my action
29	As a super admin, I want to add extracurricular activities so that I can upload the activity for the students to view.	4	Feature	To-do	- When I click add, a confirmation message is shown.
30	As a super admin, I want to edit extracurricular activities so that if the information of the activity changes, I may reflect those changes.	4	Feature	To-do	- A confirmation message will show up if I click update to alter some information that has been updated and then click save.
31	As a super admin, I want to remove extracurricular activities so that no finished activities can be found.	3	Feature	To-do	- If I click remove, a confirmation box asking whether I want to remove the selected activity displays to confirm my action
32	As a super admin, I want to add opportunity so that I can upload the opportunity for the students to view.	4	Feature	To-do	- When I click add, a confirmation message is shown.
	As a super admin, I want to manage the student's application	2	Feature	To-do	- If I approve or decline an application, I will



	to opportunities to that I can approve/decline it.				get a confirmation message to confirm my actions.
33	As a super activity admin, I want to log out so that I can leave my account.	2	Feature	To-do	<ul style="list-style-type: none">- If I click on the log out button, I will get a confirmation message to confirm my action- If I click on the log out button and confirm my action, then the system will redirect me to the log in page.
34	As a user, I want to learn how to use the application and its main functions within the first use.	4	Non-functional requirement.	Done	<ul style="list-style-type: none">- The application should be easy to use with clear indicators and alert dialogs
35	As a user, I want the application to respond within seconds given good internet connection	3	Non-functional requirement.	Done	<ul style="list-style-type: none">- The time range of the application's response shall be between 1 to 3 seconds
36	As a user, I want the application to authenticate me so that no one can access my account	4	Non-functional requirement.	Done	<ul style="list-style-type: none">- I will log in using my email and password



					<ul style="list-style-type: none">- The password shall not be less than 8 characters
37	As a user, I want the application to be available whenever I need It	4	Non-functional requirement.	Done	<ul style="list-style-type: none">- The application should be available 98.5% of the time

We have started programing the “In progress” user stories, however, due to the time complexity and learning curve they will not be delivered this sprint. As for the “to do” user stories it has been decided previously to be delivered in sprint 2.



5 System Design

5.1 Architectural Diagram

The purpose of the system architecture activity is to define a comprehensive solution based on logically related and consistent principles, concepts, and properties [18]. There are many systems architecture models that meet the objectives of different technical systems [19], based on our project objectives and need we decided to use MVC architecture design that contains three main logical components which are model, view and controller.

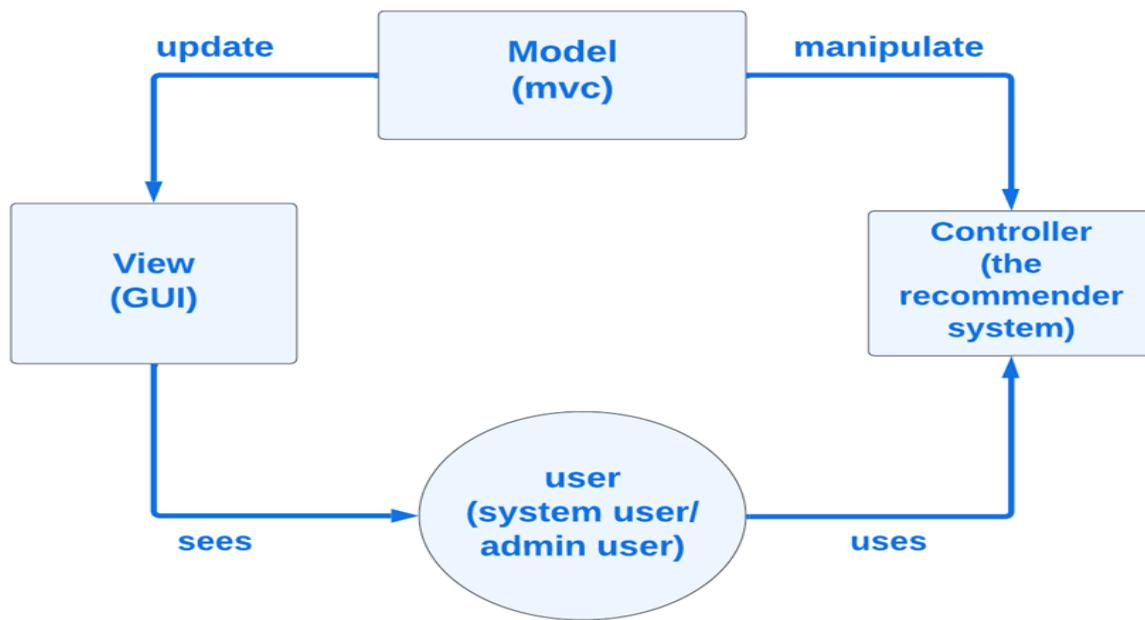


Figure 9 – MVC architecture

Figure 9 shows how we will imply it on our system the model defines the logic and holds the data processing and manipulation. The view handles the display of GUI. The controller sends and receives data between the user and the model parts [20]. To create a scalable and extensible project, each component is designed to handle specific development aspects of the application.

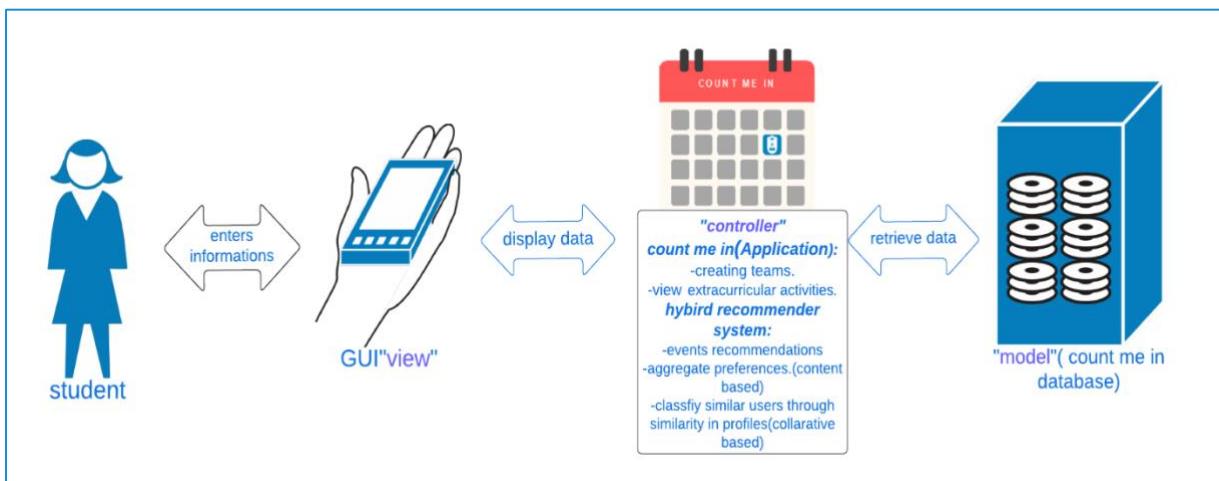


Figure 10 - "Count Me In" MVC architecture

Figure 10 shows the "Count me in" MVC architecture, the view represented by GUI where the students can create profiles, set and edit their interests then the controller (the recommender system) can use their interests to recommend relatable activities this is the content-based filter since it is a hybrid system it is also use the similarity between students' profiles to recommend similar activities and opportunities to the students that have a lot in common this is the collaborative-based filter. The model contains the "Count me in" database.



5.2 Class Diagram /DFD

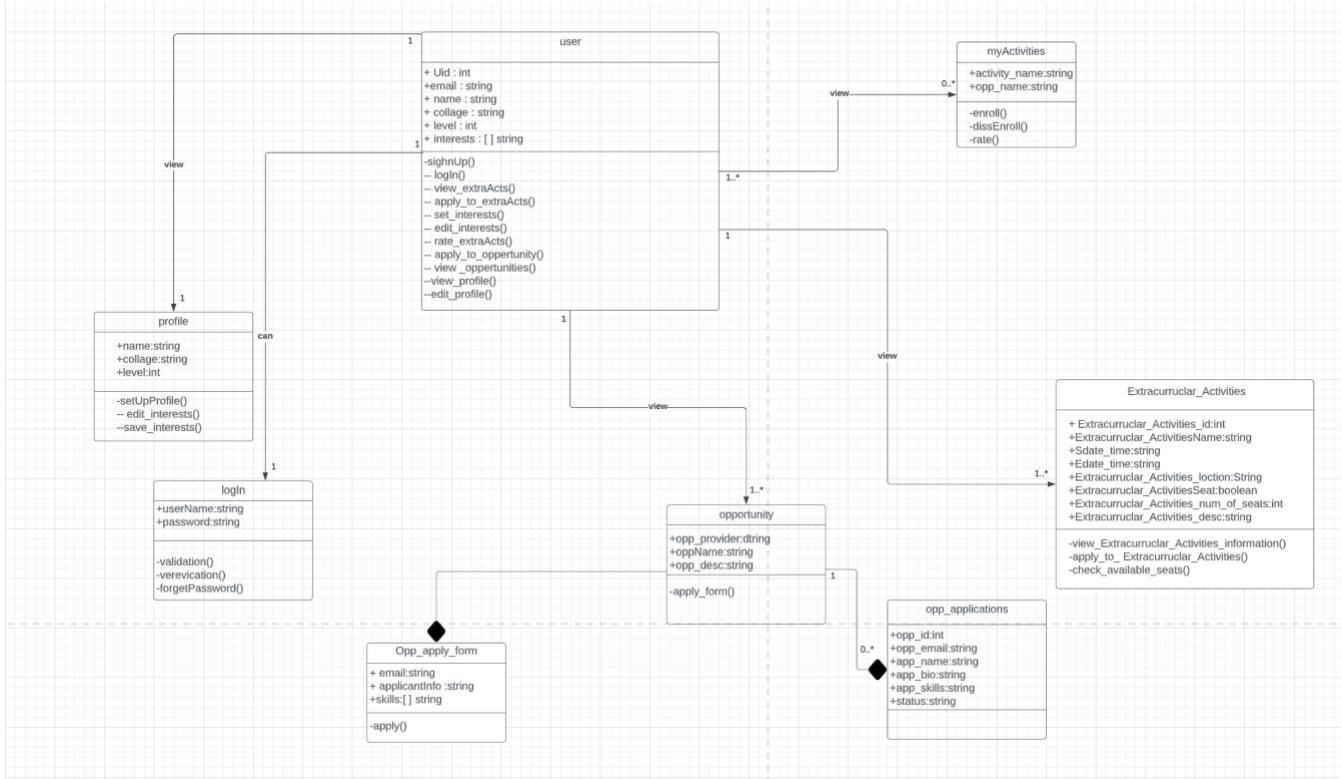


Figure 11 - Class Diagram



5.3 Component Level Design

In this section, we will show how three of our components are implemented as code by using flowcharts. First with Figure 12 which shows how the student applied for an opportunity, while Figure 13 it shows how the student can search for a specific activity, and the end with Figure 14 shows how the student can enroll in any extracurricular activities.

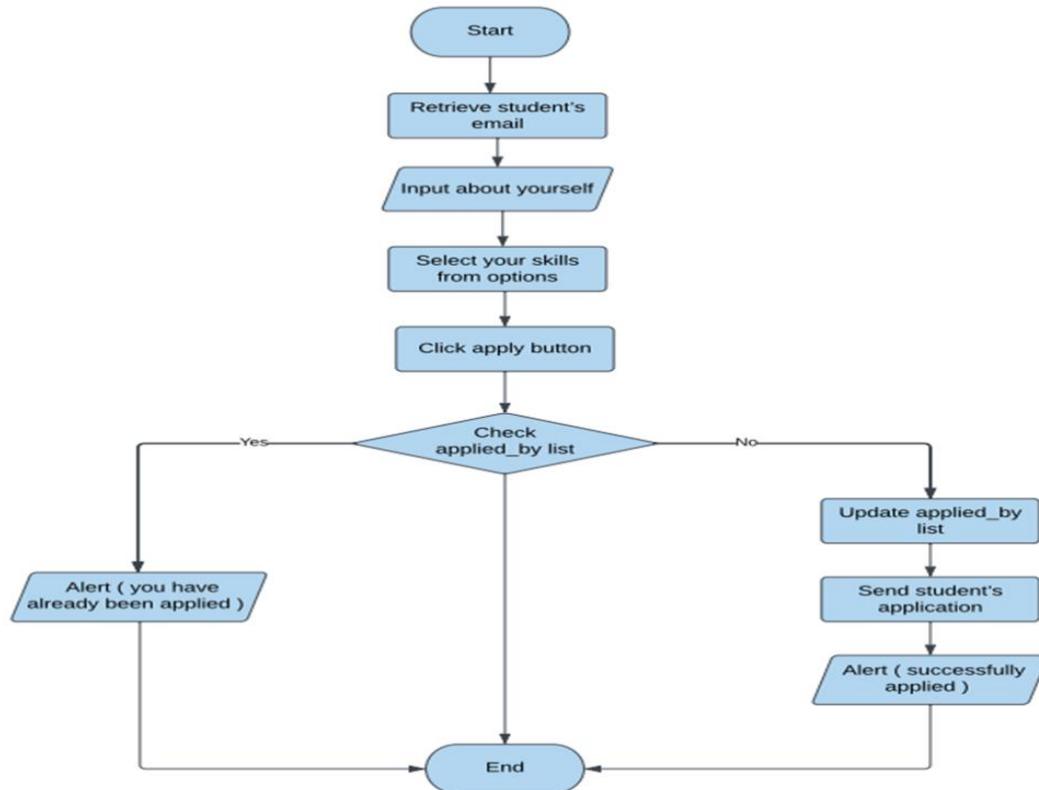


Figure 12 - "Apply" component

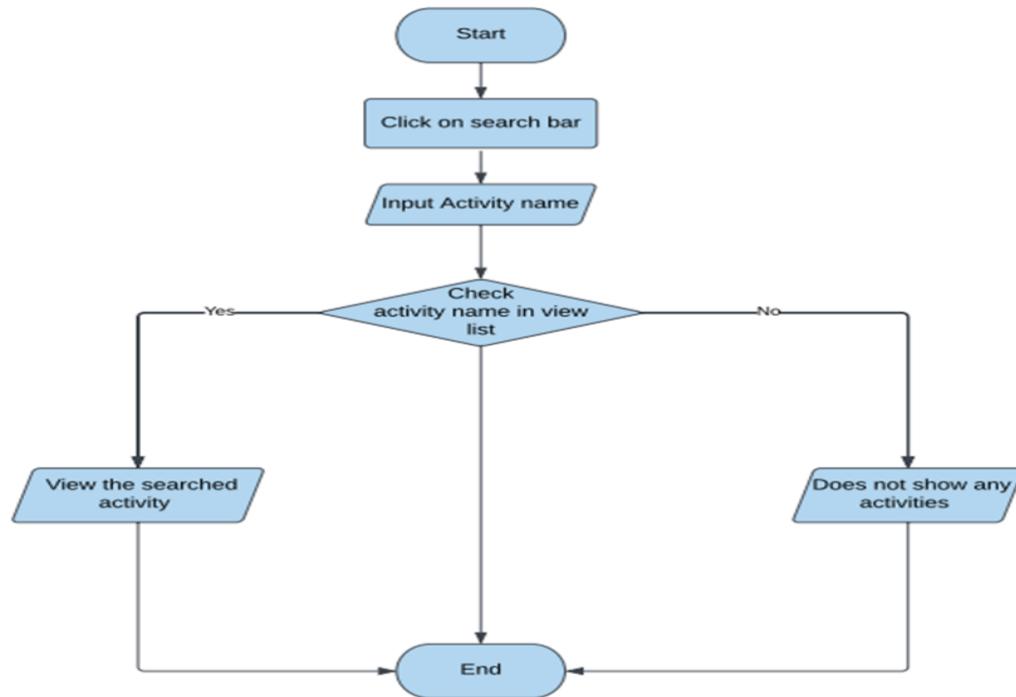


Figure 13 - "Search" component

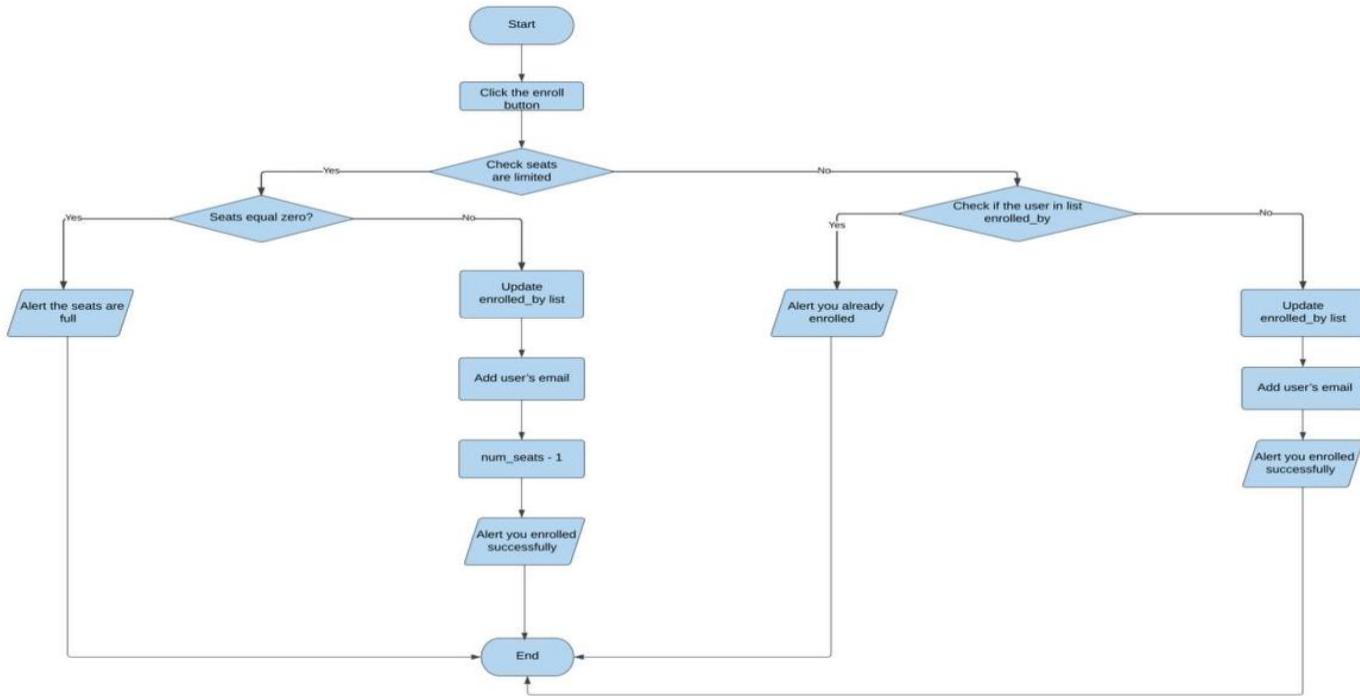


Figure 14 - "Enroll" Component



5.4 Data Design

5.4.1 Data Models

5.4.1.1 ER diagram

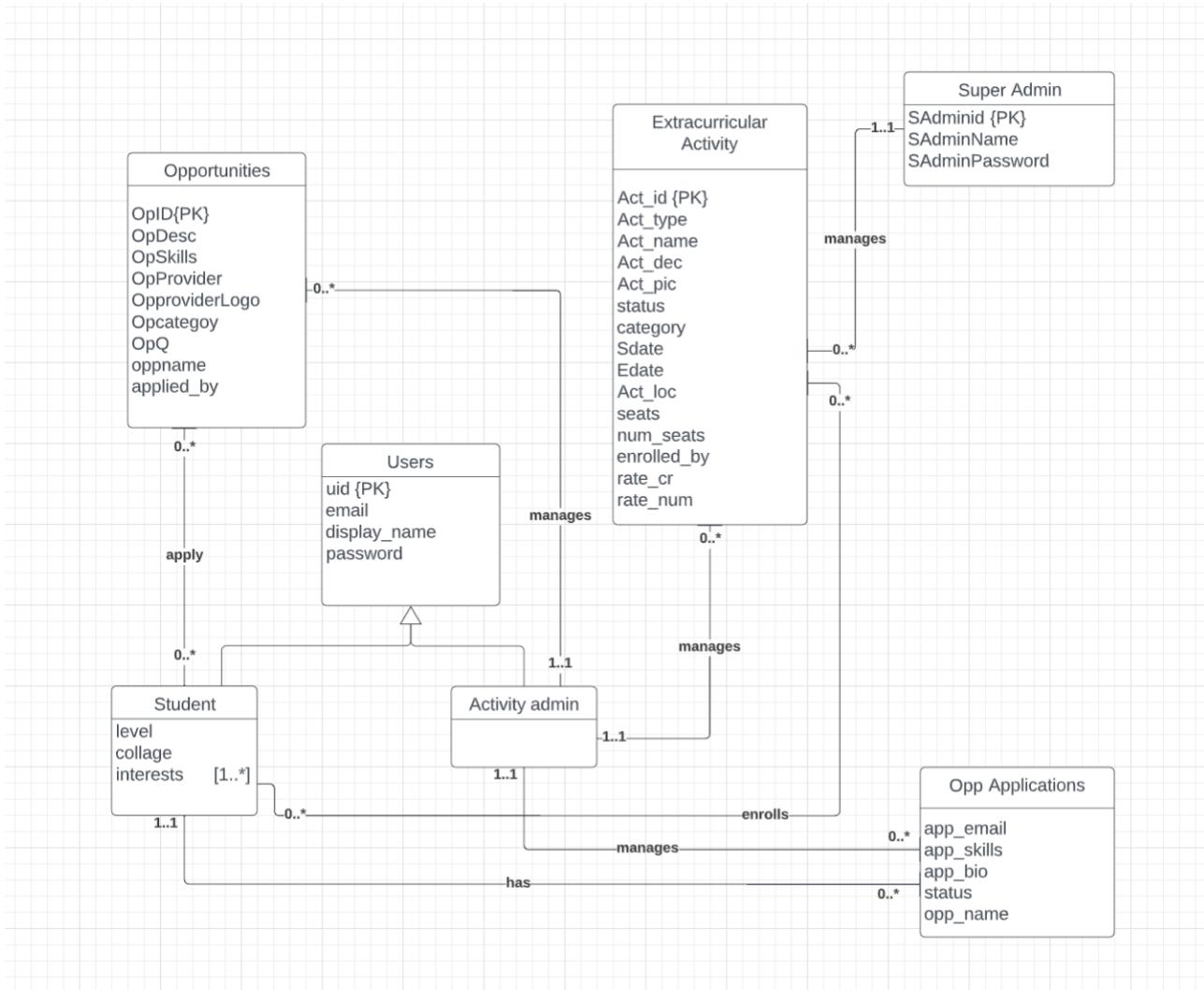


Figure 15 - ER Diagram



5.4.1.2 Non-relational data model

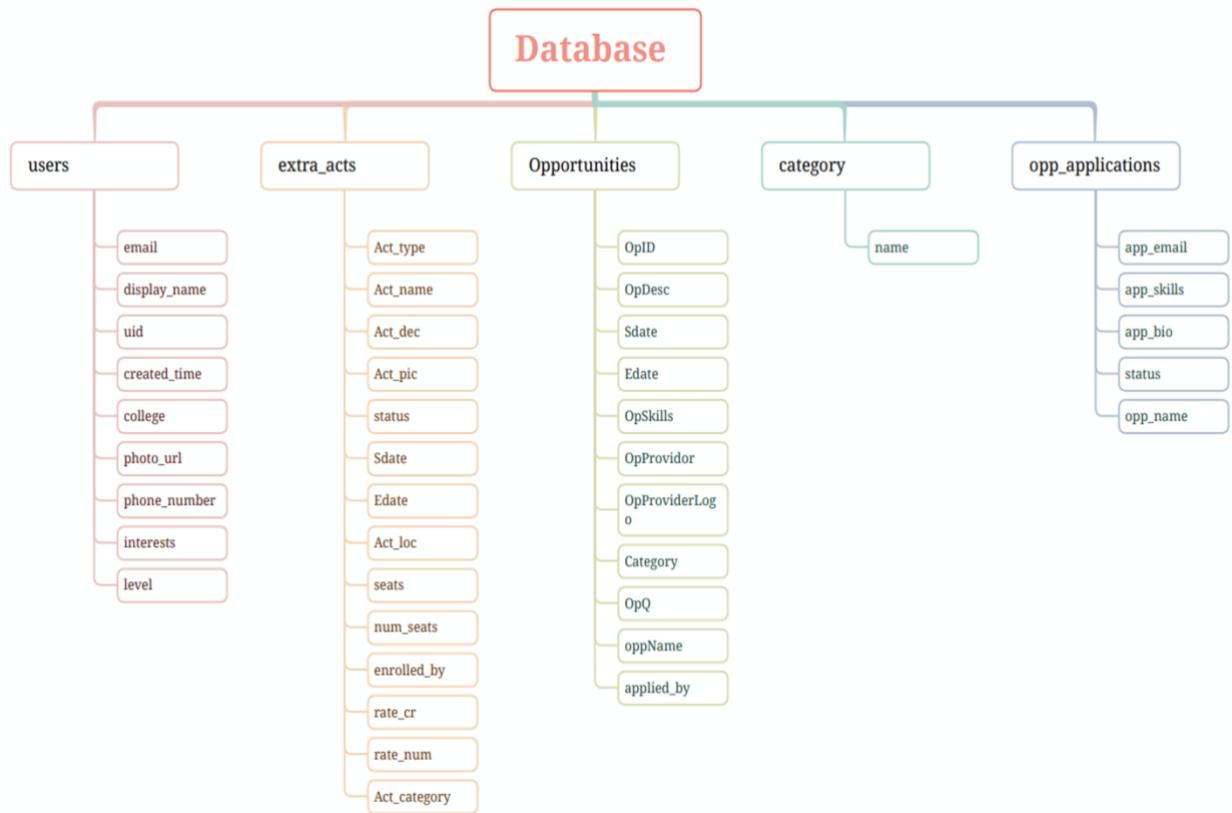


Figure 16 - Non-relational data model

5.4.2 Data Collection and Preparation

We gather information and data for the extracurricular activities from any relative source of producing them thus we contacted the leaders of clubs, and we were provided with excel sheets and reports on several extracurricular activities, as well as collecting them from the different social media accounts that announce them and done data cleaning.



5.5 Interface Design

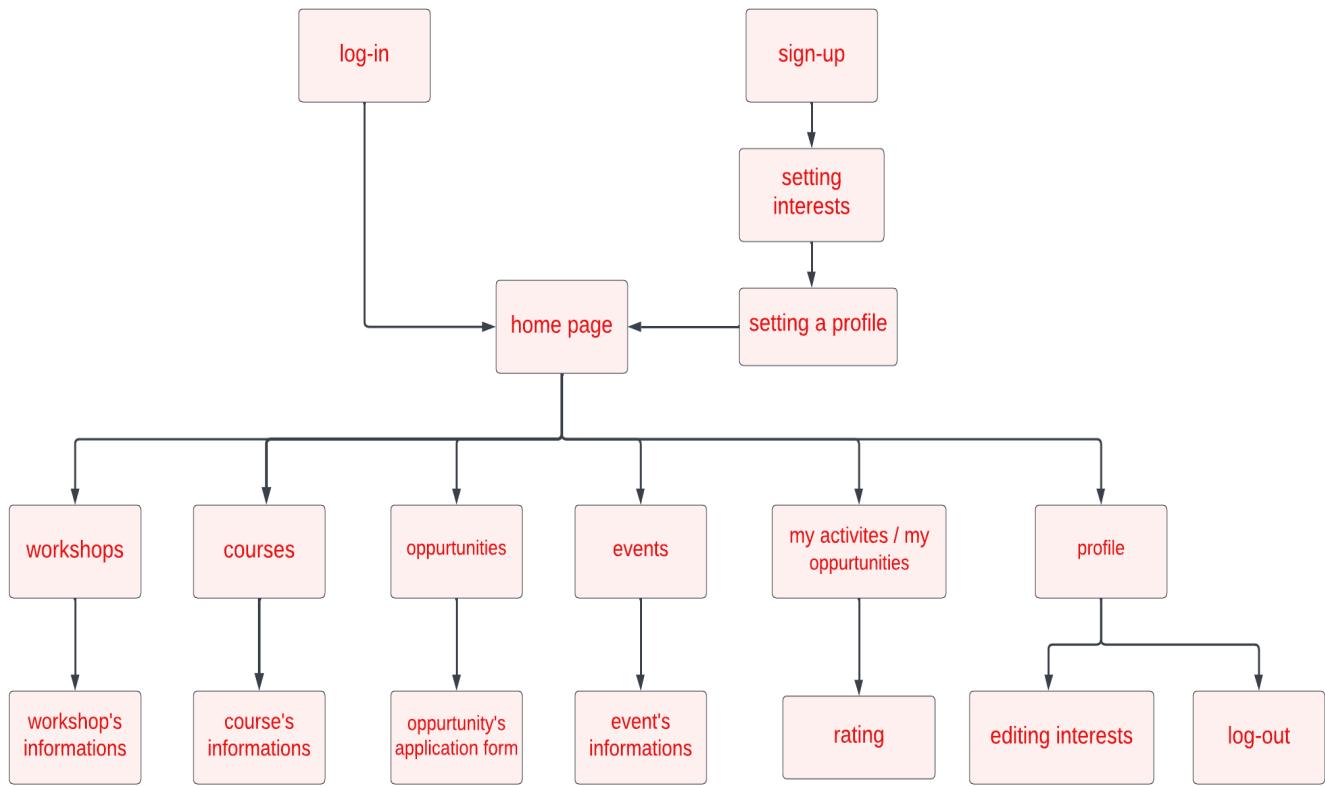


Figure 17 - Navigation Diagram

UX guidelines

- **Consistency and standards:** consistency in design throughout the application in font, buttons, and pages.
- **Aesthetic and minimalist design:** the interface is simple and only presents the needed information to avoid overwhelming the user.
- **Recognition rather than recall:** all functions are self-explanatory the user can easily navigate throughout the application on her own at the first use.
- **Error Prevention:** validations rules are implied on all text input fields, conformation messages.
- **Visibility of System Status:** alert messages used to ensure the system status for opportunities applications being sent, activity dashboard, editing interest's dashboard.



6 System Implementation

We faced significant challenges in choosing the development approach that would suit our problem. With minimum knowledge, we decided to use flutter and dart language, it was challenge, we had to learn and develop a flutter app in a limited time. Upon research we found “flutterflow” a GUI tool that helped us build the interface. Moreover, we faced a tough time connecting the firebase database with the flutter project and learning how to deal with it. The two significant challenges were that we lack the knowledge in developing a real mobile application and the limited time we must learn how the language and project should be.

Table 8 - Choosing interests code

Choosing interests process, code.
In this release, we decided to take the interests of the user into consideration to view the extracurricular activities, so we store it as a list. <pre>1 // Generated code for this CheckboxGroup Widget... 2 FlutterFlowCheckboxGroup(3 options: columnCategoryRecord!.name!.toList(), 4 onChanged: (val) => setState(() => checkboxGroupValues = val), 5 activeColor: Color(0x00000000), 6 checkColor: FlutterFlowTheme.of(context).alternate, 7 checkboxBorderColor: Color(0xFF95A1AC), 8 textStyle: FlutterFlowTheme.of(context).title3.override(9 fontFamily: 'Poppins', 10 color: Color(0xFF565656), 11), 12 itemPadding: EdgeInsetsDirectional.fromSTEB(10, 0, 0, 20), 13 initialized: checkboxGroupValues != null, 14) 15</pre>



```
@override
void initState() {
    super.initState();
    checkboxValues = widget.initiallySelected ?? [];
    if (!widget.initialized && checkboxValues.isNotEmpty) {
        SchedulerBinding.instance.addPostFrameCallback(
            (_)
                => widget.onChanged(checkboxValues),
        );
    }
    changeSelectedValues?.addListener(() {
        if (widget.selectedValuesVariable != null &&
            selectedValues != null &&
            checkboxValues != selectedValues) {
            setState(() => checkboxValues = List.from(selectedValues!));
        }
    });
}
```



Table 9 - Enrollment code

Enrollment process, code.

Our application allows the users to enroll in any extracurricular activity they want, the function checks if you had enrolled before or not to avoid multiple enrollments.

```
    ),
    Padding(
      padding: EdgeInsetsDirectional.fromSTEB(0, 10, 0, 40),
      child: FFBButtonWidget(
        onPressed: () async {
          if (scrollingContainerExtraActsRecord!.seats!) {
            if (scrollingContainerExtraActsRecord!
                .numSeats == 0) {
              ScaffoldMessenger.of(context).showSnackBar(
                SnackBar(
                  content: Text(
                    'جميع المقاعد محجزة',
                    style: TextStyle(
                      color: FlutterFlowTheme.of(context)
                        .primaryBtnText,
                      fontWeight: FontWeight.bold,
                    ),
                  ),
                  duration: Duration(milliseconds: 4000),
                  backgroundColor: Color(0xE1FF2323),
                ),
              );
            } else {
              if (scrollingContainerExtraActsRecord!
                  .enrolledBy!
                  .toList()
                  .contains(currentUserEmail)) {
                await showDialog(
                  context: context,
                  builder: (AlertDialogContext) {
                    return AlertDialog(
                      title: Text(
                        'تم التحاقك بهذا النشاط مسبقاً',
                      ),
                      content: Text(
                        'إلغاء التسجيل "أنشطةي" توجهك لصفحة',
                      ),
                      actions: [
                        TextButton(
                          onPressed: () => Navigator.pop(
                            alertDialogContext),
                          child: Text('تم'),
                        ),
                      ],
                    );
                  },
                );
              } else {
                final extraActsUpdateData = {
                  'enrolled_by': FieldValue.arrayUnion([
                    currentUserEmail]),
                  'num_seats': FieldValue.increment(-(1)),
                };
                await scrollingContainerExtraActsRecord!
                  .reference
                  .update(extraActsUpdateData);
                await showDialog(
                  context: context,
                  builder: (AlertDialogContext) {
                    return AlertDialog(
                      title: Text(
                        'تم التحاقك بهذا النشاط بنجاح',
                      ),
                      actions: [
                        TextButton(
                          onPressed: () => Navigator.pop(
                            alertDialogContext),
                          child: Text('تم'),
                        ),
                      ],
                    );
                  },
                );
              }
            }
          }
        },
      ),
    ),
  );
}
```



Table 10 - Applying to opportunities code

Applying to opportunities, code.

For the users that want to apply to an opportunity an application form will appear so they can fill their information, i.e., email, a brief description of themselves, and choose their skill. The function does not allow multiple application to one opportunity.

```
        ), // BoxDecoration
      child: Padding(
        padding: EdgeInsetsDirectional
          .fromSTEB(20, 0, 20, 0),
      child: TextFormField(
        controller: opemailController,
        obscureText: false,
        decoration: InputDecoration(
          hintText:
            'البريد الإلكتروني',
          hintStyle:
            GoogleFonts.getFont(
              'Open Sans',
              color: Colors
                .Color(0xFF565656),
            ),
        enabledBorder:
          UnderlineInputBorder(
            borderSide: BorderSide(
              color:
                Colors
                  .Color(0x00000000),
              width: 1,
            ), // BorderSide
        borderRadius:
          const BorderRadius
            .only(
              topLeft:
                Radius.circular(
                  4.0), // Radius.circular
              topRight:
                Radius.circular(
                  4.0), // Radius.circular
            ), // BorderRadius.only
        ), // UnderlineInputBorder
```



```
        return;
    }
},
obscureText: false,
decoration:
  InputDecoration(
    hintText: 'نسبة عند',
    hintStyle: GoogleFonts(
      .getFont(
        'Open Sans',
        color: Colors(
          0xFF565656), // Color
        fontWeight:
          FontWeight
            .normal,
        ),
    ),
    enabledBorder:
      UnderlineInputBorder(
        borderSide:
          BorderSide(
            color: Colors(
              0x00000000), // Color
            width: 1,
          ), // BorderSide
        borderRadius:
          const BorderRadius
            .only(
              topLeft: Radius
                .circular(
                  4.0), // Radius.circular
              topRight: Radius
                .circular(
                  4.0), // Radius.circular
            ), // BorderRadius.only
      ), // UnderlineInputBorder
    focusedBorder:
      UnderlineInputBorder(
        borderSide:
```



```
), // BoxDecoration
child: Align(
  alignment:
    AlignmentDirectional(θ, θ),
  child: FlutterFlowDropDown(
    options:
      formOpportunitiesRecord!.  

        .opSkills!
        .toList()
        .toList(),
    onChanged: (val) => setState(  

      () => skillValue = val),
    width: 300,
    height: 50,
    textStyle:
      GoogleFonts.getFont(
        'Open Sans',
        color: □Color(0xFF565656),
      ),
    hintText:
      'حدد مهاراتك',
    fillColor: □Color(0xFFE0E0E0),
    elevation: 2,
    borderColor:
      □Colors.transparent,
    borderWidth: 0,
    borderRadius: 0,
    margin: EdgeInsetsDirectional
      .fromSTEB(12, 4, 12, 4),
    hidesUnderline: true,
  ), // FlutterFlowDropDown
), // Align
), // Container
), // Padding
],
), // Column
```



```
        },
    );
} else {
    final opportunitiesUpdateData = {
        'applied_by':
            FieldValue.arrayUnion(
                [currentUserEmail]),
    };
    await formOpportunitiesRecord!
        .reference
        .update(
            opportunitiesUpdateData);
await showDialog(
    context: context,
    builder: ( alertDialogContext ) {
        return AlertDialog(
            title: Text(
                '.لقد تم تقديمك على هذه الفرصة بنجاح', // Text
            actions: [
                TextButton(
                    onPressed: () =>
                        Navigator.pop(
                            alertDialogContext),
                    child: Text('تم',
                        ), // TextButton
                ],
            ); // AlertDialog
    });
}
```

More can be found in our GitHub repository: <https://github.com/raghads123/2022-GP1-18>



7 System Testing

7.1 User Acceptance Testing

User Acceptance Testing determines whether a feature or program achieves its goals and is often carried out by the end users or clients. The program cannot be made available to the public until UAT is finished [21]. So, in this part, we will describe the testing procedures used to evaluate our system. We will begin by detailing the participant's demographics as well as the questions and findings from the survey.

7.1.1 Demographics of Participants

We tested our application “Count Me In” on 10 KSU students, from different levels, Table 11 shows the details of the participants’ demographic.

Table 11 - Demographic of Participants

Variable	Classification	Number of participants
Age	18-19 years old	2
	20-22 years old	8
Level	Level 4	2
	Level 9	1
	Level 10	6
	Level 11	1
College	College of Computer and Information Science	8
	College of Business Administration	1
	College of Architecture and Planning	1
Major	Information Technology	5
	Information Science	3
	Business	1
	Urban Architecture	1
	Low	0



Experience using mobile applications.	Medium	0
	High	10

7.1.2 Questionnaire/Interview Results

We presented the participants in the user acceptance test with a questioner to determine the usability of our application, using a scale from “1” to “5”, where “1” indicates total agreement and “5” indicates total disagreement. Figures 18 to 27 shows the results of the questionnaire results.

- I think I will use this application regularly.

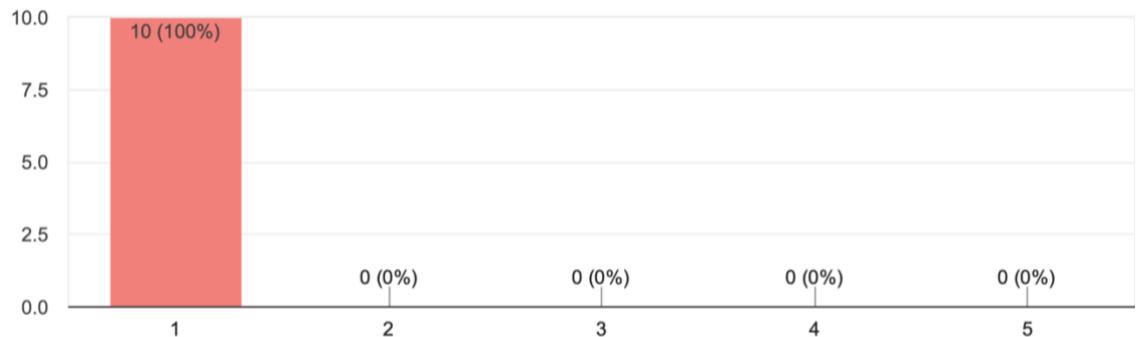


Figure 18 - UAT Question (1) Results

- I think the application is complicated.

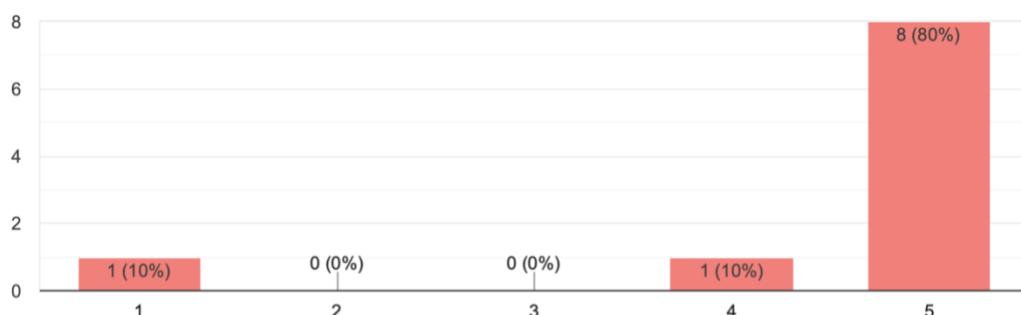


Figure 19 - UAT Question (2) Results



- I found the application clear and easy to use.

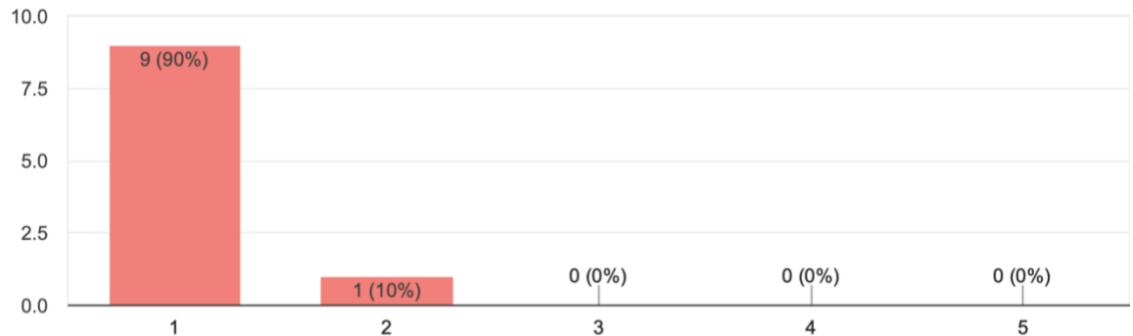


Figure 20 - UAT Question (3) Results

- I think most students will learn how to use the application in 1-2 days.

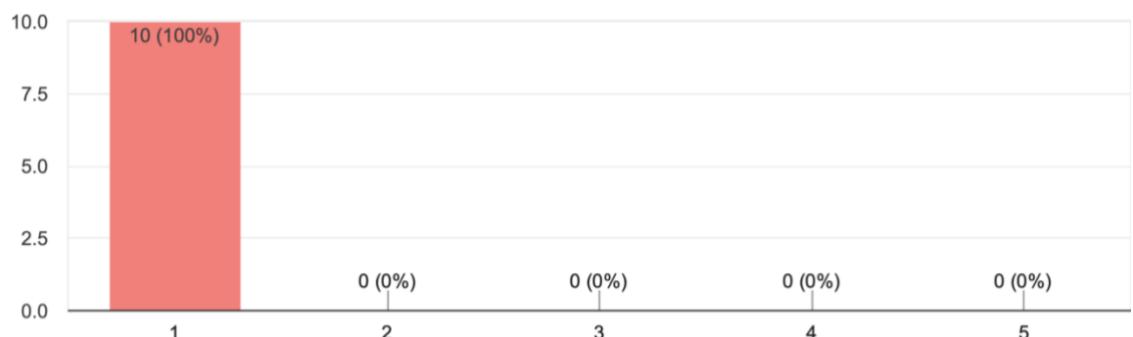


Figure 21 - UAT Question (4) Results

- I think I need help using this application.

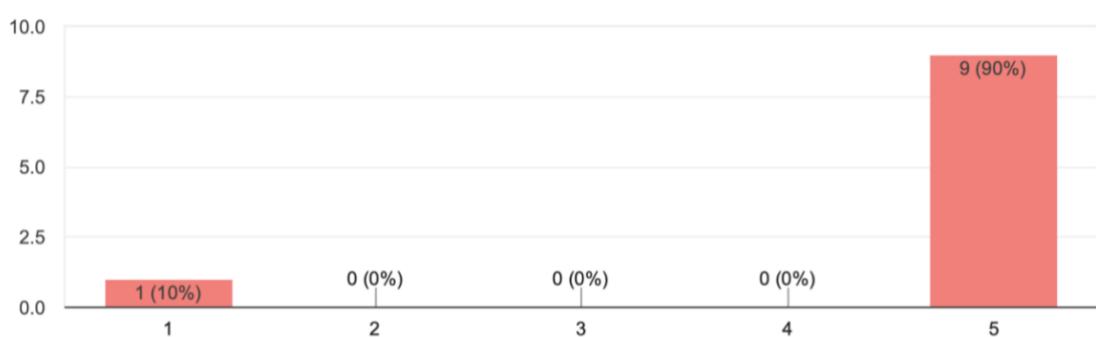


Figure 22 - UAT Question (5) Results



- I felt very comfortable with the colors and the interface of the application.

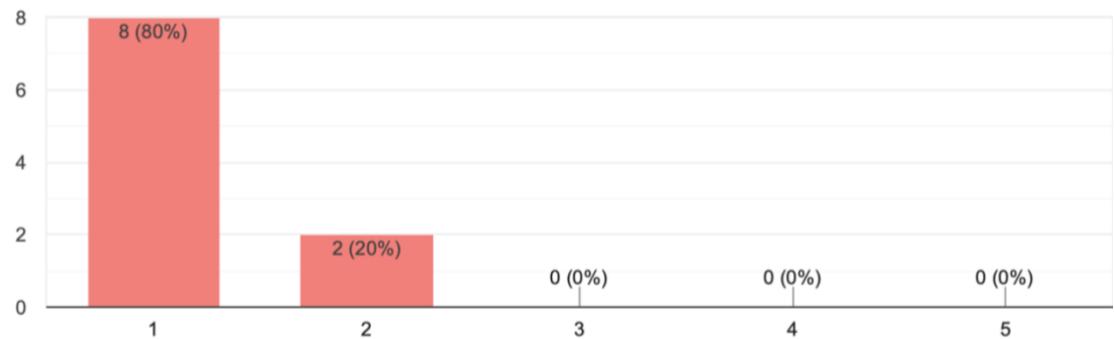


Figure 23 - UAT Question (6) Results

- I think the data is displayed nicely.

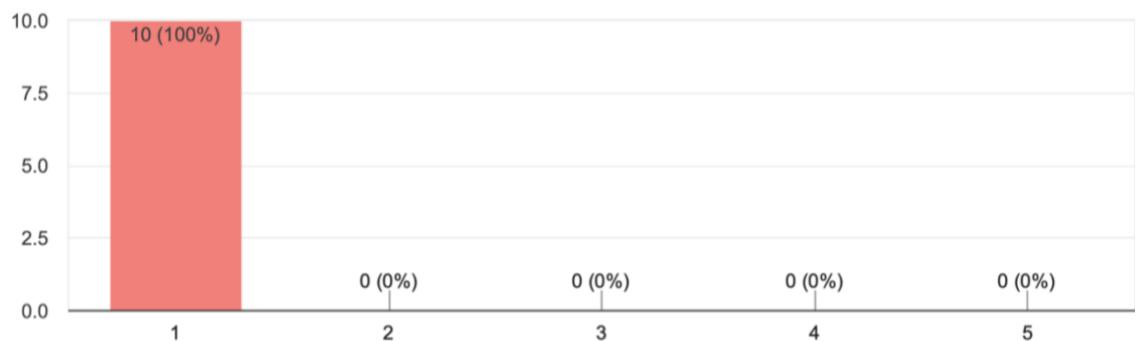


Figure 24 - UAT Question (7) Results

- I would recommend this application to others.

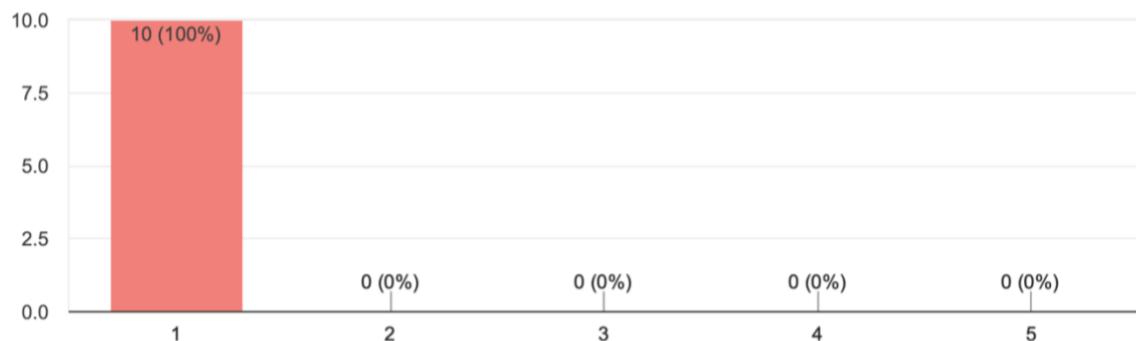


Figure 25 - UAT Question (8) Results



- I needed to know a lot of information about the application before I used it.

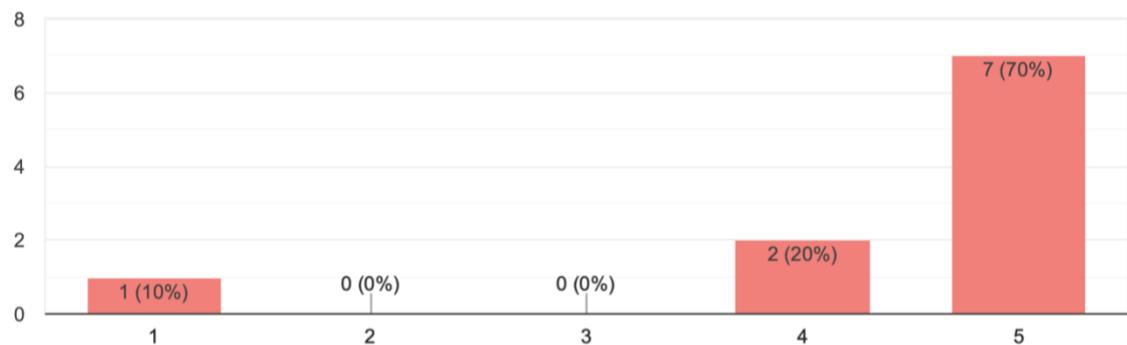


Figure 26 - UAT Question (9) Results

- I found the different functions of the application well connected.

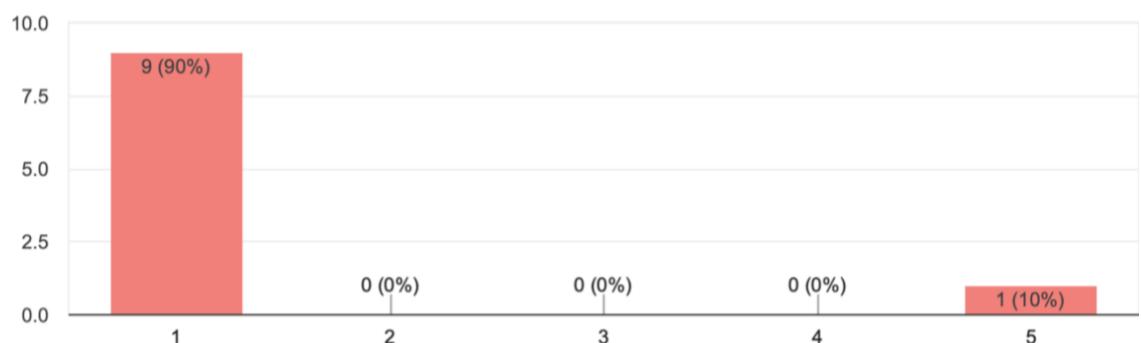


Figure 27 - UAT Question (10) Results

7.2 Discussion

The feedback is very positive and most of the students emphasize the importance of the solution we proposed which makes the excellent implementation must be simple and practical yet well planned and logically connected, we also took into consideration matching the real-world procedures and policies. However, the user testing sessions help us to improve the overall user experience it was not major adjustments, but we have done modifications corresponding to user suggestions such as using conformation messages more and leading design and using common icons and patterns.



8 Conclusions and Future Work

To conclude, “Count Me In” application focuses on providing a recommender system that makes finding activities easier. It aims at supporting both the students and explore their interests and talents, refine their skills, and make benefit from the university resources to better help them and their future. In this final section, an outline of the conclusion drawn from the document as a fulfillment towards the purpose of “Count Me In” project. It also highlights the challenges during the software development. At the end of this chapter, the limitations, local and global impact of our project and recommendations for future work will be given global and local impact.

- Global and local impact.

“Count Me In” will continue to develop a recommender system mobile application, that recommends extracurricular activities for college students (system users) based on their majors and interests, through using the application, many students will improve the process of finding and participating in extracurricular activities and opportunities and save the students’ effort and time. Furthermore, other universities will be benefited by using the app in organizing their extracurricular activities

- Problems and challenges encountered during the software development

At the implementation, we were unfamiliar with the Flutter framework, and there were some exceptions we encountered that were unclear to solve. Time complexity was another issue we dealt with while learning a new framework and studying/programming for other university courses. Despite these challenges, we have become more organized by managing our time wisely and learning to solve unclear exceptions by ourselves.

- Limitations of the system.

The application currently only supports Android and the Arabic language.

- The main contribution of the project

Our project contributed to enriching the academic experience for college students, encouraging them to explore their interests and talents, refine their skills and make benefit from the university resources to better help them and their future. All the students will be up to date on the activities and opportunities.



- Future work.

In the second release of the project, we will add more features, Additionally, we plan to keep improving our application, for example:

- Build a recommender system.
- events sync in calendar
- the users will be rating and reviewing activities.
- notifications on extracurricular activities' availability,
- for activity admin and super admin: view extracurricular activities, search for extracurricular activities.
- For activity admin: request adding opportunities, request adding/deleting/editing extracurricular activities
- For super admin: adding opportunities, adding/deleting/editing extracurricular activities, managing activity admins' requests



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10 Appendix A: Survey Questions and Answers

Below are the responses of the students (system users) to the survey conducted for requirement elicitation.

1. What level are you? ما مستواك التعليمي؟

151 responses

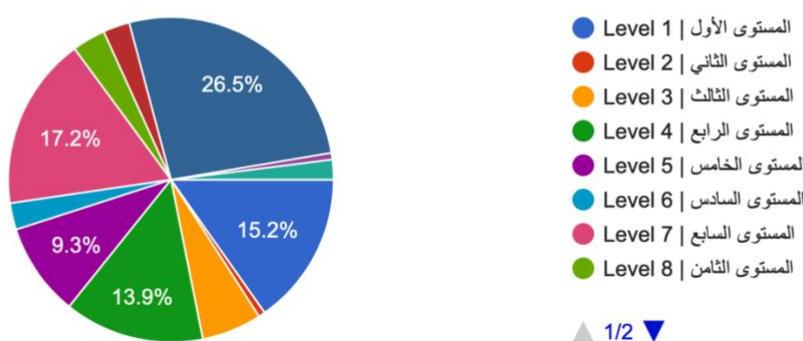


Figure 28 - System user Survey Question (1) Results 1 of 2

1. What level are you?

ما مستواك التعليمي؟

151 responses

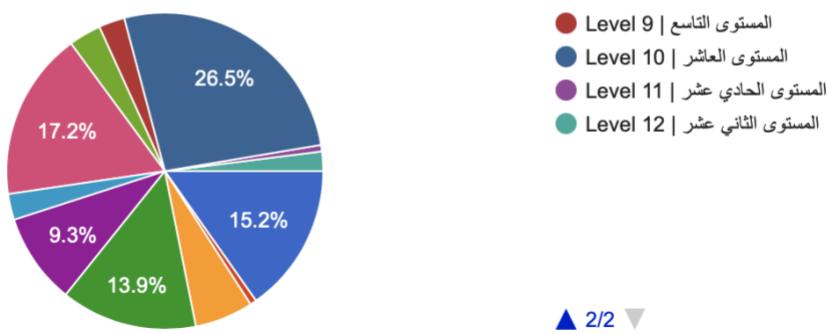


Figure 29 - System user Survey Question (1) Results 2 of 2



2. Have you ever enrolled in the university's extracurricular activities(i.e. courses - clubs)? هل سبق لك الاتحاق بانشطة الجامعة اللامنهجية (كالدورات والنوادي)؟
151 responses

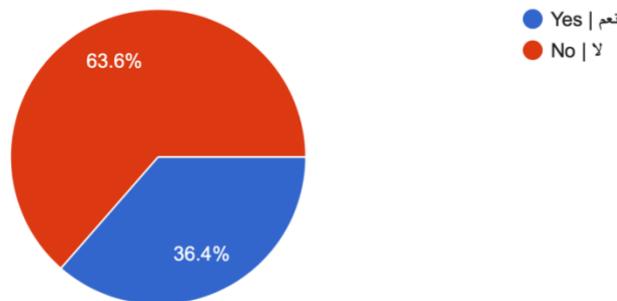


Figure 30 - System user Survey Question (2) Results

3. If your answer is yes, please list them below.

إذا كانت إجابتك نعم، الرجاء ذكر هم بالأسفل.

52 responses

- لا
- سبق و دخلت ناديين و حضرت فعاليات نوادي
- النادي الثقافي لكلية الحاسوب
- سجلت بثلاث نوادي الاخير نادي عقول رقميه
- نوادي كلية علوم الحاسوب والمعلومات
- نادي الانقلash
- نادي الصيدلة ونادي العقول الرقمية ونادي الانجليزي
- Vision 2030
- Social and cultural club CCIS
- Digital minds
- English Speaking center

Figure 31 - System user Survey Question (3) Results 1 of 7



3. If your answer is yes, please list them below.

إذا كانت إجابتك نعم، الرجاء ذكرهم بالأمثل.

52 responses

النادي الثقافي الاجتماعي

النادي الاجتماعي بالحاسب / نادي الرياضيات / نادي فيزيكا/ نادي علم النفس

نادي العلاج الوظيفي/ نادي الفنون/ النادي الثقافي الاجتماعي وبعض الدورات المختلفة

نادي العلاج الوظيفي

نادي طلابي

- The CSE

- cyber security club

- النادي الثقافي الاجتماعي في كلية الحاسب

نادي رتاع/نادي القراءة / دورات متعددة عن بعد

الثقافي ونظم المعلومات الادارية لجنة الاعلام

Figure 32 - System user Survey Question (3) Results 2 of 7

3. If your answer is yes, please list them below.

إذا كانت إجابتك نعم، الرجاء ذكرهم بالأمثل.

52 responses

النادي الثقافي الاجتماعي

نادي المحاسبة، النادي الثقافي الاجتماعي بكلية الادارة، نادي الاستثمار، الورشة الفنية

الملنقي العلمي الثاني عشر

GDSC club

نادي الرياضيات

النادي الثقافي الخاص بالكلية

نادي الثقافى

دورة الاسعافات الاولية

نوادي الجامعة

نادي، التغذية الاكلينيكية

Figure 33 - System user Survey Question (3) Results 3 of 7



3. If your answer is yes, please list them below.

إذا كانت إجابتك نعم، الرجاء ذكرهم بالأسفل.

52 responses

فريق أرشندي

نادي التغذية السريرية

نوادي الجامعة

اعمال تطوعية خارج الجامعة مثل لقاء تعريفي بتخصصات الكلية في مدارس ابن خلدون الخاصة

نادي علم النفس

نادي كلية التربية

النادي الثقافي لكلية اللغات والترجمة

نادي نبض التربية التحقت به اول مره كعضوه في اللجنة الوجستيه بعدها كعضوه في اللجنة الاعلاميه وهذه السنه التحق كقائد للجنه الجوده.

ايضاً التحقت بنادي المترجم هذى السنه كعضوه في لجنه الاعلام

و فيما سبق التحقت ايضاً باندية كنادي علم النفس ونادي

المساء ، شات الدسم

Figure 34 - System user Survey Question (3) Results 4 of 7

3. If your answer is yes, please list them below.

إذا كانت إجابتك نعم، الرجاء ذكرهم بالأسفل.

52 responses

المرسم وورشات الرسم

النادي الثقافي الاجتماعي

نادي الاحياء الدقيقة والنبات

نادي الكيمياء الحيوية

نادي فخر التطوع ، نادي التسويق

نادي القراءة و نادي المعلومات

: النواحي

الادارة - المحاسبة - الاستثمار - الطلبة المتفوقين

النادي الثقافي لكلية الحاسوب - نادي ضياء - الشراكة

نادي ضياء - الثقافي للعلوم - العقول الرقمية

نادي ضياء-النادي الثقافي الاجتماعي

Figure 35 - System user Survey Question (3) Results 5 of 7



3. If your answer is yes, please list them below.

إذا كانت إجابتك نعم، الرجاء ذكرهم بالأمثل.

52 responses

نادي الاعلاميات

نادي ضياء

نادي الفن

فريق وحدة الابتكار الاجتماعي

نادي النبات والاحياء الدقيقة ، دورات معهد ريادة الاعمال في جامعة الملك سعود.

نادي الفصحي

النادي الثقافي بكلية الحاسب

نادي نبض العام - ونادي علم النفس

Cultural club (science college)

Phyzica

نادي الأحياء الدقيقة والنبات

.....

Figure 36 - System user Survey Question (3) Results 6 of 7

3. If your answer is yes, please list them below.

إذا كانت إجابتك نعم، الرجاء ذكرهم بالأمثل.

52 responses

Cultural club (science college)

Phyzica

نادي الأحياء الدقيقة والنبات

النادي الثقافي والإجتماعي بكلية الحاسب

نادي الاستثمار

نادي المالية نادي التسويق نادي الثقافي الاجتماعي

نادي العقول الرقمية والنادي الثقافي

النادي الثقافي بكلية الحاسب

ضياء - ثقافي الحاسب

النادي الثقافي

Figure 37 - System user Survey Question (3) Results 7 of 7



إذا كانت إجابتك لا، الرجاء اختيار السبب.

94 responses

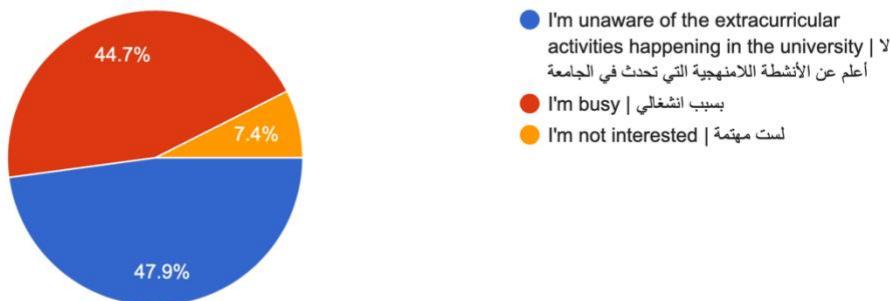


Figure 38 - System user Survey Question (4) Results

هل تعلمون عن أين تتوفر جميع معلومات المتعلقة بالأنشطة اللامنهجية؟

151 responses

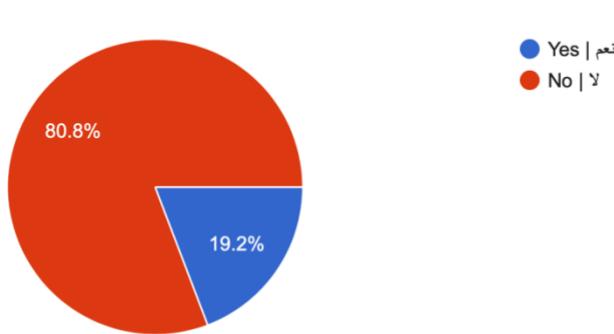


Figure 39 - System user Survey Question (5) Results

كيف تعرفين بالعادة عن الأنشطة المختلفة التي تُقام في الجامعة؟

بالعادة عن الأنشطة المختلفة التي تُقام في الجامعة؟

151 responses

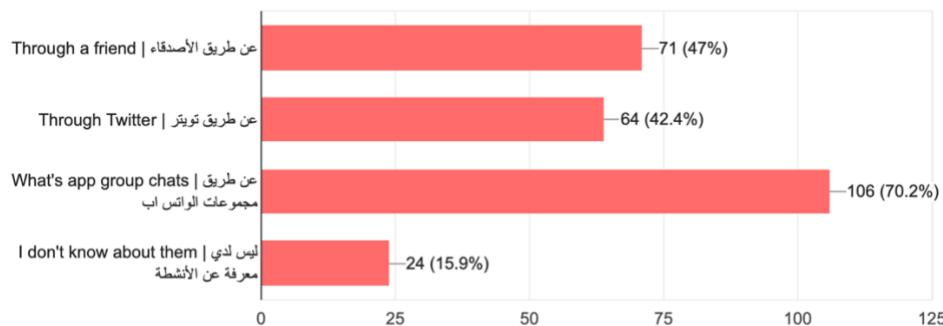


Figure 40 - System user Survey Question (6) Results



7. Do you find it hard to keep up with all the extracurricular activities because of the different platforms that display them? هل تواجهين صعوبة في مواكبة جميع الأنشطة اللامنهجية بسبب المنصات المختلفة التي تعرضها؟
151 responses

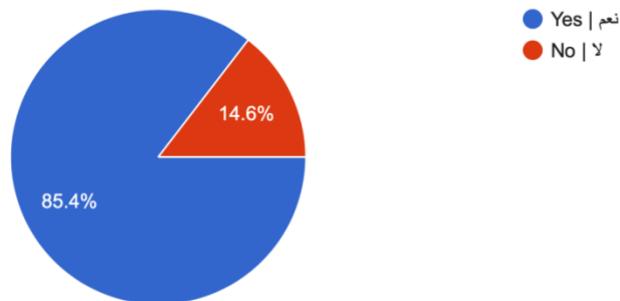


Figure 41 - System user Survey Question (7) Results

8. have you ever missed out on enrolling in a workshop/ extracurricular programs /courses/ events because you didn't know of them until too late? هل سبق... حضور معارض لأنك لم تكن على علم بها إلا بعد فوات الأوان؟
151 responses

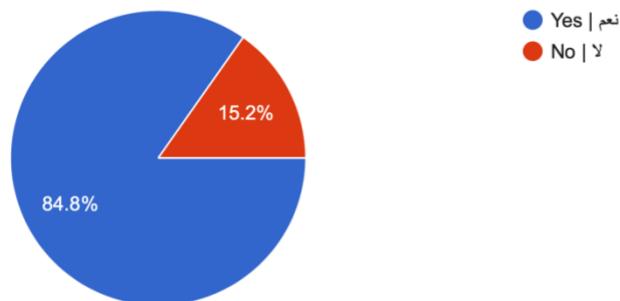


Figure 42 - System user Survey Question (8) Results



9. Do you think having a platform that collects and displays and recommend the extracurricular activities will help you decide and enroll?
هل تعتقد أن وج...عرض الأنشطة اللامنهجية سيساعدك على اتخاذ القرار والتسجيل؟
151 responses

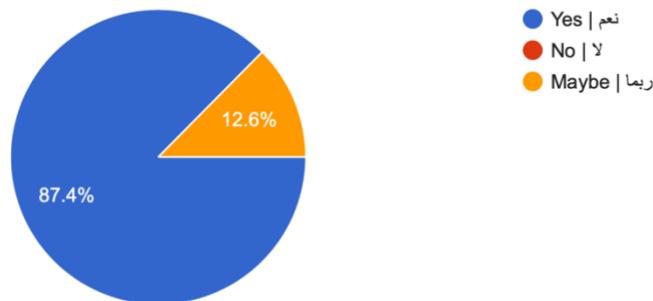


Figure 43 - System user Survey Question (9) Results

10. Do you think that an application that syncs to your calendar will help manage your busy schedule as a college student?
هل تعتقدين أن تزامن التطب...تقسيم الخاص بك سيساعد في إدارة جدولك المزدحم كطالب جامعي؟
151 responses

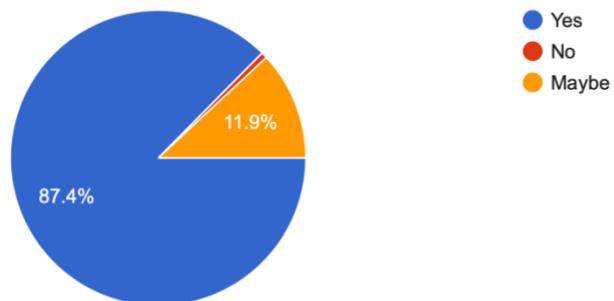


Figure 44 - System user Survey Question (10) Results



Do you have any suggestion or features you would like to add to our app "Count Me In"?
هل لديك أي اقتراح أو خاصية تودين إضافتها إلى تطبيقنا "Count Me In"؟

29 responses

great idea

تكون الأنشطة أو البرامج مقسمة على التخصصات وممكن المستخدم يفلتر ايش التخصصات اللي بيعا يشوفها

لا يوجد

متطلبات التسجيل بالتقديم على الفرص

مثال: للتقديم على المجموعة البحثية يتشرط توفر مهارة كذا وكذا

البحث جميل جداً ، أصيّتم باختبار المشكلة واتمنى من كل قلبي توفر هالمنصة وتاخذون فل مارك بالبحث

تنبيه عند اقتراب موعد النشاط

علامة الأنشطة التي اهتم بها بحيث عن نزول اي اعلان لهم يصلني إشعار ، شاكرين جهودكم

ادراج النادي المتاحه للطالب من ضمن الانشطه

"بروفايل لك واذا كنت عضوه بشيء بيان لك معلومات او اشياء مهمه كـ "عضوه" مو كـ "مطلع"

Figure 45 - System user Survey Question (11) Results 1 of 3

Do you have any suggestion or features you would like to add to our app "Count Me In"?
هل لديك أي اقتراح أو خاصية تودين إضافتها إلى تطبيقنا "Count Me In"؟

29 responses

يتميز باللون جميلة وبمبهجة لكي تبعدنا من هم الجامعة

أتوقع هذا التطبيق بيخفف التشتت عشان نلقى الدورات او البرامج اللي تفيينا قبل ما تخلص لاني عانيت شخصياً احب ادخل هالبرامح لكن للاسف ادور في اكثر من منصه في النهايه اغلبها خلصت ومامعرفت عنها اتمنى التطبيق يطبق في اسرع وقت شكرًا لكم بالتوفيق

،ممكن يكون التطبيق شامل- من ناحية النادي والدورات + اضافة كل فعاليات النادي > عشان يكون فيه سهولة بالحضور والاستمتاع يعني زي اذا بيسوون نادي فعاله يكون اعلان هذى الفعاله موجوده بالتطبيق.

ممكن يضاف للتطبيق فرصة انو نصيف جداولنا الدراسية حتى يكون شامل ومواعيد الاختبارات وما الى ذلك +

لا، لا يوجد

عرض الانشطة اللامنهجية بحيث يكون هناك خيارين، خيار يعرض جميع الانشطة بالترتيب الزمني، والخيار الآخر للتصنيف حيث تكون الانشطة مقسمة بناءً على نوعيتها أو الجهة المقدمة وغيرها. ومن الممكن إضافة الاحتفالات مع انشطة النادي والدورات

يبكون فيه خانة الاهتمامات ووش المجالات اللي اهتم فيها بحيث تطلع لي الأنشطة اللي تلائم اهتماماتي

توضيح كافة التفاصيل الصغيرة للأنشطة او وضع مساحة استفسارات للطلاب

Figure 46 - System user Survey Question (11) Results 2 of 3



Do you have any suggestion or features you would like to add to our app "Count Me In"?
هل لديك أي اقتراح أو خاصية تودين إضافتها إلى تطبيقنا "Count Me In"؟

29 responses

فكرة التطبيق رائعة

اقتراحي اضافه خريطة لمباني الجامعه والمراکز التابعه لها توضح مقر المراكز تقريبا مثل قول ماب بشكل ابسط
وتوضيح جميع المطاعم الموجوده بالجامعه وموقعها

ارتباط التطبيق بالامانات بحيث اي شي يوصلهم مفقود ينزلونه بالتطبيق ويتحدث بشكل دوري

خانه خاصه بالتطورات داخل الحرم الجامعي لمن لديها وقت كافي

يعني التطبيق بيخدم جميع الطالبات ب اذن الله وبيختصر وقت
الله يوفكم ويسر امركم وبنجزوه ب اذن الله
واحنا فخورين فيكم

ممكن خانة اقتراح أنشطة وتعرض للنادي

بحيث أن اللي جرب هذا النادي او البرنامج يذكر تجربته reviews يضاف خانة

بالتوفيق

Figure 47 - System user Survey Question (11) Results 3 of 3



11 Appendix B: Interview Questions and Answers

Below are questions and answers conducted from interviewing club leaders (potential admin users) for requirement elicitation:

Table 12 - Interview 1 Outline

INTERVIEW 1 OUTLINE	
Interviewee: Lama is the leader of the Digital Minds Club	Interviewer: Noura Al-Qahtani
Duration: 5:50pm – 6:25pm (35 minutes)	
Questions	Answers
Question1: What is the method of advertising events?	Answer1: The club's activities are announced through the club's social media accounts such as Twitter, LinkedIn, and Instagram. in addition to advertisements via WhatsApp groups.
Question2: Do you face difficulty in nominating and selecting club members?	Answer2: As for the selection of members, we do not have problems, but the selection of captains and deputies for club committees is sometimes difficult because we try to choose the most qualified among many applicants.
Question3: Do you face difficulty in reaching the target group effectively?	Answer3: No, because our club specializes in events that target followers of the club's social media accounts and who are interested in technical content.
Question4: Is the feedback from the participants in the event important? And how do they get it?	Answer4: It is very important to me as a club leader, because the feedback tells us if the event is successful or not, and is it worth repeating, for example. As for how we get feedback, often the same participants share their opinions with us via Twitter or face-to-face when we interview them, but there is no specific way we get feedback.
Question5: What are the most important ways to join the club?	Answer5: We publish the link to register for membership in the club through our Twitter account and WhatsApp groups



Table 13 - Interview 2 Outline

INTERVIEW 2 OUTLINE	
Interviewee: Rand, former leader of the Social Cultural Club at the Faculty of Computer and Information Sciences	Interviewer: Noura Al-Qahtani
Duration: 6:50pm – 7:10pm (20 minutes)	
Questions	Answers
Question1: What is the method of advertising events?	Answer1: social media in general, specifically Twitter and WhatsApp, as the students come from all classes and specializations.
Question2: Do you face difficulty in nominating and selecting club members?	Answer2: Very, but often the selection of members is done by the leaders of the committees, meaning the president of the club carefully chooses wonderful leaders because they are the ones who choose the students for their committees because they are informed of the tasks of the committee.
Question3: Do you face difficulty in reaching the target group effectively?	Answer3: Often the target group is one, I mean, either for all university students or for the students at the college itself. Access through groups is easy, but if there is another way, it is very nice.
Question4: Is the feedback from the participants in the event important? And how do they get it?	Answer4: Very, as it motivates the members of the event that they see the impact of their work and effort over the past period and also for improvement and development, we often get it through one of the sites where they write, such as Padlet or surveys.
Question5: What are the most important ways to join the club?	Answer5: Registration at the beginning of each semester through the link posted everywhere.

Table 14 - Interview 3 Outline



INTERVIEW 3 OUTLINE

Interviewee: Esraa, former leader of the Digital Minds Club, the design committee, and the game development event

Interviewer: Noura Al-Qahtani

Duration: 8:50pm – 9:25pm (35 minutes)

Questions	Answers
Question1: What is the method of advertising events?	Answer1: Most of the events we advertise in more than one way, depending on whether they are live or online, but now there is a mixture of both. We often advertise this through the club's WhatsApp groups or social media accounts, Twitter and Instagram, or by emailing the club's database or posting advertisements throughout the college.
Question2: Do you face difficulty in nominating and selecting club members?	Answer2: Yes, because I must know the personality and nature of the student even if she sends us her CV and it was so perfect and professional, that is not enough. Because I must make sure this student is really going to work or not, because we can't collect her hours and give her a certificate if she doesn't work.
Question3: Do you face difficulty in reaching the target group effectively?	Answer3: Mostly not, because most of the events are the target group of students at King Saud University, but the topic depends on the time because if the time of the event is the time of the exams, it is very difficult for the students to attend the event. Therefore, we try as much as possible to put the event at a suitable time for most students, also advertisements will reach them in some way. Sometimes the advertisement does not reach, especially if the event is in other colleges.
Question4: Is the feedback from the participants in the event important? And how do they get it?	Answer4: Very important, we often get it after the event ends directly from the participants in the event through questions or through a form or QR code, as for club members through the friendly session.
Question5: What are the most important ways to join the club?	Answer5: The nomination is through the president of the club or the committee, so that they know the nature of the student and that she is qualified for the nomination. -Send a club registration form through Twitter or Instagram At the beginning of the semester or year, there is a table in the college with registration forms on which the heads and members of the club are based.



Table 15 - Interview 4 Outline

INTERVIEW 4 OUTLINE	
Interviewee: Zainab is the leader of the marketing club	Interviewer: Noura Al-Qahtani
Duration: 8:00am – 8:20am (20 minutes)	
Questions	Answers
Question1: What is the method of advertising events?	Answer1: Through social media (WhatsApp, Twitter, Insta, Snapchat, ...). Also, advertisements in the university (posters, or any other striking creative method).
Question2: Do you face difficulty in nominating and selecting club members?	Answer2: The Marketing Club does not have any difficulties in this regard, but I know some clubs that suffer from this problem. The reason is that there is no strong media for the club's activities, therefore, the lack of registrants, the weakness of the team specialized in the guidance of interviews, acceptance and rejection (human resources teams, quality teams,..), the lack of a clear vision of the club's plans, following old methods of attracting members.
Question3: Do you face difficulty in reaching the target group effectively?	Answer3: Yes, sometimes it is tough for us to contact our target group because they attend colleges far from us.
Question4: Is the feedback from the participants in the event important? And how do they get it?	Answer4: Certainly important, the views of event visitors are measured through comments on social media, or some specific events require the creation of an event evaluation form.
Question5: What are the most important ways to join the club?	Answer5: Through the personal nomination of the distinguished or a registration form at the beginning of each semester.



Table 16 - Interview 5 Outline

INTERVIEW 5 OUTLINE	
Interviewee: Hanin, leader of the Psychology Club	Interviewer: Noura Al-Qahtani
Duration: 10:00am – 10:20am (20 minutes)	
Questions	Answers
Question1: What is the method of advertising events?	Answer1: We publish a form to register for the event on the club's Twitter account
Question2: Do you face difficulty in nominating and selecting club members?	Answer2: A lot because the club already depends on them. Sometimes it's hard to select someone who's so enthusiastic throughout the semester, I mean in the beginning and in the interview that they're excited and willing to do things, and if the time comes, we need to, we won't meet them. It's hard for me on the one hand that they don't speak for themselves well in the registration form that we publish. Also, sometimes the student's CV is well written, but the number and email are not written correctly, so it is difficult to communicate with them. Sometimes there are so many female filters that it's hard for me to choose one
Question3: Do you face difficulty in reaching the target group effectively?	Answer3: No, because most of our topics are general and suitable for all groups
Question4: Is the feedback from the participants in the event important? And how do they get it?	Answer4: It will certainly help us develop the next events. Often, we get it from the surroundings of the members and the time of the event from the officials, supervisors and attendees. Sometimes there are comments on Twitter, or I receive messages on WhatsApp.
Question5: What are the most important ways to join the club?	Answer5: We publish a registration form on Twitter and WhatsApp groups before the beginning of each semester. Sometimes I get a recommendation from a former club member.