INITIAL DESIGN DOCUMENT

For

Univent

Prepared by:

JUMAGELDİYEV Myratgeldi (1155118066)

SOYUNJOV Alshir (1155119170)

MAMIYEV Resul (1155135439)

Ng Hoi Lung (1155109654)

JEON Imsong (1155087995)

Group Number: D3

The Chinese University of Hong Kong

Computer Science and Engineering

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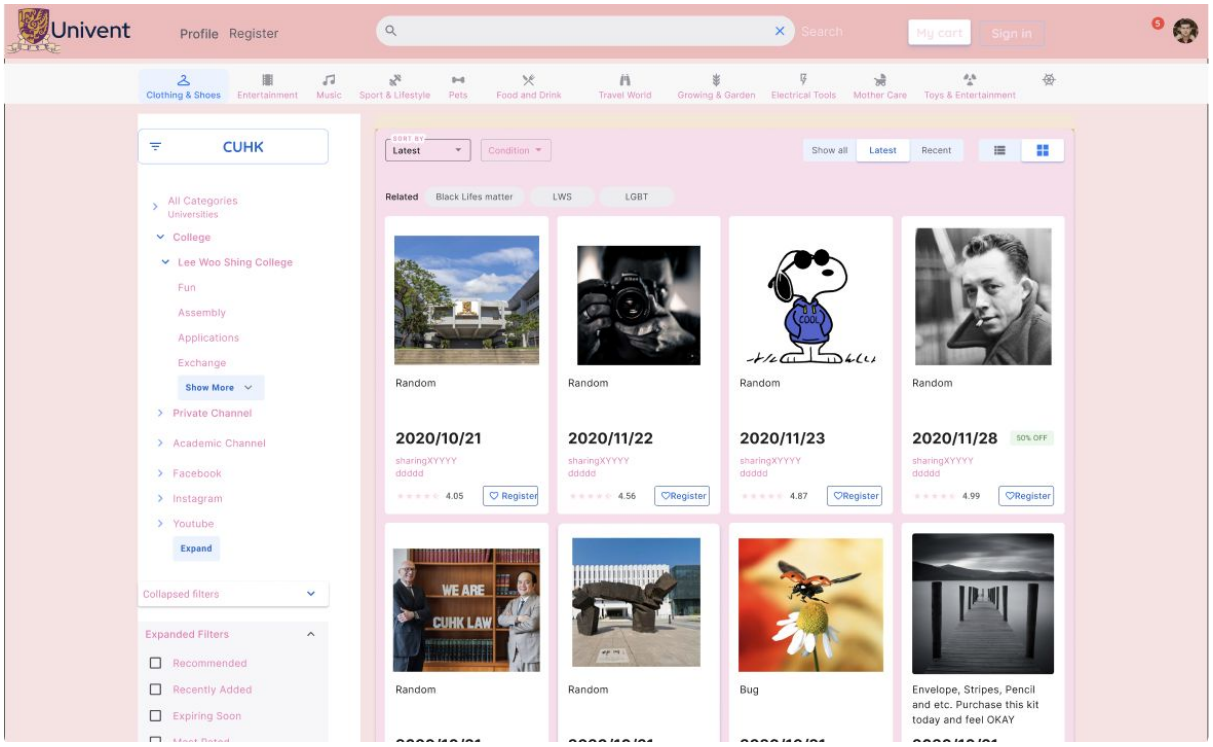
1. Introduction

1.1 Project Overview

This project is to develop a web application that serves a university community as a convenient platform to efficiently organize and manage social events, workshops, and activities of any nature. The platform would provide the students and staff an opportunity to look for and enrol in the events of their interest on a single platform. “Univent” is introduced to solve the problem.

Design Preview:



1.2 Objective

There are a lot of events, seminars, activities, and workshops organized by the university, but due to ineffective coordination, they fail to reach out to students. Hence, this project aims to solve the following problems:

1. Announcement of events held on different platforms (Mass mail, Career Centre, College website etc.) which make it difficult to reach interested students.
2. Lack of information about events on the Registration and Attendance system.
3. It is a challenging task for individuals to hold events or activities due to the difficulty of advertising them.
4. Absence of rating or feedback mechanism for events.

Therefore, the aims of our platform are to increase the participation rate of events and connect university students by the following means:

1. Unify all university events on a single platform.
2. University administration, faculties, departments, student societies as well as individuals able to organize their own events, activities.
3. Useful information about events such as photo and text description, available quota, comment section to give more idea about them.

1.3 Expected Customers and Market

Due to Covid-19, everyone is isolated and needs to keep themself in quarantine. In order to control the pandemic, social distancing is a must to prevent it from becoming more severe. Therefore, it has become the greatest negative impact on social activities and the relationship between people is weakened. Without a physical meeting, everything needs to be conducted online and it makes people uncomfortable expressing their idea. Moreover, the outbreak of the pandemic is an unprecedented challenge to different stakeholders or sectors in the entire society. It has devastated various industries including finance, education, retail. Our business idea wants to contribute our effort and care to society. This is the reason why "Univent" would be introduced and our core belief is that we want to reunite and strengthen the bonding between people while fighting the Covid-19.

Our majority of the target group would be all the educational institutions in Hong Kong. We expect our platform may cover 90% of the market especially for universities in Hong Kong. The first phase will be started at the Chinese university of hong kong. In the product, we are going to provide a platform that everyone can hold an event channel that they can share their thoughts including political, daily life, hobbies, academic discussion equally. For platforms want to promote equality and would not differentiate people based on their gender, race, or belief. We also care about people's privacy and we know the importance of it. Therefore, the event will have public events and private events so that people are still able to keep their anonymity. Our slogan for the platform is that "We want to know who you are all about your soul". On the platform, people can connect with people that have interesting souls.

In the future phase, we want to extend our services to more universities' events. We intend to make all the unorganized events including the official school events unite to our platform.

Customers will find it useful and convenient to register their favorite event channel based on their needs. Nowadays, the event registration for universities and colleges is using completely different systems. For example, the assembly that students need to register for Lee Woo Shing and Chung Chi College is using two separate systems. Our platform plays an important role to organize the event based on our category so that the end-user may find it is user-friendly to use our service without registering and remember so many different accounts.

To conclude, we hope to reduce the complexity of joining or holding events. The product is intended to bring people closer and help them to build the connection during the pandemic.

1.4 System Features

There will be several beautiful features in our platform, which are:

1. Users can create their own detailed profile.
2. Users can create an event where they can set time, quota, place etc of the event.
3. Each event will have its own page, where it will have About, Members, Discussions panels.
4. Users can join any event if there is an available seat.
5. Users can see current members of the event.
6. Event details will be sent to the participants' email after they join an event.
7. The website will present events by categories such as Movies, Football etc on the front page.
8. The system will delete expired events automatically.
9. Users can search an event by its location, name, headline
10. Users can filter the events by day of the week, by its type, by distance, by quota number etc.

As our project progresses, we might add, remove or change some features but for now these are our planned functions of the website.

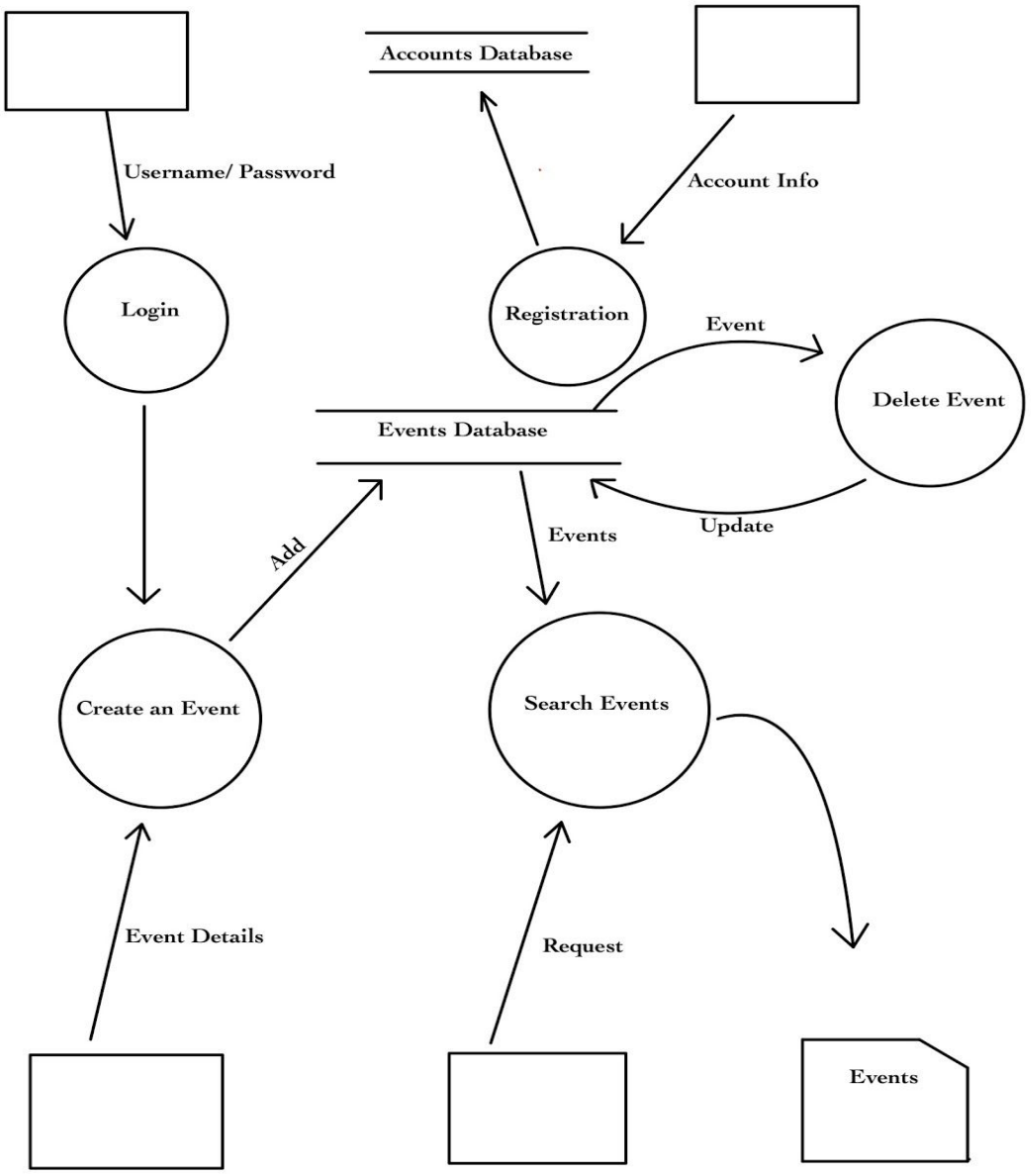
2. Background

A university is not a place only for education and academic degrees, but it is also a place for different experiences and a social life with others. At a university, students and staff can organize and participate in different kinds of social events and activities such as assemblies, concerts, sports games, debates, seminars, cultural events, workshops, and competitions to meet new people, socialize, have fun, and broaden their experiences. However, despite the large number of events happening within the university, the information about these events rarely reaches all the interested students due to the inconsistent and inefficient ways these events are announced. Depending on the event and its organizer, the information about the event may be announced on their website, emailed to the students, posted on social media, or written in a poster on a wall, and this inconsistency of event announcements makes the full participation of interested students difficult. Thus, the event organizers, especially individual organizers, have the burden of gathering the participants through different methods, and the event participants have to search through various websites and platforms inefficiently for the desired events. We thought the best way to resolve this inconvenient connection between the organizer and participant is to have a united platform with accumulated information of university events instead of scattered event information in different places. Therefore, we decided to design a platform for university events as our project.

Our project, ‘Univent’, aims to serve as a bridge between the event organizer and participants of a university. ‘Univent’ would provide useful functionalities for both event organizers and event participants. For the organizers, ‘Univent’ would be a perfect place for them to plan, announce, and manage their events, and activities. They would be able to post information and pictures about their events and edit them on ‘Univent’ handily with its user-friendly user interface. By organizing an event on ‘Univent’, it would be visible to all or selected groups of university members and this makes gathering participants easier. In addition, after an event, the organizer can reflect on finished events by referring to the comments, feedback, and ratings from participants, and organize better events next time. On the other hand, for the event participants, ‘Univent’ would be a useful platform with easy access to all the necessary information about every event happening in a university. Events would be categorized by different organizers, themes, dates, locations, and keywords, and university members can utilize these categories to search for events of their interest. Furthermore, the participants can look at the rating and comments of previous events by an event organizer before deciding on

joining an event held by that organizer. Overall, 'Univent', would not only provide a simple collection of events, but rather assist users to discover new events and interact with university events, enriching their university life.

3. Specification

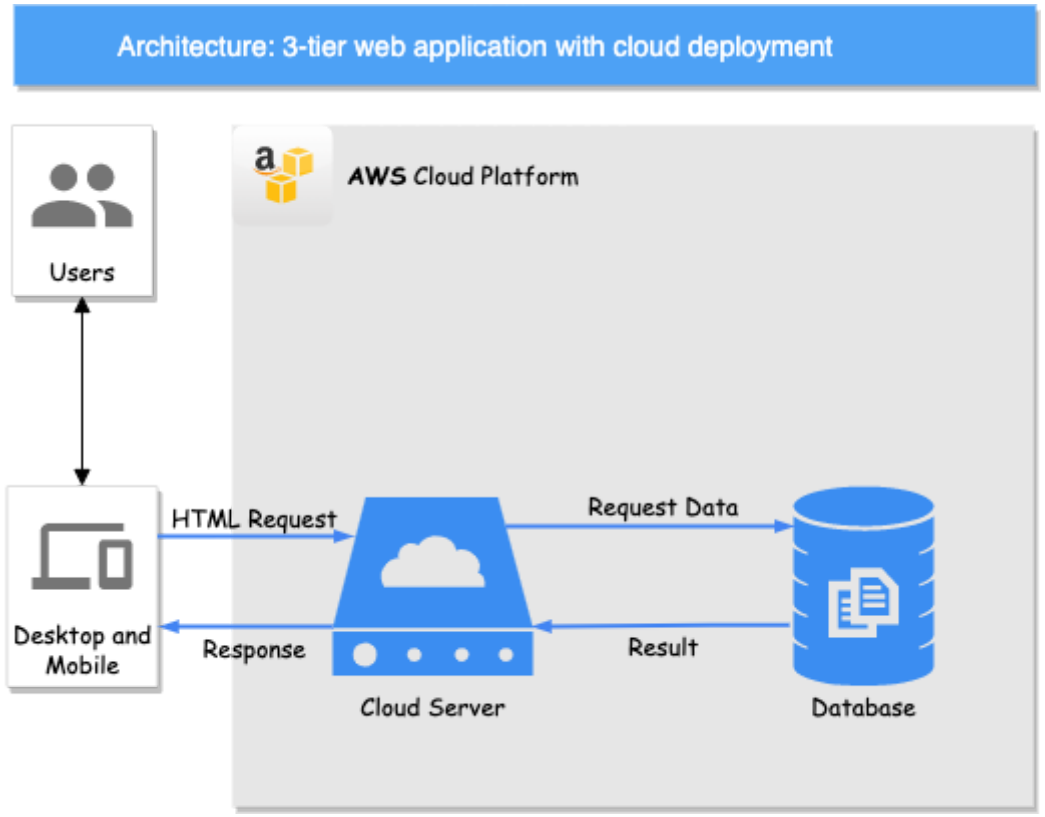


The following graph is the Data Flow Diagram (DFD) of the website. Basically, there are five main functions in our platform. They are user registration/login, users with accounts will be saved in the Accounts Database. Another function is creating an event, to do it we need a user with an account and

input by the user and then created events will be saved in the Events Database. Additional two functions are related to the events which are searching an event and deleting an event function. In the former one user has to give filtering input and then the system will show related events and in the latter function, the platform will automatically delete expired events.

4. System Architecture

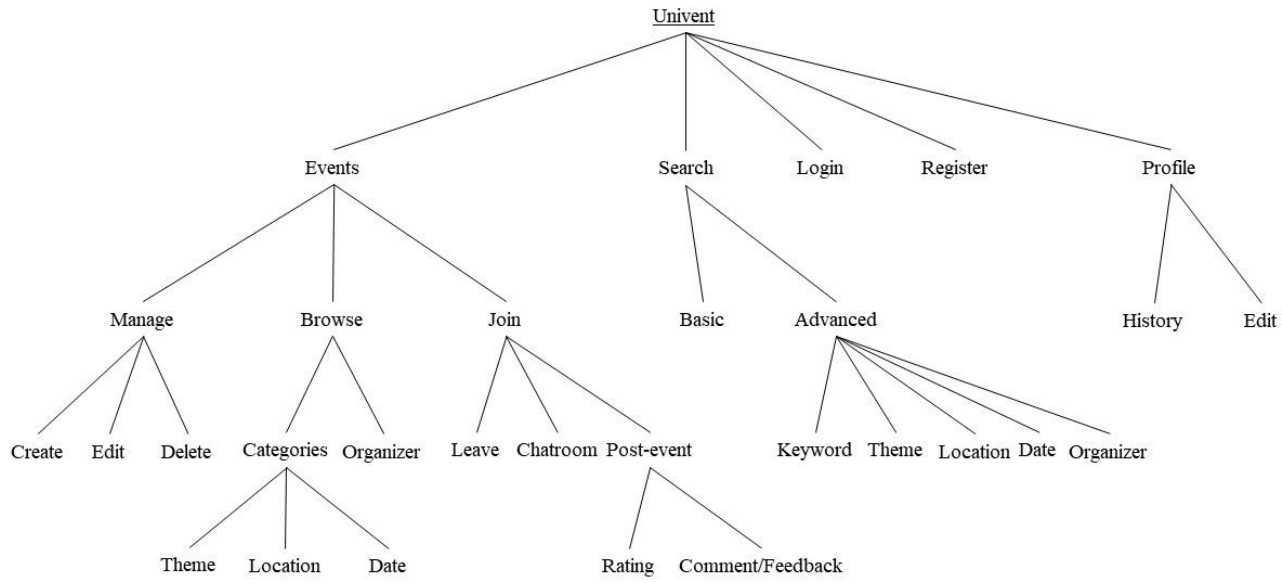
4.1 Architecture Diagram



The overall architecture of the application, as shown in the diagram above, will have three tiers, namely presentation, application, and data tiers. The presentation tier, sometimes called user interface, represents the interaction and communication of Users with the application tier through web browsers on Desktop and Mobile devices. It will be developed using HTML, CSS, and JavaScript as well as React, a JavaScript library for UI components. The application tier is where the business logic of all the hows of the application lies. This component is in communication with the data tier to process and provide information to the Users. It will be developed using Node.js, a back-end JavaScript run-time environment. Finally, the data tier or database represents the storage and management of all the data used in the application. MongoDB, a NoSQL Database server, will be utilized for the data tier of

the application. Moreover, the application will be deployed to AWS Cloud Platform so as to utilize the cloud computing power and other web services.

4.2 System Components



The above figure describes the following major functions:

1. Functions related to events
   - Management of events

     This function allows users to create, edit, and delete his/her events and its information.
   - Browse through events

     This function allows users to browse through registered events categorized by different themes, locations, and dates, or browse through events organized by a specific organizer.
   - Join events

     This function allows users to join an upcoming event and leave whenever the user changes his/her mind after joining. Also, after joining an event, users can communicate with the organizer or other users participating in the event through the chatroom. After the event, the

users participating in the event can rate and leave comments and feedback about the event and the organizer.

2. Search function

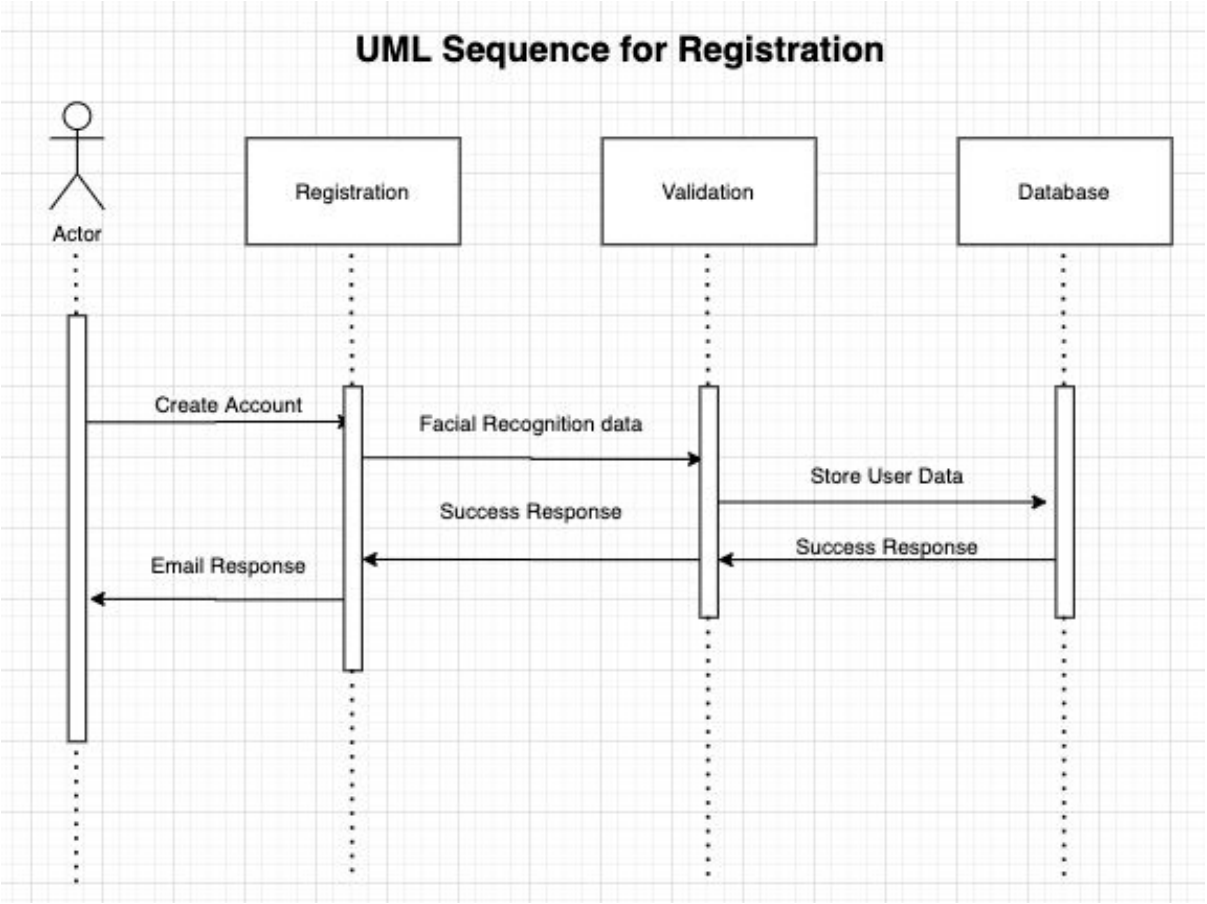
This function allows users to search for different upcoming or on-going events. In addition, users can utilize the advanced search function to specify certain keywords, themes, locations, dates, and organizers to find the desired event more easily.

3. User login, registration, and personal profile function

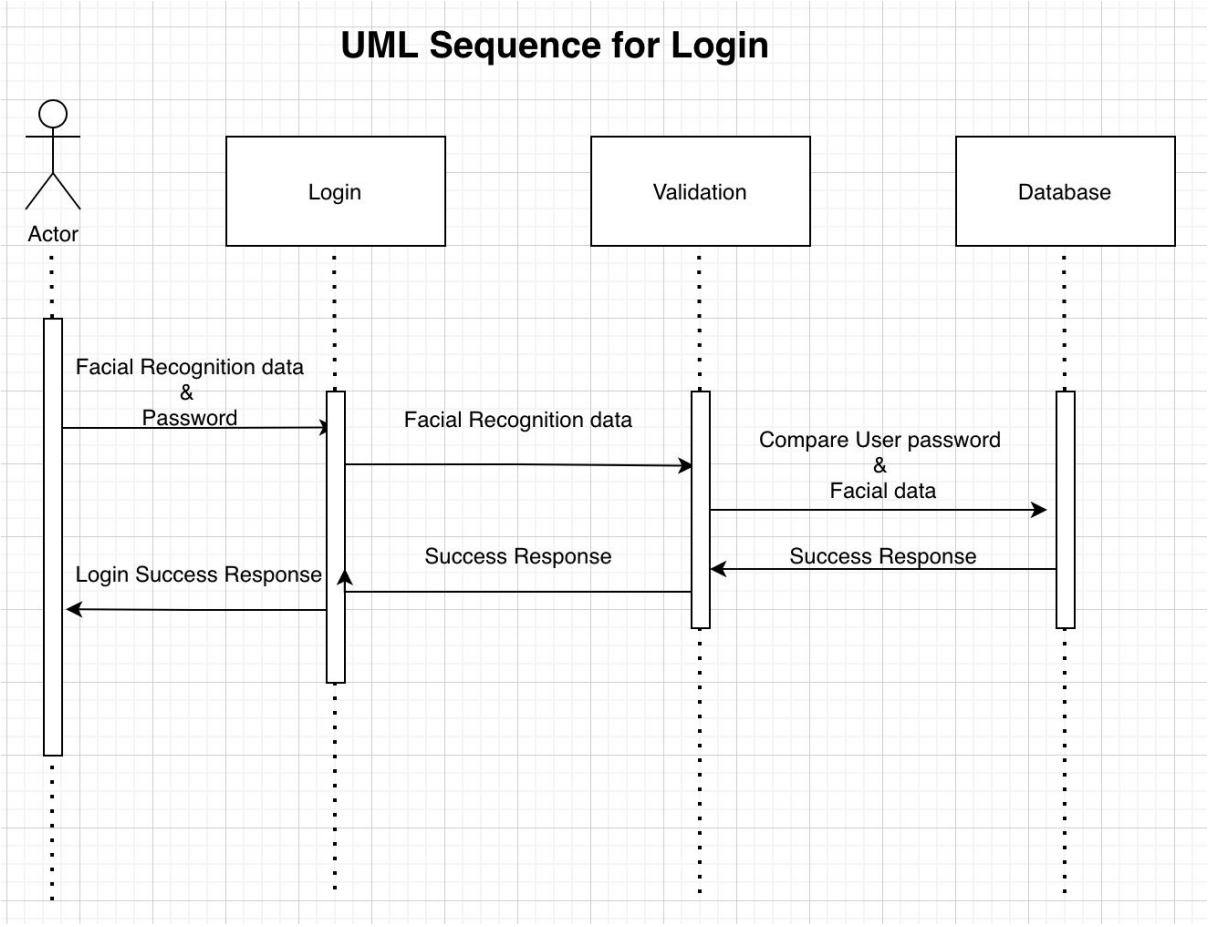
This function allows users to register to become a user of our product. As a user of the product, the user can login to the website with a registered email and password and access the user's personal profile. In the personal profile, a user can edit personal information, preferences, and settings. Also, a user can not only view the history of previous events that the user organized or participated in but also access the list of the upcoming or on-going events of the user.

4.3 Description of Major System Components by UML

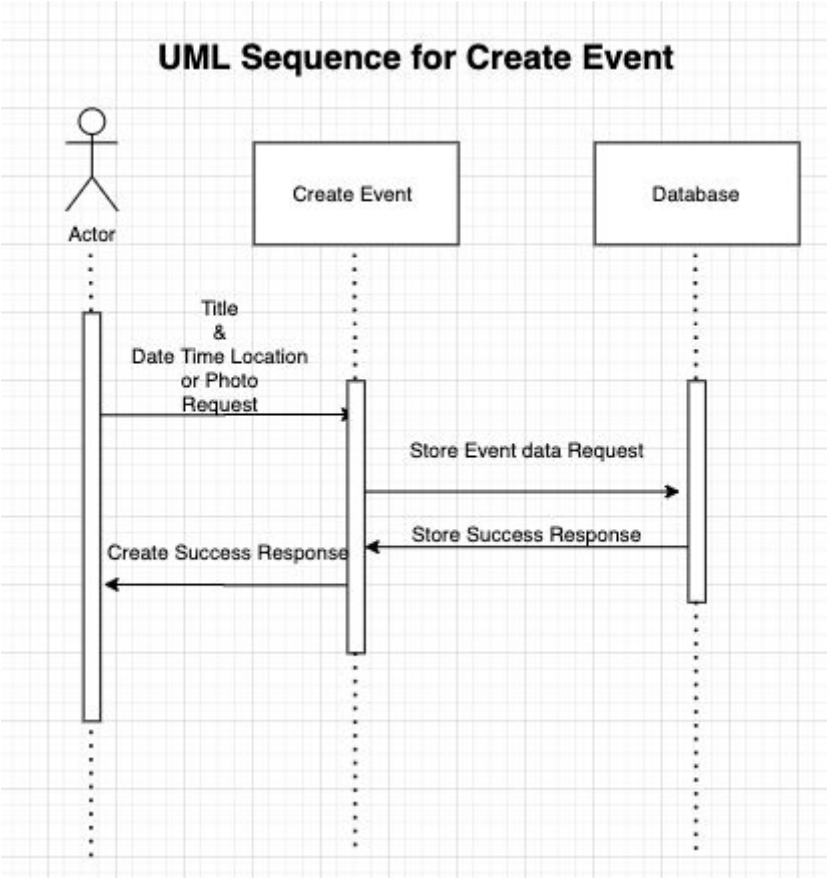
4.3.1 UML Sequence Diagram



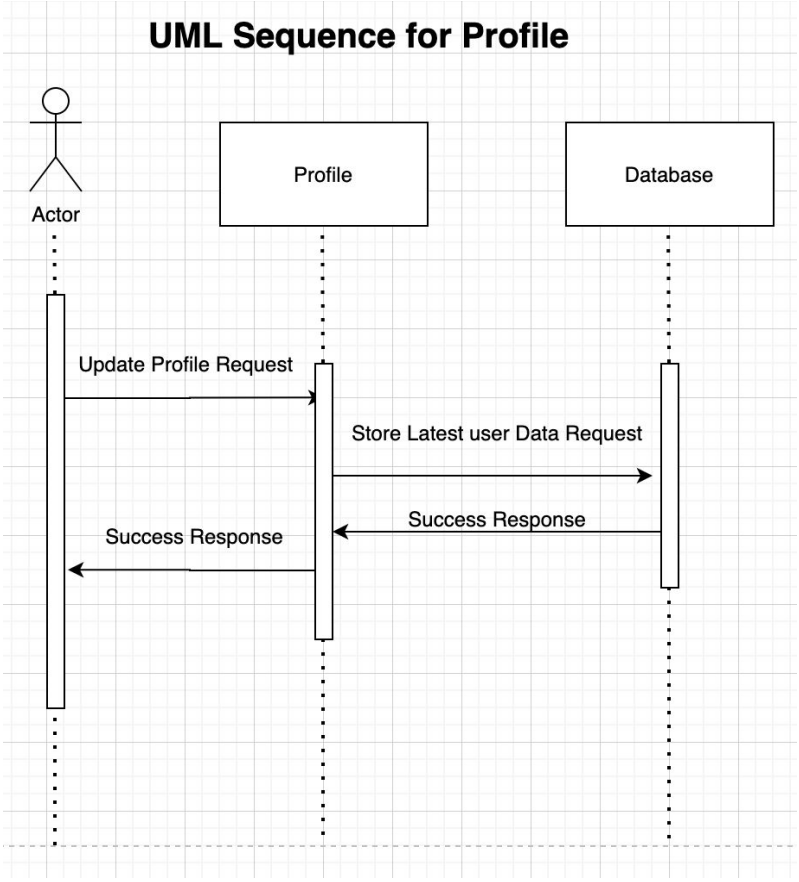
The above diagram describes the process of registration on "Univent". Basically, the process is divided into four main components including the actor, registration, validation, and database. Firstly, the actor (users) will have a create account request like the password and personal email to the registration page. After that, the user required to input their facial data to our validation API for cloud services training, and then the validation API will post a request that stores the user registration data as a token to our database. In the end, the database and validation API will give a successful response and send an email saying that the users have successfully registered our service.



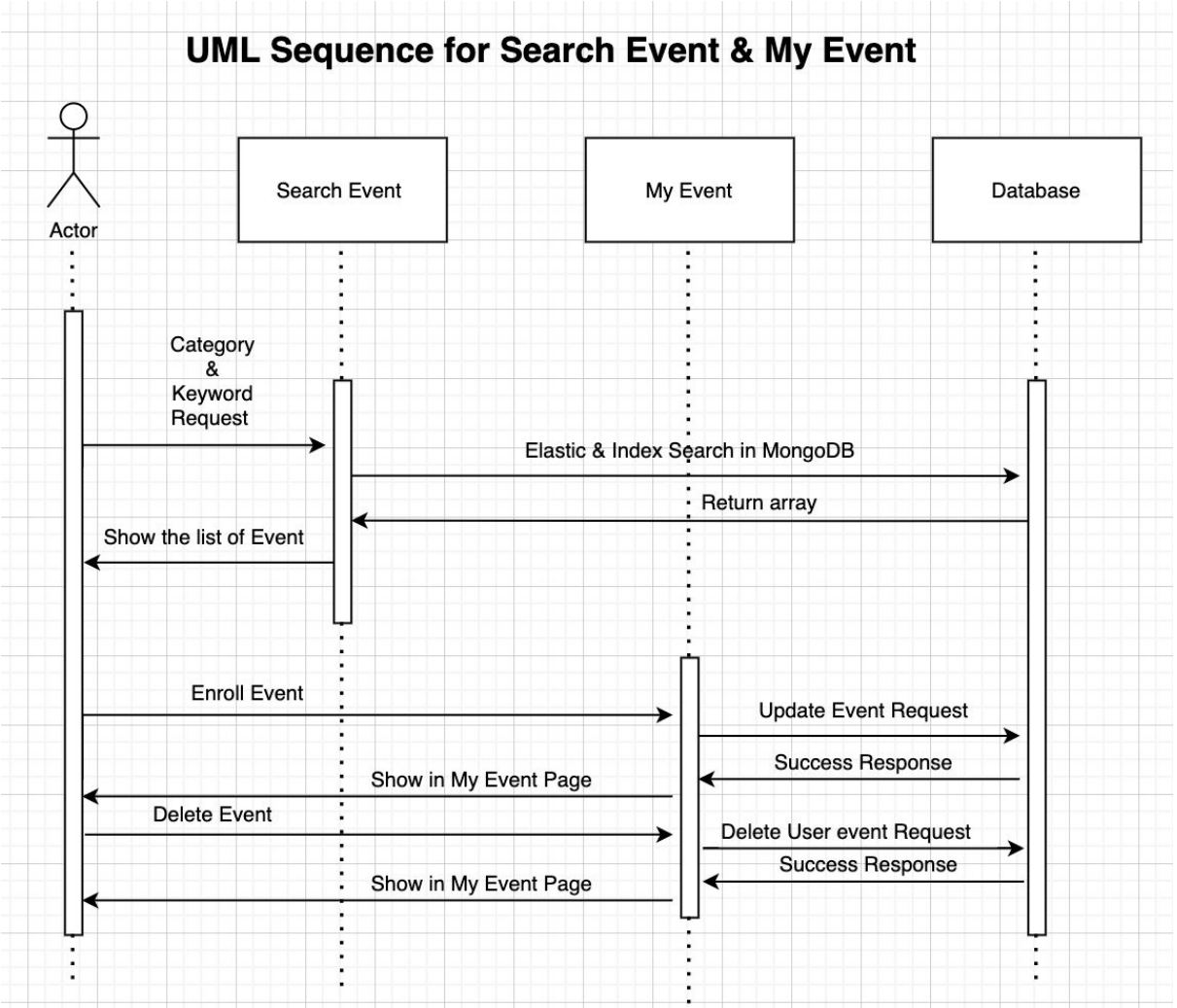
The above diagram describes the process of login on “Univent”. Basically, the process is divided into four main components including the actor, registration, validation, and database which share with the registration part. Firstly, the actor (users) will be required to provide their data like the face image, password, and personal email to the login page. Next, the user data will be packed as a package sent to the validation API for cloud services matching the user image, and then the validation API will post a request to the database that will require to compare user information like the password is a match or not. Moreover, it will update the user data like the login status. In the end, the database and validation API will give a successful response and show a pop-out screen saying that the users have successfully login to our service.



The above diagram describes the process of creating the event on “Univent”. The process is divided into three main components including the actor, event, and database which share with the registration part. Firstly, the actor (users) will be posting a request for creating the event on the event page which will be required the data, time, and location information, etc. Next, The event data will be packed as a JSON package to the database. The MongoDB database will create a new JSON object for storing the new event data. In the end, the user will able to receive a successful response for creating the event.

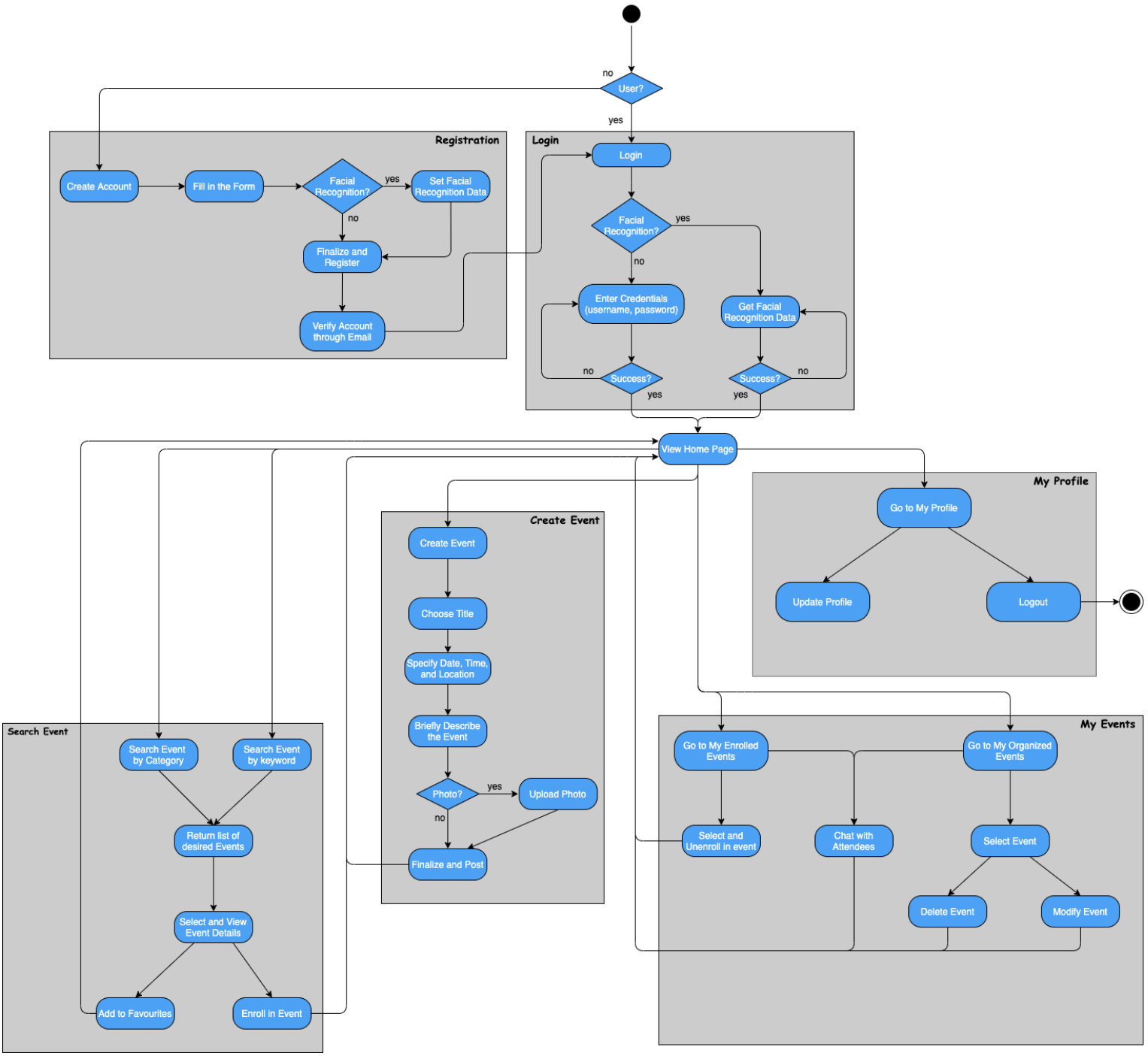


The above diagram describes the process of updating the profile on “Univent”. The process is divided into three main components including the actor, profile, and database which share with the registration part. Firstly, the actor (users) will be posting an update request to the profile page API like the personal image, password, and personal email, description. Next, The updated data will be packed as a JSON package to the database that will require comparing user information like the password is different or not. When there is a difference between the old data and new data, the data will be overwritten by the new data and store in the database. Finally, the user will receive a successful response showing that the profile page that data have been changed.



The above diagram describes the process of the search event and shows my event on "Univent". There are four main components including the actor, search event, my event, and database. In order to search for an event, category and keyword would be required as post data for asking the database for a query. Then, the search API will be used the index search to find the MongoDB data. If it exists, data will be retrieved as a JSON object of the array. It will be shown as a result so that users can see a list of the event from the query. The enrollment event will be required username to update the database using My Event API. When a user successfully enrolls, he will receive a successful response. If they want to delete, the My Event API will use the delete method to delete the data in MongoDB. In the end, the event will not show on the My Event page.

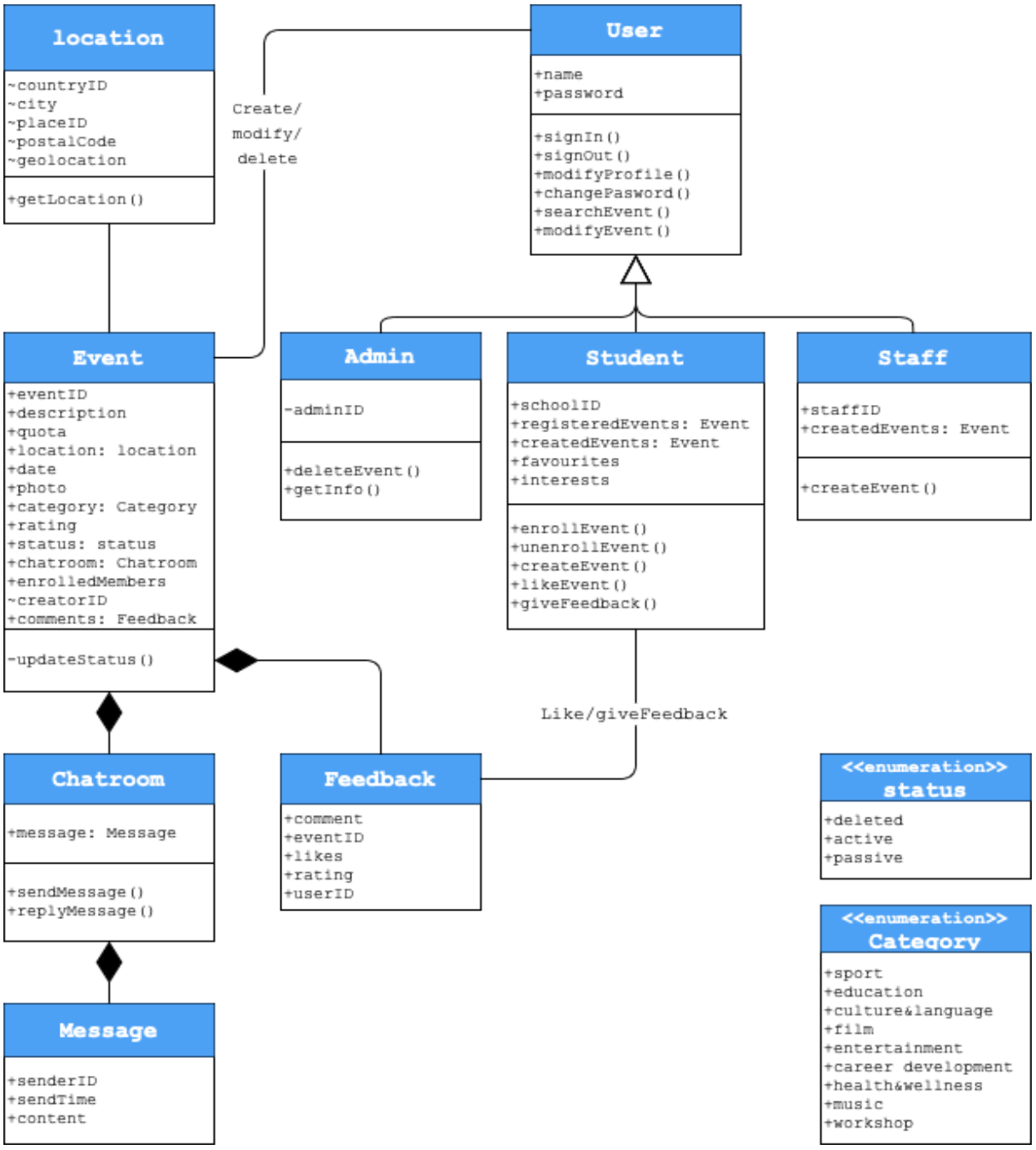
4.3.2 UML Activity Diagram



The diagram above illustrates the activities or actions of the users in the application. There are five major components in the diagram, namely Login, Registration, Create Event, Search Event, My Profile, and My Events. At the start, the index page of the application will prompt the user for the corresponding action Login or Registration depending on whether the user has already registered or not. The Registration procedure goes as this: user clicks on create an account, then fills in the form, decides whether to set facial recognition security, then finalizes and finishes the registration with email verification activity. Login component

follows the following sequence: user logins with facial recognition feature if it was set or login credentials like username and password, after that user is directed to the home page of the application. At the home page, users can then choose to search for and enrol in the event, create a new event, see My Profile and My Events pages. Create Event procedure is as follows: user clicks on create an event, chooses a title for the event, specifies the date/time/location for the event, writes a brief description of the event, uploads a photo if chooses to, then finalizes and posts the event, finally returns back to home page. As for Search Event, the user searches for an event by keyword or category, gets the list of desired events, then selects and views events, adds an event to his/her favourites or chooses to enrol in an event. Under My Profile, the user either modifies his/her profile like login credentials, profile photo or logs out of the application. Finally, under My Events, the user can see the events he/she registered to or created, select and unenrol from an event or delete/modify an event if he/she is the organizer, or chat with other attendees.

4.3.3 UML Class Diagram



The above class diagram is showing all classes that we would like to implement in our application and shows relations between them. User is the parent class of Admin, Student and Staff classes. Student and Staff objects can create events and modify those events. Admin on the other hand have access to delete any event object given EventID. All events that are created by users will be Event objects with a unique ID and each of them will contain a chatroom and comments section. Thus, Chatroom and Feedback classes are composition of

Event class. Moreover, each event has a category that is determined by creator and status which is an indicator whether the event is active, passive or deleted.

5. Reference

Online Web Design Tool - figma.com