



**Professional Practice Management System**

**Requirements Specification**

**Version 5.1**

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## 1. Executive Summary

### 1.1 *Project Overview*

Professional Practice Management System (PPMS) is created with a focus on students and their first steps to building their careers. PPMS is thought to be a middle tool that builds bridges between Universities and Businesses. The main actors that the system has will be students, which would have the opportunity to create their profiles, market themselves, and deep dive into hundreds of possibilities from different businesses and fields, by having a chance to find an internship, expand their network and exchanging contact with experts(specialists). Moreover, as Professional Practice stands as a compulsory course in many universities & degrees in Albania and the define procedure is done manually, we build PPMS as a unique solution in the Albanian market that not only will it save time by automating the process but by increasing the reliability of paperwork, it is also eco-friendly as it will automate the process by reducing tons of paper used by students to report their daily diary. Even after graduation PPMS will serve as a Job-Hub, where Businesses can advertise their vacancies for young graduated professionals.

### 1.2 *Purpose and Scope of this Specification*

Our purpose is to strive for improvement by automating professional practice course system in Albania and offering young Albanian students the best and fastest opportunity to link with local businesses.

Why choose PPMS:

1. An automated way to manage a Professional Practice course.
2. Increases reliability of paperwork.
3. Time-efficient.
4. Eco-friendly by reducing tons of paper used by students to document their work.
5. Helps students market themselves.
6. Makes it easier for business to advertise their job vacancies.
7. Aids young graduates to stay in touch with businesses

## 2. Product/Service Description

Professional Practice Management System (PPMS) is a management system that focuses on undergraduate students. It is thought to be the bridge between academic knowledge and a future career. What PPMS is aiming for is an opportunity for each student to create his professional digital profile and expose themself to different local businesses in the market.

What makes PPMS different from other competitors is its platform's strategy used to approach students. Its crowdsourcing strategy to enter, develop and expand into the market offers universities a

management system for their Professional Practice course. This system will “oblige” students to register, apply, and connect to businesses. Then they can complete & sign their professional practice documents in real-time. It will not be only a one-course journey, but even after graduating in their course, students can still use the platform to apply to other vacancies offered by businesses.

## **2.1 Product Context**

PPMS is self-contained and independent. There are some similar systems like PPMS currently operating in Albania, but they are mostly focused on job seeking & application, putting aside internship opportunities. There is also one platform that is focused on students & internship vacancies but they are not well known among students in Albania.

What PPMS offers to the market is an opportunity for each student to create a professional digital profile (similar to a LinkedIn Profile for Albania) and expose himself to different local businesses that are registered on our platform. What is our main crowdsourcing strategy to enter, develop and expand into the market is offering universities a management system for their Professional Practice course. This system will “force” students to register, apply, and connect to businesses and fill & sign their professional practice documents in real-time. After graduating from their course they can still use the platform to apply to other vacancies offered by businesses.

## **2.2 User Characteristics**

Our web application is intended to be used for the following user profiles:

- Business (local Albanian & International businesses from any field):  
Mostly focused on local Albanian businesses, but even international businesses from any field are invited to join. We tend to invite any business which is willing to offer job & internship places and connect to young talented students from Albania. Businesses will have the opportunity to register, log in, and get verified by our staff and build their own profile while creating vacancies announcements and managing them. By being part of this network, businesses will be given the opportunity to touch on the pool of interested and talented young Albanian students as per their preferences and requirements. Meanwhile, the student market is a good window of opportunity for all interested students to help them build their first steps into their career while also assisting them in completing their Professional Practice course.
- University (focused on any public or private university in Albania):  
We are focused on public and private Universities in Albania. Universities will have the right to register, log in, and get verified by our staff. Since the Professional Practice course is now a compulsory course and we through our research have seen that professors responsible for that

course have a lot of problems in terms of organization and reliability of course finalization documents, we have made it possible through our product to offer university a platform where they can create a class and assign a professor as responsible. Also since many of the universities have Career Offices we have made it possible for the universities to assign a career office representative.

Through University are assigned 2 users:

- Professional Practice (PP) Professor:

Professor assigned by the university responsible for the Professional Practice course. He will have the right to register and login into the system. Also, he will be the main person responsible for managing the class. PP professor will be the one who adds & removes students from the class. Also will have the right to download and upload professional practice contracts and documentation by accessing the student's profile.

- Career Office representative:

The Career Office representative will be assigned by the university and will have the right to register and log in. He can have a full view of all the job & internship announcements and will have the possibility to download them in pdf so he can use those pdf to send to the students through email.

- General User (main focus on students):

We have come up with the idea of "general users" as we want our platform to be extended and not one-time use. Our main focus is on students as they are in the frontier with professional practice courses, but when they graduate in that course we want them to stay and use our platform to move on with their careers. Also, other professionals who are willing to find new possibilities are invited to join. They will all have the possibility to register and log in. Also, they can see all the job announcements and apply. Only students assigned by the PP professor will have the right to be in a PP class and link one of their contracts to that course. Also, they will have the opportunity to complete their documentation digitally in real-time.

- Admin (staff from our system):

Will be someone from our platform who will have the right to log in and manage all the businesses, universities & users.

### **2.3 Assumptions**

- Our product will be in the form of a web application, meaning that the system definitely will require a stable internet connection, otherwise it will be impossible to be used by any user. It is assumed that users can connect through desktop/laptop/mobile via the internet.
- It is assumed that the university will assign real emails to professors and career office representatives.
- It is assumed that each user has some minimum knowledge in using desktop/laptop/mobile to browse our web application and navigate through it.
- We will build our web application in English, so it is assumed that each user has some minimum level of English knowledge.
- It is assumed that “general users” (users logged in without verification) will display their real information to build their profile.

### **2.4 Constraints**

- System is independent: It means that our management system is meant to be entirely functioning alone, without any other parallel management systems.
- Database Migration: our database will be created using MySQL, so we could offer quick migration of the information stored in our old database to a new scalable system in the future.
- Accessibility Constraint: Since our product will be in the form of a web application, each user needs to have access to the internet to browse our product.
- Design Constraints: >>>To Be decided in the future<<<

### **2.5 Dependencies**

- Idea flow of our product must be finished before starting with user scenarios and use cases.
- Prototypes & sketches must be finished before starting with the UI.
- System’s Entity Relationship Diagram & Relational Schema of our database must have been completed before we continue Object Relation Modeling in the backend.

### 3. Requirements

#### 3.1 Functional Requirements

Req#	Requirement	Comments	Priority	Date Rvwd	SME reviewed/Approved
BR_01	The system should allow only logged in users to have access to its interface	Required fields are only email and password		19/04/2022, 26/04/2022	Erta, Xhoel
BR_02	The system gives the option for users to sign up	Required fields are Role, Name , Surname, password, Email		19/04/2022, 26/04/2022	Erta, Xhoel
BR_03	The system should show the correct form for the user sign up, when they choose their role	After choosing the role, the required fields will be added or removed		19/04/2022, 26/04/2022	Erta, Xhoel
BR_04	If the user is a business the system should check account verification	The email entered will be compared with those on the database		19/04/2022, 26/04/2022	Erta, Xhoel
BR_05	The system lets the logged in user to view and edit their own account	Every logged in user can edit their own account, but only the fields allowed		19/04/2022, 26/04/2022	Erta, Xhoel
BR_06	The system allows universities and business to create their internships	Universities and businesses have full CRED right to the internships that are present into their own database		19/04/2022, 26/04/2022	Erta, Xhoel



BR_07	The system notifies the student through their own homepage when a new internship is available	The student receives a notification on their homepage, if there is a new internship place available		19/04/2022, 26/04/2022	Erta, Xhoel
BR_08	The system allows universities and business to delete or accept interns proposal	Universities and businesses can delete and accept interns through their main page		19/04/2022, 26/04/2022	Erta, Xhoel
BR_09	The system notifies universities and businesses regarding every new applicant	A new notification is sent to universities or businesses, whenever a student applies for the given internship		19/04/2022, 26/04/2022	Erta, Xhoel
BR_10	System allows their users to see each others profiles but not edit them	User can see other users, universities and businesses profile but not edit or delete them		19/04/2022, 26/04/2022	Erta, Xhoel
BR_11	The system automatically creates a classroom for each teacher added by the universities	Whenever a university open an internship opportunity, that takes more than one student, they can open a classroom so they can manage the documents and the student work through it		19/04/2022, 26/04/2022	Erta, Xhoel
BR_12	The system allows the admin to see the registered users and their roles	The database creates a list of all the registered users and their roles. This list is then shown to the admins of the web		19/04/2022, 26/04/2022	Erta, Xhoel

BR_13	The system assigns a portfolio to every student when they choose their studying field	After a student creates their own profile, and they choose which degree they are studying for, an automated portfolio format will be presented to them. The portfolio than can be updated by the student		19/04/2022, 26/04/2022	Erta, Xhoel
BR_14	The system sends a notification to the student about their acceptance on the internship	The student will receive a notification regarding their internship acceptance		19/04/2022, 26/04/2022	Erta, Xhoel
BR_15	The system creates a database with all the students that have been accepted for the internship and shows it to the assigned professor for each classroom	A database will be made with all the information regarding, every student that has been accepted in the internship (given) and this list will be displayed to the teacher that controls the specific classroom regarding this internship		19/04/2022, 26/04/2022	Erta, Xhoel
BR_16	The system notifies the professor or business when a students requires their internship documents	There will be a notification to the opportunity given, regarding the documents that are being required by their intern		19/04/2022, 26/04/2022	Erta, Xhoel

BR_17	The system notifies the student when the documents have been filled by the business or university	When the documents have been completed there will be a notification in the student inbox, that shows him the finished documents		19/04/2022, 26/04/2022	Erta, Xhoel
BR_18	The system allows both sides to download the documents that were sent by the other side	Any document that has been uploaded by the specific universities or business can be downloaded by the student, and vice versa		19/04/2022, 26/04/2022	Erta, Xhoel
BR_19	The system allows the student to apply for as many internships as they want, even after the student has been accepted in one of the applied internships they can still apply for other	A student can apply for as many internships needed, even after they have been accepted		19/04/2022, 26/04/2022	Erta, Xhoel
BR_20	The system allows the business or universities to admit more than one student for internship	For one job announcement business can agree to employ none or more applicants		19/04/2022, 26/04/2022	Erta, Xhoel

BR_21	The system archives classes after a professor leaves	If a professor leaves the website and their email becomes deactivated, the classroom will not be usable anymore and all the information will not appear to the student or the universities that had the professor		19/04/2022, 26/04/2022	Erta, Xhoel
BR_22	The system should check if an email had been used once to sign in	If a user tries to reuse the same email, for signing in multiple times, than there will be an error which does not allow that action		19/04/2022, 26/04/2022	Erta, Xhoel
BR_23	The system should check if a professor that wants to sign in has been approved by one of the universities	The email that is entered by the professor will be checked if it has been declared by one of the universities		19/04/2022, 26/04/2022	Erta, Xhoel
BR_24	The system allows the career office to only view internships and download them	The career office has limited access in the website, it can only check and download internship information, but not students internship documentation		19/04/2022, 26/04/2022	Erta, Xhoel
BR_25	The system should notify when a file sent is downloaded	When one of the given actors downloads a file, there will be a notification that the file has been received and downloaded		19/04/2022, 26/04/2022	Erta, Xhoel

BR_26	The system should recognize a student through its school email domain	When a student signs with a school email, that email will be connected with the university database		19/04/2022, 26/04/2022	Erta, Xhoel
BR_27	The system allows the student to edit their internship documents	The student has full CRED accessibility on their internship documents		19/04/2022, 26/04/2022	Erta, Xhoel
BR_28	The system notifies the admin for any irregularity that happens in the web	If there happens to be a brute force attack or a user's email has been blocked from sign in (because of multiple login attempts), the system will notify the admin		19/04/2022, 26/04/2022	Erta, Xhoel
BR_29	The system warns the user if any incorrect information has been entered through out the registration	If there is a missing field or any incorrect information the user will be notified, so they can correct this issue, if they do not correct it the procedure can not continue		19/04/2022, 26/04/2022	Erta, Xhoel
BR_30	The system warns the user if there is an internet issue	If there is trouble connecting with the internet service provider, there will be a notification on the user's screen		19/04/2022, 26/04/2022	Erta, Xhoel
BR_31	The system should give the user the opportunity to change their password if they forget it	When a user can not remember their password, they can require a new temporary password, so they can log in and change it		19/04/2022, 26/04/2022	Erta, Xhoel

BR_32	The system should log out a user if the session expires	After the user has been logged in, into the website for more than a certain time, they will be required to re-enter their password to verify that they are still online		19/04/2022, 26/04/2022	Erta, Xhoel
BR_33	The system should check for any irregular log in from any type of user	System will check the credentials while logging in and give access or show the appropriate error message to the user		19/04/2022, 26/04/2022	Erta, Xhoel
BR_34	The system allows business to add their own employees to manage the interns	Businesses can add their users, by uploading their emails on the database. These users can check up with the students and the internships application		19/04/2022, 26/04/2022	Erta, Xhoel
BR_35	The system will allow the user to change their password, from inside their profile	If there is ever a need to change the password, this can be done through the users "Edit Profile". After re-entering their old password or the temporary password (if they have forgotten it), they can change the password into a new one		19/04/2022, 26/04/2022	Erta, Xhoel
BR_36	The system will temporarily freeze a users account, if there are many incorrect logins	When a user tried to access their account, but they enter the wrong credentials that account will be frozen, and only the admin/university/bus		19/04/2022, 26/04/2022	Erta, Xhoel

		iness can unfreeze it			
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## **3.2 Non-Functional Requirements**

### **3.2.1 Product Requirements**

#### **3.2.1.1 User Interface Requirements**

General UI requirements:

- Our main product will be mainly focused to use on desktop & laptop devices but will be responsive even for handheld devices.
- The main focus of our UI will be navigation. We are designing it to be easily navigable, with big buttons and little text, placed in a structured and friendly way for the user.
- When it is possible, the system should limit hard text input and increase the usage of other input alternatives like selection, checkboxes, and even tend to automate features when possible ex. dates.
- Only one type of font will be used throughout all the products and is decided to be Roboto. The size of the font should be at a readable scale.
- The registration and login section would be the landing page.
- The registration section will offer the user the possibility to select his role and then continue with the appropriate registration form.
- The login section will be equal for all. It will require only email and password.
- The design of the profile of the “general user” should be very professional. It should seem like a personal website for each user.
- Photos used throughout the web application should be of higher quality and well sized.
- The color theme used should have plain nature colors.
- Should show a proper error message pop-up for every case when error input is given.

User dashboard UI requirements:

- Each actor of our system will have a different dashboard with its appropriate menu depending on his profile. The style through all the dashboards will be the same with some small changes in colors and menu.
- Business Dashboard:
  - o Registration: register through a separate form.
  - o Profile menu: here businesses can enter, see and edit their profile details.

- o Create Job/Internship announcements: here businesses can create new job/internship announcements. They will have the possibility to add information, and photos and upload documents to create and design their announcements. Also, this menu will provide him with all previous announcements created with the possibility to edit or remove them.
- o View applications menu: it's a menu that will provide all businesses access to all the applications for their announcements. Here they can access and visit applicants' profiles and even accept their applications by connecting with them.
- o Check all contracts menu: this menu shows to the business every applicant who's been accepted by them. From here the business can get a view of the applicant's profile and also the announcement he is connected to.
- o Check PP interns: here is the section where businesses can manage Professional Practice student intern documentation. Here will be displayed all the applicants which are connected and have marked in the contract the option for the Professional Practice course. Businesses have the possibility to sign, download and upload documentation directly from the platform.
- University Dashboard:
  - o Registration: register through a separate form.
  - o Profile menu: here university can enter, see and edit his profile details.
  - o Create a PP course class: here is the menu where universities can enter and create Professional Practice classes to manage their course based on their curriculum. For each class created they will get a field where they must put the email of the professor who is responsible for that course/class.
  - o View all classes menu: here university can enter and access the list of all classes created and archived through the years. Here universities can have the opportunity to edit the assigned professor's email and also view the profile of all students added to the class with the possibility to download all the documentation uploaded to the platform.
  - o Assign Career Office menu: here universities can enter and assign career office representatives' emails.
- Professional Practice Professor Dashboard:
  - o Registration: register through a separate form.
  - o Profile menu: here PP professors can enter, see and edit their profile details.



- o Class menu: here PP professors can access all the current and previous classes assigned by any University through its email. For each class, they will have the opportunity to add students. Also, they can manage their practice by viewing their contract and also uploading and downloading documentation.
- Career Office Representative Dashboard:
  - o Registration: register through a separate form.
  - o View all Job & Internship announcements made by businesses: They will have the opportunity to download each of the announcements in .pdf file format so they can use it for their needs (ex. sending students via email).
- General User Dashboard:
  - o Registration: register through a separate form.
  - o Profile menu: here user can enter, see and edit his profile details.
  - o View all Job & Internship announcements made by businesses: here students can view all the announcements made by any business from any field. They will have the opportunity to apply to the position they want by clicking the Apply button.
  - o View all contracts & applications: here users can see all the contracts made and also all the applications and their status.
  - o Professional Practice Course Class: here only users which are assigned to the class by a PP Professor can access this menu otherwise it will be empty. For those that are assigned, they can mark one of their contracts for the PP course and also check, fill, download and upload the PP documentation in real-time.
- Admin Dashboard:
  - o View all registered Universities menu: here admin can see the list of all university's profiles and have the possibility to verify, edit & remove them.
  - o View all registered Businesses menu: here admin can see the list of all businesses' profiles and have the possibility to verify, edit & remove them.
  - o View all registered Users menu: here admin can see the list of all user's profiles and have the possibility to edit & remove them.

### **3.2.1.2 Usability**

Our web application should be easy to navigate, learn, work & adapt for each user. Every user must be comfortable and effortless to access it. Video tutorials can be placed in each of the registration parts explaining what our PPMS is doing, how to navigate through the system, and how that user can benefit. Pop-up messages are going to alert the user when she/he tries to enter the wrong input ex. login, filling documentation, and editing profile. We will handle errors in a beautiful manner in order to satisfy UX and also minimize errors by displaying/suggesting a solution to the pop-up message.

We are trying to make our navigation to the system, following the methodology “Click & Go”. We are structuring our dashboards to be user-friendly and also simple. We want the user to complete his jobs with only a few clicks, limiting the usage of text input and scrolling. Using this methodology we will decrease the possibility of errors while navigating and using our system.

When an operation is considered “dangerous” ex. deleting records, we will prompt a message and ask for a double confirmation from the user.

### **3.2.1.3 Efficiency**

#### **3.2.1.3.1 Performance Requirements**

PPMS is a web application product for all end-users, meaning it will be used directly from the browser. Mentioning that the main requirement will be the internet connection. A minimum of 4 Mbit/sec is required to have a minimal experience with our system. We recommend a +15 Mbit/sec speed in order so the user experience can be smooth and reliable.

Our system is expected to be affected when a critical number of users (traffic) are using and especially uploading documents at the same time.

Overall 97% of transactions will be processed in -1 second. And for the uploading & downloading part we are expecting to have 80% of transactions in -3 seconds since it needs a bigger time from the server due to massive information transacted.

#### **3.2.1.3.2 Space Requirements**

Our system will be placed on a server and have at least 6 months of operation a 5 TB of memory. This memory should be enough to keep all the system and also since we are dealing with document uploading for the student's documentation we are expecting to have a massive amount of documentation in our system:

1 course = 6 months period

1 student = avg. 18 Mb documentation

1 class = avg. 60 students

1 university = avg. 30 PP courses

We are assuming that in our first 6 months period we are registering 7 universities. Based on the data above here are the calculations for those universities:

$18\text{MB} * 60 \text{ students} * 30 \text{ PP courses} * 7 \text{ universities} = 221.5 \text{ GB of data}$

Also a big memory will require job application announcements and also user profiles as they can have photos & documents placed on their profile. Approximately in 6 months period will be 10 GB of data.

Small additional memory is needed for non-student users and also for class creation.

Based on our calculations a memory of avg. 230-250 GB of data storage is needed in a 6 months period.

We will aim to reduce this amount by placing size uploading restrictions and also using compressing algorithms.

We are expecting to have in a 6 months period heavy traffic, approximately 7 000 - 10 000 users, in the first month (students are searching for internships) and in the last month (students finishing their documentation). Each day we are expecting to have approximately 5 000 – 7 000 users which write their daily documentation for the practice. We are expecting to have big daily traffic in hours: 12:00 – 13:00 for students in a part-time internship & 17:00-18:00 for full-time internship students. With an increase in the number of registered universities, the number of visitors is expected to increase tenfold.

A lower bound for the throughput of our web application is around 100 transactions/second. This should be enough to satisfy and ensure a smooth experience from the user's point of view.

#### **3.2.1.4 Dependability**

##### **Availability**

- PPMS will be available any time 24/7 for each user.
- PPMS will be available to be accessed from any geographical area inside and outside Albania.
- PMMS is going to function 99.9% of the time during high working hours and will have a maximum of 1-hour downtime once per week at midnight due to maintenance.

## **Reliability**

### **Monitoring**

Our staff will implement routine tests for each type of user in order to test the system. Also, we will connect our web application with Google Analytics and will keep track & monitor our traffic. Google Analytics will provide us with details about login times, most pages visited, time spent per page, geographical span traffic, etc.

### **Maintenance**

Our system will be maintained by the developers which will integrate new features. Also, each feature before deploying to production will pass through several phases that will be analyzed and tested by our staff. We will provide a means of communication to our application in order so users can contact us directly and give us their feedback. We need and will use that feedback to incorporate new features on their demand. In case of any error, we will make sure that an appropriate error message will be displayed suggesting also different solutions to that error.

## **Integrity**

### **3.2.1.5 Security**

#### **3.2.1.5.1 System Protection**

- In order to increase our security PPMS will be accessed through HTTPS, which offers an encrypted communication protocol using Transport Layer Security (TLS).
- We will encrypt every password registered in our database through the password\_hash() function in PHP since it uses a strong one-way hashing algorithm.
- Since our web application will be coded in backend with PHP our main security principle and practice will be “Filter Input & Escape Output” in order to eliminate every possible way that threatens our system security.

#### **3.2.1.5.2 Authorization & Authentication**

- In order to be authenticated and logged in to the system, every user must provide their email and password. Once a user logs in, a session is created for that user. The session created in PHP will store the data on the server and not on the user’s device. The user will be identified through its

session ID (SID). This SID will identify him while linking it throughout all the navigation to our system. The session is destroyed as soon as the user logs out.

- A manual verification & authorization will be placed by our staff for two types of users: business & university, in order to increase the reliability of our systems.
- We will use a profile level checker in order so each user when enters his credentials it's going to land on the appropriate dashboard.

#### **3.2.1.5.3 Data Management & Security**

- All the user personal data including documentation uploaded in our system must be collected with their consent. They will have to check and comply with our Privacy & Policy statement when they register in our system.
- We do not take responsibility and leave it in the hands of the user for any information they provide in our system (text, image & documentation) that complies with various regulations and copyrights.
- Users have to contact us directly if they want to delete their account and remove all their data from the system in order to conform to GDPR rules.

### **3.2.2 Organizational Requirements**

#### **3.2.2.1 Environmental Requirements**

- PPMS will help universities manage their Professional Practice course by helping those creating virtual classes and manage course documentation in real-time digitally by being time-efficient and also reducing paperwork.
- PPMS will help businesses promote themselves in the Albania market and build a bridge between them and young talents striving to pursue a career.
- Since our system is web-based it needs to be managed by a device (PC, laptop) by any of the users so it needs a power supply and internet connection infrastructure which needs to be ensured by the user itself.

#### **3.2.2.2 Operational Requirements**

PPMS is a web-based application that will provide better management and reliability of professional practice courses. It has to provide universities the possibility to open virtual classes and assign professors so they can manage classes and students' documentation. The system will provide each user the possibility to download and upload documents. Admin on the other end will have the possibility

to verify accounts of businesses and universities when they register and also all possible CRUD operations for all other accounts.

### **3.2.2.3 Development Requirements**

Front End technologies regarding Client-Side web development:

HTML

CSS

Bootstrap

JavaScript

Back End technologies regarding Server-Side web development:

PHP

MySQL (database)

### **3.2.3 External Requirements**

#### **3.2.3.1 Regulatory Requirements**

Privacy Policy: Since it is a web application PPMS, in compliance with GDPR and national legislation in Albania, will have a separate page displaying the Privacy Policy statement. This page will contain all possible information about how we store and treat users' data, giving them the opportunity to track their data in our system. Also will display here the necessary steps that users can follow in order to delete their data entirely from our system.

Copyright Statement: PPMS does not take responsibility for the information (text, images, documentation) that the user inserts/upload to the system. We take full responsibility to answer & take action to any reports made by individuals & authorities

#### **3.2.3.2 Ethical Requirements**

PPMS collects and processes the personal data of its users in fulfillment of its legal and contractual rights and obligations and in full compliance with national and international laws. PPMS can directly collect personal data by filling out online application forms for PPMS which are registered in the systems of her or her authorized service providers. Completion of these data is voluntary.

PPMS ensures the personal data subjects that their data are collected and processed only for the purposes of realization of the contractual and informative relationship. By using the system and/or giving the approval for registration/contact, the data subjects give their consent for further processing

and guarantee that the completed personal data is accurate, true, and up to date. Furthermore, the personal data subject is responsible for updating the recorded data to ensure that the information is continuously and fully updated.

Data subjects have the right to refuse consent at any time for the collection and use of their voluntarily notified data and to request the deletion of this data by exercising the right to terminate the contract concluded between the parties.

### **3.2.3.3 Legislative Requirements**

PPMS collects and processes the personal data of its users in fulfillment of its legal and contractual rights and obligations and in full compliance with Law No. 9887, dated 10.3.2008, "On personal data protection" (amended). Within the use of the official website **www.ppms.al\*?**, PPMS can directly collect personal data by filling out online application forms for PPMS which are registered in the systems of her or her authorized service providers. Completion of these data is voluntary.

PPMS ensures the personal data subjects that their data are collected and processed only for the purposes of realization of the contractual and informative relationship. By using the system and/or giving the approval for registration/contact, the data subjects give their consent for further processing and guarantee that the completed personal data is accurate, true, and up to date. Furthermore, the personal data subject is responsible for updating the recorded data to ensure that the information is continuously and fully updated. Personal data subjects have the right to request access to their data and to request that this data be corrected or updated in accordance with the requirements of Articles 13 and 18 of Law 9887 dated 10.3. 2008 "On the protection of personal data". The request can be addressed to the address **team@ppms.al\*?**.

Data subjects have the right to refuse consent at any time for the collection and use of their voluntarily notified data and to request the deletion of this data by exercising the right to terminate the contract concluded between the parties.

Our data management and treatment are in accordance with the GDPR Regulation (EU) 2016/679 (General Data Protection Regulation) in the current version of the OJ L 119, 04.05.2016; cor. OJ L 127, 23.5.2018.

### **3.2.3.3.1 Accounting Requirements**

### **3.2.3.3.2 Security Requirements**

- Although no computer network is invulnerable to attack, PPMS uses reasonable physical, electronic, and procedural security measures designed to protect your PII from unauthorized disclosure.

- These security requirements are in accordance with the security requirements mention above in section 3.2.1.5 Security.

### **3.3 Domain Requirements**

Our system is in accordance with any specific requirements needed by our systems actors in accordance (university, business) with their job. Universities are getting verified by direct contact from our staff through the information they provide in the registration form. Our system ensures a full approach to the Professional Practice course and implements an original & university-approved documentation template for the course requirements completion. Businesses are registering and getting verified by using as a requirement their NIPT. Businesses are free to create their profile and market themselves without any restrictions.

## **4. Software Design**

### **4.1 User Scenarios/Use Cases**

#### **4.1.1 User Scenarios**

Scenario title: Successful user log-in

- a. The user opens the PPMS's homepage in order to log in to the system.
- b. At the top-right of the homepage he clicks the login button. He is immediately redirected to the login page.
- c. At the login page he is prompted to enter his ID and password. He enters the credentials accurately and then clicks on the submit button.
- d. The login is successful and the user gains access to the system via a dashboard designed based on his user rights.

Scenario Title : Successful user log-out

- a. User has finished all the work that he wanted to do in the PPMS web application. Now he wants to log ot from his account
- b. He clicks the icon with his name at the top-right of his dashboard and select the option "Log Out".
- c. The user is redirected to PPMS's homepage and he is successfully logged out of the system.



## **Admin Scenarios**

Scenario Title: Admin wants to edit information of an entity (user/business/professor/university)

- a. .The admin makes sure he is logged in. Under the admin dashboard he chooses each entity's menu.
- b. He is shown a list of current entities. He goes to the search bar, types the ID or name of the entity and presses enter.
- c. A user or a list of entities is shown to him, along with short information on the side. He chooses the correct user.
- d. The entity's profile consists of a form filled with personal information. The admin chooses either entries in the form, edits their contents and clicks "Update Profile". Each entity has different form. The new field values are persisted in the database of the system.

Scenario Title: Admin wants to delete or deactivate an entity (user/business/professor/university)

- a. Admin makes sure he is logged in. Under the admin dashboard he chooses the menu of the entity.
- b. He is shown a list of current entities. He goes to the search bar, types the entity ID or name and presses enter.
- c. A list of entities is shown to him, along with short information on the side. He chooses the correct user.
- d. In the entity's profile he chooses either the option "Delete" or "Deactivate ", depending on the preference.
- e. The user is deleted from the system.

Scenario Title: Admin wants to create a new entity (user/business/professor/university)

- a. Admin makes sure he is logged in. Under the admin dashboard he chooses the menu of the entity.
- b. He is shown a list of current entities. On the side of the page there is a menu "Create New (entity name)". He chooses this menu.
- c. A form prompting for personal information of the new entity, each entity requires different information.
- d. The admin fills this form and then hits "Save(entity name)". The new entity is saved in the database of the system.

- e. The entity is notified via email that a new profile has been created for him in our system. Also the login credentials are shown to him.

Scenario Title: Admin verifies the registered universities.

- a. Admin makes sure he is logged in. Under the admin dashboard he chooses the menu of University.
- b. He is shown a list of current registered universities. The unverified universities have a red mark close to them.
- c. He clicks to the wanted university, checks registration/documentation and clicks on “Verify” to verify the university.

Scenario Title: Admin verifies the registered businesses.

- a. Admin makes sure he is logged in. Under the admin dashboard he chooses the menu of Businesses.
- b. He is shown a list of current registered businesses. The unverified businesses have a red mark close to them.
- c. He clicks to the wanted business, checks registration/documentation and clicks on “Verify” to verify the business.

## **Business Scenarios**

Scenario Title: Business creates job/internship

- a. Admin makes sure he is logged in and account is verified. In the dashboard he chooses “Create new position” and is redirected into a new page.
- b. A form prompting for the position’s information, such as a title, position type, job description etc.
- c. The business fills this form and then hits “Save position”. The new position is saved in the database of the system.
- d. The position is now public to anyone.

Scenario Title: Business manages the created jobs.

- a. Admin makes sure he is logged in and account is verified. In the dashboard he chooses “Created jobs” and is redirected into a new page.

- b. A list of created jobs is shown to him. He clicks on his wanted job and has two options, to update or delete it.
- c. To edit the job, he clicks on edit and a form with all the job information is shown to him. He edits their contents and clicks “Update Job”. The new field values are persisted in the database of the system.
- d. To delete the job he clicks on “Delete Job”. A window prompt pops up asking if he is sure. He clicks yes to delete dhe job is deleted from the database.
- e. The position is not visible in the website anymore.

Scenario Title: Internship acceptance.

- a. Admin makes sure he is logged in and account is verified. In the dashboard he chooses “Applicants” and is redirected into a new page.
- b. A list of applicants is shown to him. He clicks on the wanted application.
- c. He can click on “View Profile” to check the applicants profile, “Message” to message the applicant to make a deal or “Accept” to accept the application
- d. The applicant will get notified of the acceptance.

Scenario Title: View profile of applicant.

- a. Admin makes sure he is logged in and account is verified. In the dashboard he chooses “Applicants” and is redirected into a new page.
- b. A list of applicants is shown to him. He clicks on the wanted application.
- c. He can click on “View Profile” to check the applicants profile

Scenario Title: Check Professional Practice interns.

- a. Admin makes sure he is logged in and account is verified. In the dashboard he chooses “Interns” and is redirected into a new page.
- b. A list of interns is shown to him. He clicks on the wanted intern.
- c. He clicks on “Contract” to view the contract with the intern or “Documents” to check all the documentation of the intern.

Scenario Title: Manage professional practice interns contract and documents

- a. Admin makes sure he is logged in and account is verified. In the dashboard he chooses “Interns” and is redirected into a new page.
- b. A list of interns is shown to him. He clicks on the wanted intern.

- c. He clicks on “Edit Intern” to edit the contract and documents of the intern.
- d. To edit the contract he click on “Edit contract” where a form prompting for new contract information. The new contract is updated in the database.
- e. To edit the documentation he clicks on “Edit documentation” where a form prompting for new document information. The new document is updated in the database.

### **Career Office Scenarios**

Scenario Title: View all job/internship announcements

- a. He makes sure he is logged in. In the dashboard he chooses “Announcements” and is redirected into a new page.
- b. A list of internships/jobs is. He clicks on the wanted internship/job.
- c. Can check all internship/job details and description.

Scenario Title: Download job/Internship in .pdf file format

- a. He makes sure he is logged in. In the dashboard he chooses “Announcements” and is redirected into a new page.
- b. A list of internships/jobs is. He clicks on the wanted internship/job.
- c. He can click on “Download” to download the job/internship in pdf format.

### **General User Scenarios**

Scenario Title : The student wants to view its own profile

- a. The student wishes to check its profile page in order to see some of its personal information, but first he must log into the system.
- b. After logging in, the Student dashboard is revealed to him. He clicks the button “My profile” at the left.
- c. All his personal information is shown to him. The student can edit his personal information by clicking the button “Edit Profile”, at the top-right corner.
- d. After changing one specific information he has to click “Save” in order for them to be updated in the database

Scenario Title : Student can apply for Job/Internship

- a. A third year student has to take the course of PP in order to get all the required credits to graduate. For this course he need to search for a job or internship
- b. First, he makes sure he is logged-in in the system. On his dashboard he clicks on “Search for a Job/Internship” module.
- c. A list of available positions appears ordered by modified date. Student can choose to apply on the one he finds the most relevant.
- d. After getting all the information for the job/internship, he clicks on to the “Apply” button.
- e. His application is now sent to the business, in order for them to confirm

Scenario Title : Student can view all contracts & applications

- a. A student wants to check his PP application, in order to get some information. First, he has to have one application for a job/internship
- b. After logging in to the system, he clicks on the “Applications & Contracts” module, in his dashboard
- c. The list of his applications & contracts appears in a chronological fashion. Student may view only the jobs that he has applied for and has received no answer yet, is pending, is rejected or has been accepted.

Scenario Title : Mark a contract for the PP course

- a. The student has applied for a professional practice job/internship.
- b. Therefore he must mark a contract for the PP course.
- c. He gets the confirmation from the Business that he applied to. After signing the contracts, he adds it at the PP course.

Scenario Title : Check the PP course Documentations

- a. The student is added by a professor to a class. He has found a job and now wants to view the professional practice documents that he has to fill.
- b. After logging in to the system, he clicks on the “Documentation” module, in his dashboard.
- c. The latest documents are directly shown to the student dashboard. To view older documents, he can expand the list by clicking on “Show more” button and choose one of the following options: Today, This week, This month, This year, Specific Period
- d. The student has the option to fill the documents and download them as a pdf file.

Scenario Title : Student can fill the documents

- a. The student finishes a day of work or wants to check on what he has done before for mistakes.
- b. After logging in to the system, he navigates on the “Documentation” module, in his dashboard. The latest documents are directly shown to the student dashboard.
- c. At the top right of the dashboard, he clicks on the “Fill new document” button. A new document file is opened where he can add the daily report with descriptions of what he has done during the day
- d. He also may open his documents, edit them as many times as he likes and fix mistakes that have been pointed out by the professor.

### **PP Professor Scenarios**

Scenario Title : The professor wants to view its own profile

- a. The professor wishes to check its profile page in order to see some of its personal information, but first he must log into the system.
- b. After logging in, the Professors dashboard is revealed to him. He clicks the button “My profile” at the left.
- c. All his personal information is shown to him. The professor can edit his personal information by clicking the button “Edit Profile”, at the top-right corner.
- d. After changing one specific information he has to click “Save” in order for them to be updated in the database

Scenario Title : Professor can check the classes assigned by University

- a. The Professor wants to have an overview of all the classes that are assigned to him by the university and do a working plan for each class
- b. Firstly, make sure he is logged into the system. In the Classes section he will click on “View All My Classes”.
- c. All classes that have been assigned to the professor will be shown in the dashboard.

Scenario Title : Add student to the PP class

- a. A new student has chosen to take the professional practice course. The professor should add this new student to the PP class

- b. The professor makes sure he is logged in. Under the Professor dashboard he chooses the menu “Classes”. He is redirected to a new page.
- c. On the side of the page there is a menu “Add New Student”. He chooses this menu.
- d. A form prompting for personal information of the new user including full name, email, age and role is shown.
- e. The professor fills this form and then hits “Add student”. The new student is saved in the database of the system.
- f. The student is notified via email that a new profile has been created for him in our system. Also the login credentials are shown to him.

Scenario Title : View student’s profile joined in classes

- a. The professor wishes to check the profile page of the students that have joined the class, in order to see some of their information needed to fill some papers, but first he must log into the system.
- b. After logging in, the Professors dashboard is revealed to him. He navigates on to the “Classes” menu at the left, and then clicks on “ Students “ section
- c. The students are shown in the dashboard ordered in alphabetical order.
- d. Professor clicks on the student that he wants to revise. Students’ profile is shown to him along with the specific information, contract and reports.

Scenario Title : Professor can View & Download student’s PP contract

- a. The professor views students in his class and he wants to check on the job position that he has made and download it to have a copy in his device.
- b. He navigates into the “Class” menu in his dashboard and chooses “Contract” on to one specific student from the list.
- c. He can check for its validation and may download it as a pdf format file.

## **University Scenarios**

Scenario Title: University Registration

- a. The university opens the PPMS’s homepage in order to register into the system.
- b. At the top-right of the homepage he clicks the register button. He is immediately redirected to the register page.

- c. The university has to fill out the requested fields with information such as name, username, password, address, contact information.
- d. After filling out the registration form, by pressing the “ Register ” button the university will wait for the admin to verify its account.
- e. After receiving the account verification from the admin, the university account will be created and he can log in.

Scenario Title : University wants to view its own profile

- a. The university wishes to check its profile page in order to see some of its personal information, but first the university must log into the system.
- b. After logging in, the university dashboard is revealed to him. He clicks the button “My profile” at the left.
- c. All his personal information is shown to him. The university can edit his personal information by clicking the button “Edit Profile”, at the top-right corner.
- d. After changing one specific information he has to click “Save” in order for them to be updated in the database

Scenario Title : Create a Professional Practice Course class

- a. A group of third year students want to take a professional practice course, therefore the university has to open a new class for this course.
- b. University has to log in into the system first.
- c. On his dashboard he clicks on the “Create a PP class” module. A form with the following input fields is shown : name, class code and number of credits.
- d. The university must also assign the email of the PP professor to the class. Thus, the professor will have this class added to the list of the one’s he will be responsible for.
- e. After filling all the required fields, the Professional Practice Class will be created.
- f. Now, the professor can see the class added to the list.

Scenario Title : Assign a Career-Office email

- a. University wants to add the email of a Career Office employee. The university makes sure he is logged-in in the system.
- b. On his dashboard he clicks on the “Career Office” module.



- c. University assigns one of the Career Office employees email to allow them to be recognized as such by the system and allow them to use that level of authority.
- d. The email is now registered in the database.

Scenario Title : University can Edit/Remove career office representer

- a. University may decide to change the employee who will represent the Career Office or they may even choose to completely remove that position if it is not important to them anymore.
- b. The university makes sure he is logged-in in the system. On his dashboard he clicks on the “Career Office” module.
- c. University must have assigned at least one email for this position.
- d. He can choose the option to edit or remove office representatives. After clicking one of the respective ones, the email of the person responsible is changed or completely removed.

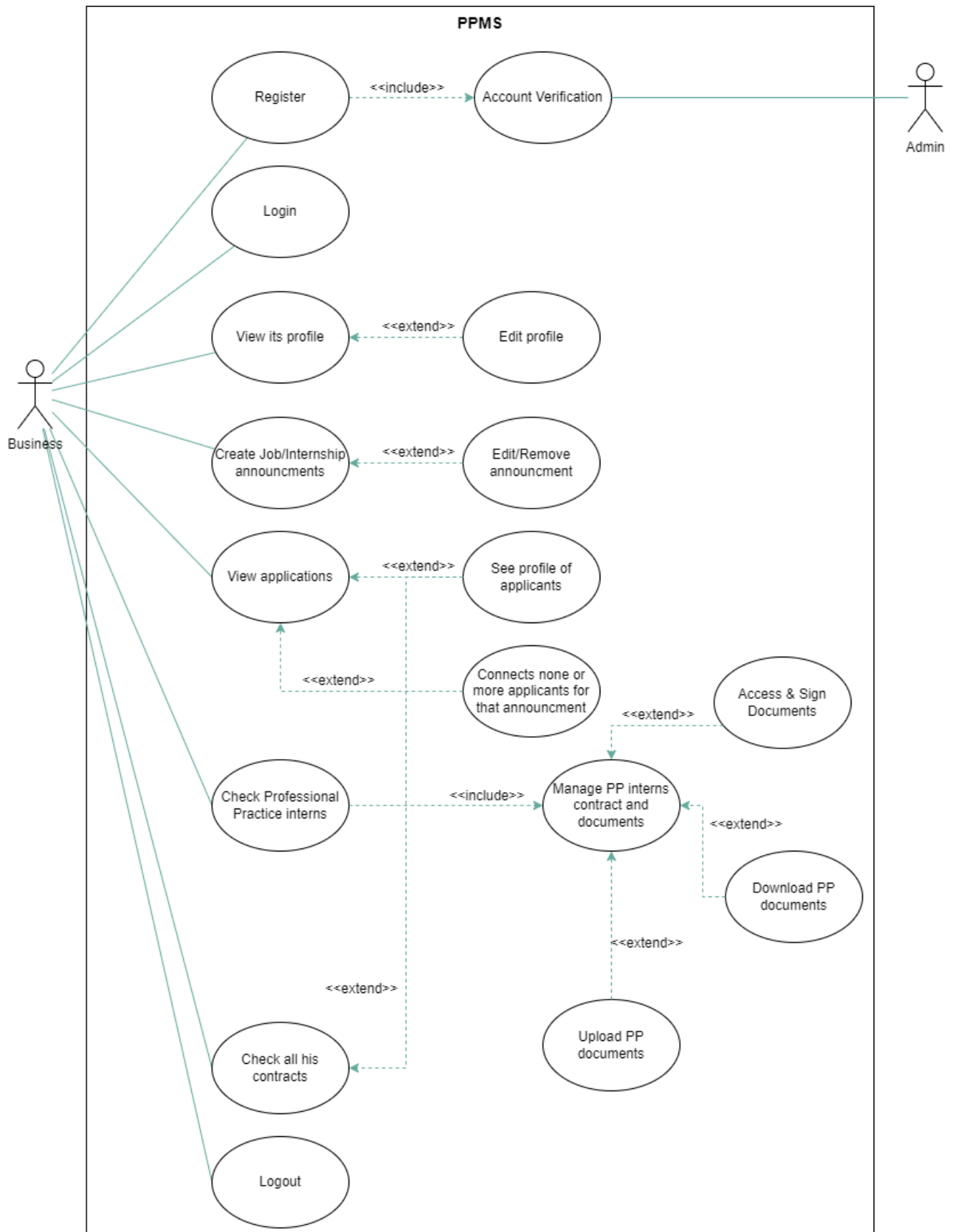
Scenario Title : Show all the classes

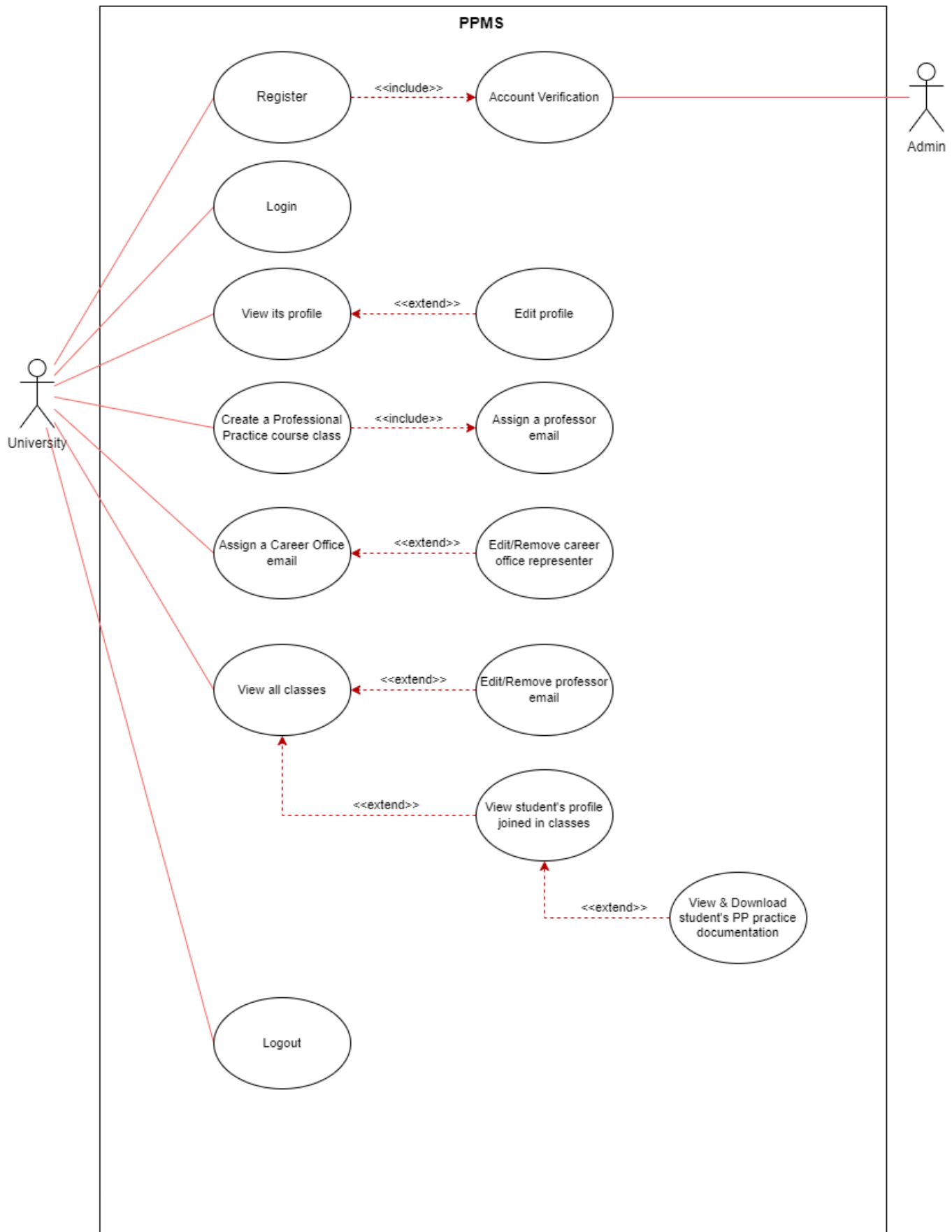
- a. University wants to view a list of all the classes that he has created.
- b. First, make sure he is logged-in in the system. On his dashboard he clicks on the “Classes” module.
- c. All the classes' records are shown to him in a chronological fashion.

Scenario Title : University can view the profile of students that have joined the class

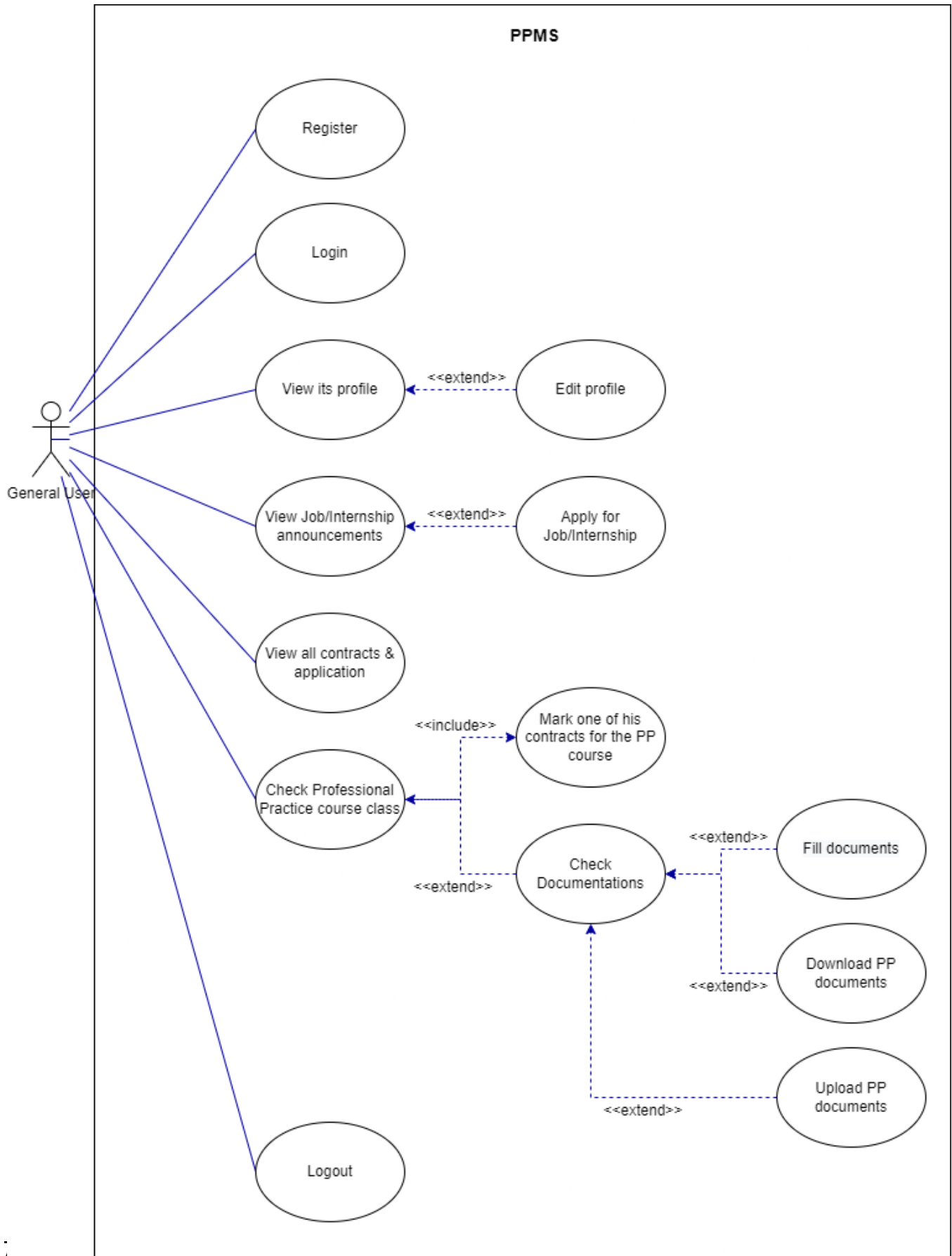
- a. University wants to check the number of students that have joined the class so far. Therefore, the university on his dashboard clicks on the “Classes” module.
- b. He clicks on the class that he wants to examine. A list of students ordered in an alphabetical order is appeared
- c. The university can view each of the student profiles by clicking the arrow at the end of the line.
- d. When the student profile is shown, the university can view the PP documents that are filled by the students and when it is time to sign them, they can download them and put their signature in.

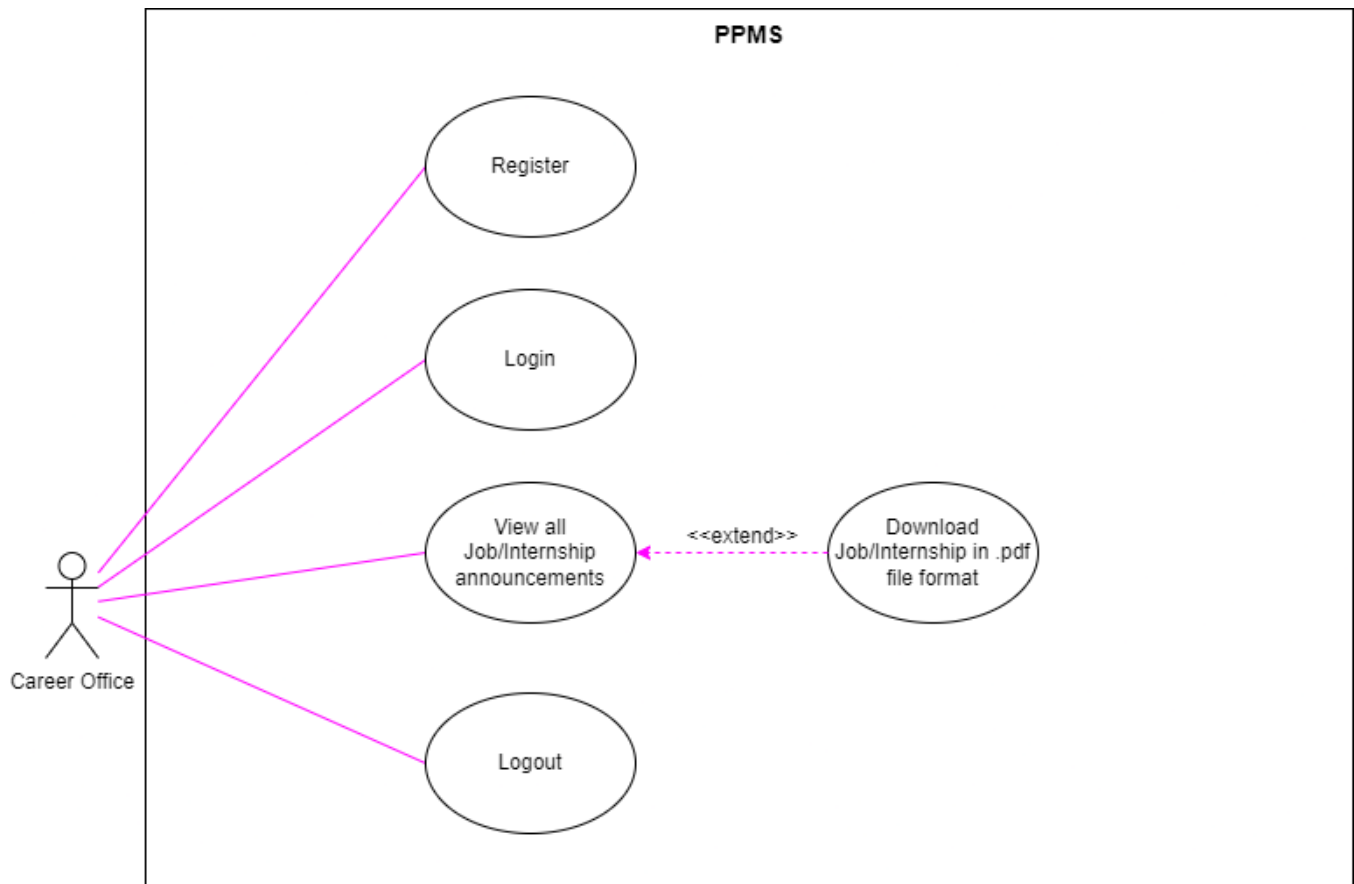
#### **4.1.2 Use Cases Diagram**

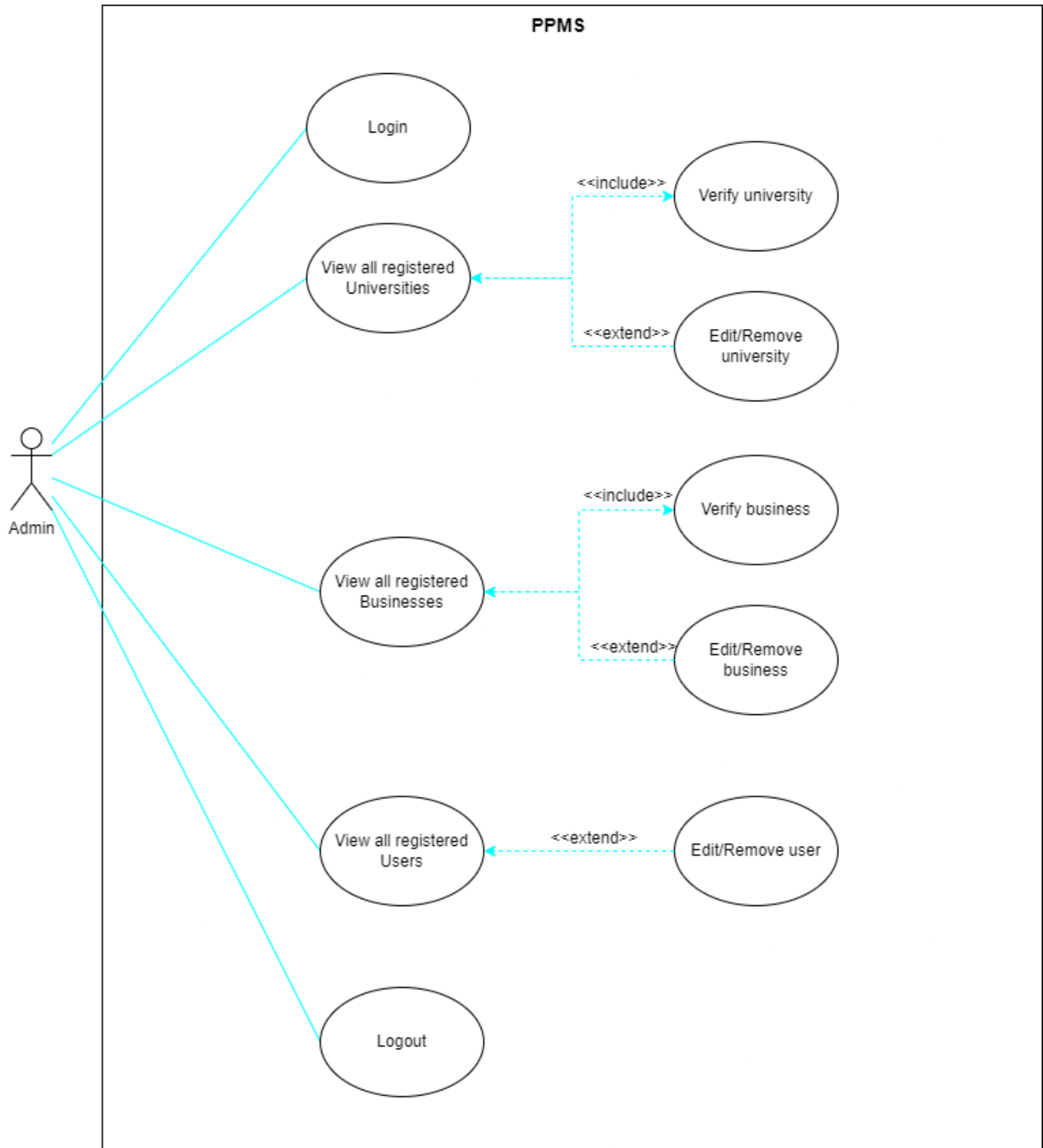


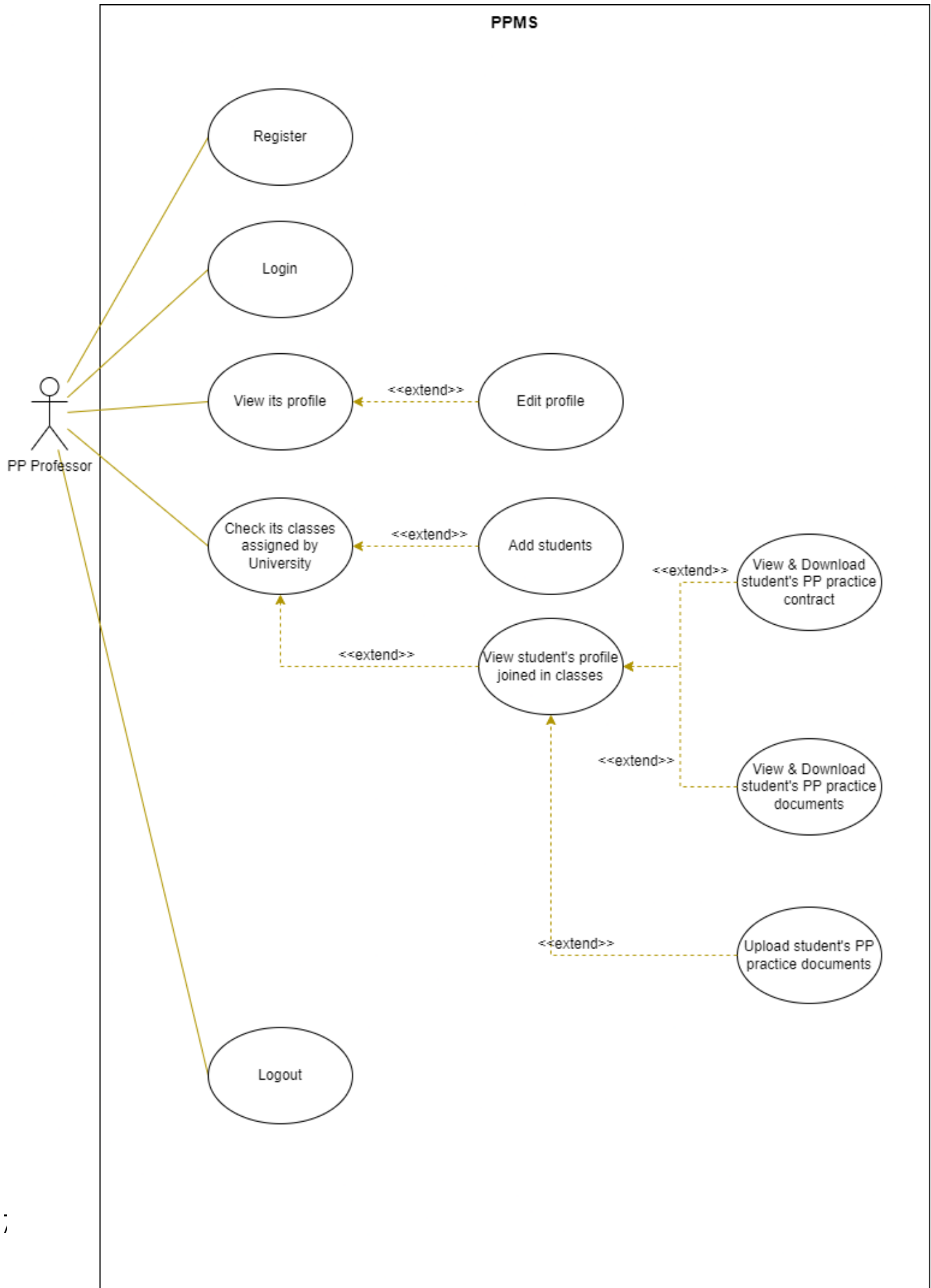




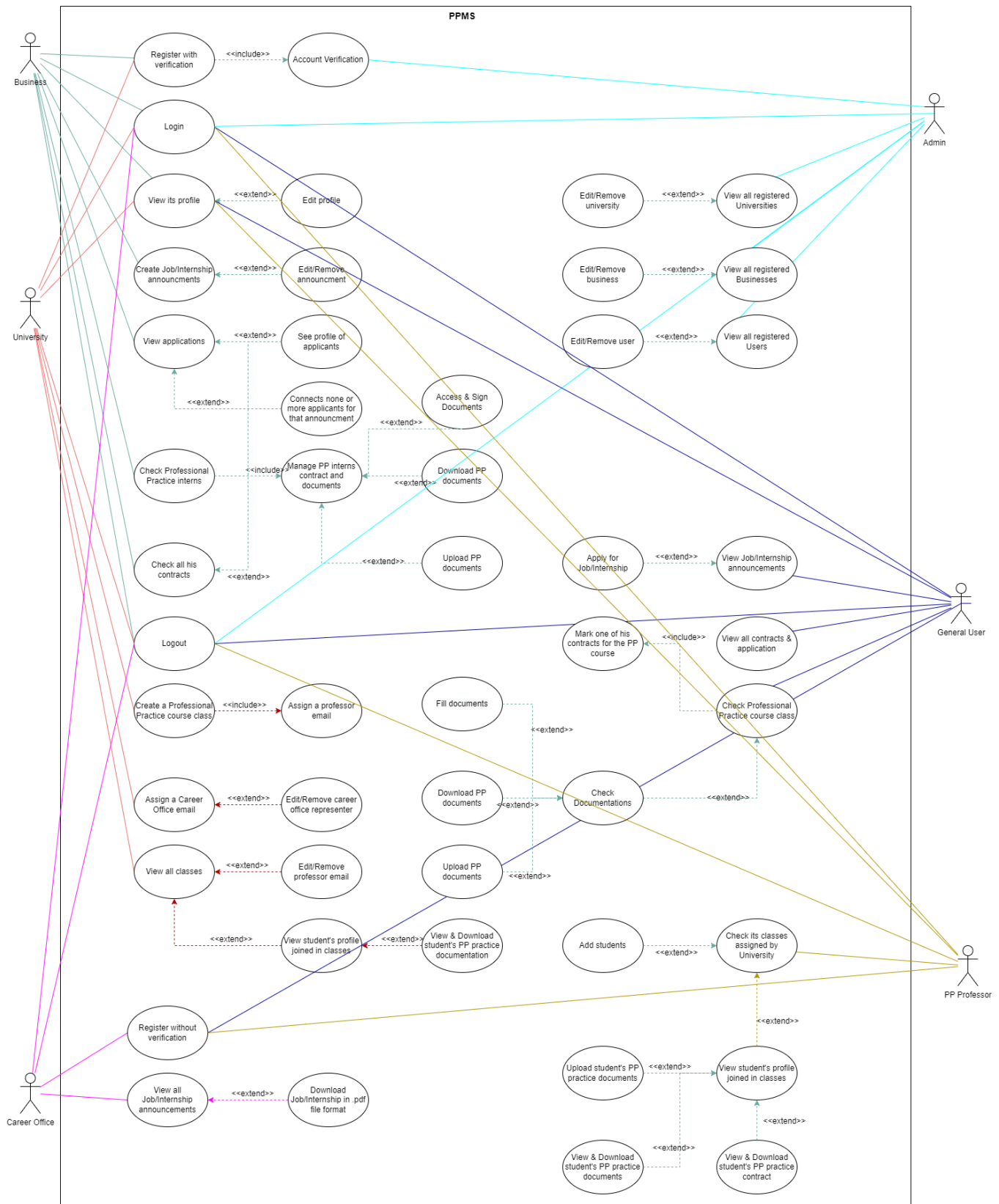












#### 4.1.3 Use Cases Extended

UC_1	Register with verification
Summary	Users must register through the form.
Actor	Business, University
Description	After the user completes the form and clicks register if he has chosen to register as one of the above actors he must wait for a verification from the admin before he may login.
Pre-Condition	User that completes the form must be a business or a university.
Post-Condition	The business and university now must wait for verification and once they receive it they may login.

UC_2	Register without verification
Summary	Users must register through the form.
Actor	Professor, Student/User, Career Office
Description	After the user completes the form and clicks register, he is immediately saved in the system and may login without waiting for confirmation from the admin.
Pre-Condition	User must fill the register form
Post-Condition	Users are registered in the system.

UC_3	Account verification
Summary	Some of the users need to be checked by the admin.
Actor	Admin
Description	Once a business or university attempts to register the admin will be notified and he will send a confirmation to the user in email if he was the one who attempted to register. If he receives confirmation, he will add the user's info in the database.
Pre-Condition	Users that complete the form must be business and university.
Post-Condition	Business and university are registered in the system.

UC_4	Log in
Summary	Each registered user can log in the system by entering their own credentials.

Actor	Admin, Business, University, Student, Professor, Career Office.
Description	Users enter the username and password and if it is correct, can go directly in their own profile. If not, the system shows a warning message prompting the user to re-enter their credentials.
Pre-Condition	Users should have a valid account.
Post-Condition	Users will be directed to their dashboard.

UC_5	View all Registered Universities
Summary	Admin can check registered universities.
Actor	Admin
Description	The admin may at any moment view all the Universities that are registered for whatever reason he wants be it confirmation or simply knowledge.
Pre-Condition	Universities must be registered and user to be an admin.
Post-Condition	No post conditions.

UC_6	Edit/remove university
Summary	Admin can edit or remove universities.
Actor	Admin
Description	The admin can take action on all registered universities by editing their information or removing them. Of course, these actions will be taken after confirmation with the user or in case of other serious problems.
Pre-Condition	Universities must be registered and user to be an admin.
Post-Condition	The information about universities now are edited or removed.

UC_7	View all registered business
Summary	Admin can check registered businesses.
Actor	Admin
Description	The admin may at any moment view all the businesses that are registered for whatever reason he wants be it confirmation or simply knowledge.
Pre-Condition	Business must be registered and user to be an admin.
Post-Condition	No post conditions.

UC_8	Edit/remove business
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Summary	Admin can edit or remove universities.
Actor	Admin
Description	The admin can take action on all registered businesses by editing their information or removing them. Of course, these actions will be taken after confirmation with the user or in case of other serious problems.
Pre-Condition	Businesses must be registered and user to be an admin.
Post-Condition	The information about Businesses now is edited or removed.

UC_9	View all Registered users
Summary	Admin can check users.
Actor	Admin
Description	The admin may at any moment view all the users that are registered for whatever reason he wants be it confirmation or simply knowledge.
Pre-Condition	Users must be registered and user to be an admin.
Post-Condition	No post conditions.

UC_10	Edit/remove users
Summary	Admin can edit or remove users.
Actor	Admin
Description	The admin can take action on all registered users by editing their information or removing them. Of course, these actions will be taken after confirmation with the user or in case of other serious problems.
Pre-Condition	Users must be registered and user to be an admin.
Post-Condition	The information about Businesses now are edited or removed.

UC_11	Log out
Summary	Each user can log out of the system.
Actor	General User/Student, Professor, Admin, University, Career Office, Business.
Description	After finishing a job in the system each user can easily log out.
Pre-Condition	Users must be logged in.
Post-Condition	No post conditions.

UC_12	View profile
Summary	Users may view their profiles.

Actor	Business, University, General User/Student, Professor.
Description	These users may at any time while being logged in on our page may view their own profile.
Pre-Condition	Users must be logged in.
Post-Condition	No post conditions.
UC_13	Edit profile
Summary	Users can edit their profiles
Actor	Business, University, General User/Student, Professor.
Description	These users while viewing their profile may change at any time their personal information. The only information they will not be able to change is their identity as student, professor or any other that they chose to register as.
Pre-Condition	Users must be logged in.
Post-Condition	No post conditions.

UC_14	Create Job/Internship announcements
Summary	Businesses can create internships.
Actor	Business
Description	Businesses can create job or internship announcements for any openings that they have. Here they can give details about job/internship position, requirements, number of open spots and time until they are searching.
Pre-Condition	Business must be logged in.
Post-Condition	No post conditions.

UC_15	Edit/Remove announcements
Summary	Businesses can edit or remove announcements.
Actor	Business
Description	Businesses can at any time of their choosing edit or remove the job/internship they have created in case the information has changed or they do not need the position any more.
Pre-Condition	Business must be logged in.
Post-Condition	The information about the announcements is updated or removed.

UC_16	View applications
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Summary	Businesses may see all the applications from users that have made requests.
Actor	Business.
Description	Businesses must see the application requests that come from all users which have access to this specific business. They can view all the applications by navigating to the “Applications” (or whatever it is going to be called) menu on the top navigation bar .
Pre-Condition	1 or more job/internship offers have been made, users have applied for 1 or more of them.
Post-Condition	The business can view the details about the applicants.

UC_17	See profile of applicants
Summary	The businesses may see the applicants profile.
Actor	Business.
Description	If business is interested in any of the applicants, they might need to see a resume of each of them before they decide. If the business decides to hire them, they might also need some contact information for the applicants in order to contact them via phone or email.
Pre-Condition	The applicant must be in the list of the applications.
Post-Condition	Profile details are displayed in the system.

UC_18	Connect none or more applicants for that announcement
Summary	Business may declare how many applicants he can accept
Actor	Business.
Description	When a business creates a job/internship opening in their company they also declare how many people they are looking to hire. Many people can apply but only some will be hired.
Pre-Condition	A job offer exists.
Post-Condition	Selected applicants are contacted.

UC_19	Check Professional Practice Interns
Summary	Businesses must be able to check PP interns.
Actor	Business.
Description	Businesses will have permission to view details about all the interns of the Professional Practice that they have hired.
Pre-Condition	The student is employed by the business.
Post-Condition	Business will be able to check all PP interns.

UC_20	Manage PP interns contract and documents
Summary	Businesses can edit PP documents.
Actor	Business.
Description	Businesses will have the right to view and manage the documents of the students that they have hired. They will be able to modify the parts that are for them.
Pre-Condition	The intern must have already been in the check list of the Professional Practice.
Post-Condition	The documents data may change.

UC_21	Download PP documents.
Summary	Download PP documents.
Actor	Business.
Description	The business will be able to download a copy of the documents on their device. This may be to keep a copy or in order to print it and sign it.
Pre-Condition	The user is logged in as a business and he has employed a student.
Post-Condition	The user will have a copy in his device.

UC_22	Upload PP documents.
Summary	Upload PP documents.
Actor	Business.
Description	The user will be able to upload documents into a student's profile. This will be done in case he first downloads to sign them and after them he uploads the documents for the student to have them ready.
Pre-Condition	The user is logged in as a business and he has employed a student.
Post-Condition	The document will have changed to the uploaded one.

UC_23	Access & Sign Documents
Summary	If the intern is accepted, Business should access and sign all of his documents.
Actor	Business.
Description	After an intern has made his request in a specific Business and he is accepted, the business can sign his contract and access it whenever he wants.
Pre-Condition	Documents must be managed before, some interns must be selected, in order to sign the contract and then access it.

Post-Condition	The document will have changed
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UC_24	Check all His Contracts
Summary	Business can check his contracts
Actor	Business.
Description	The business may at any time while being logged in, view all the contracts that they have made.
Pre-Condition	Business has employed users and is logged in.
Post-Condition	No post conditions.

UC_25	View all Job Internship announcements
Summary	Users can view any internship.
Actor	Career Office, General user/Student, Professor, University, Admin, Business.
Description	All the users may at any time be logged in or not view any and all job/internship offers that are made in our program. They may even search them based on their requirements.
Pre-Condition	Access our program.
Post-Condition	Users can access the job/internship offers and students can apply to them.

UC_26	Download Job / Internship in .pdf file format
Summary	Career office must be able to download a job or internship in a pdf file.
Actor	Career office.
Description	After having access to different internships, the career office can easily download an internship or a job and its details and requirements, by clicking the button "Download as PDF".
Pre-Condition	Users must be logged in as a Career Office.
Post-Condition	A copy of the job offer is made on the user's device.

UC_27	View & Search all Businesses
Summary	Career office must be able to view & search all businesses.
Actor	Career office.
Description	After logging in the career office can view & search all businesses.
Pre-Condition	Users must be logged in as a Career Office.



Post-Condition	User can search & view all businesses
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UC_28	Apply for Job/Internship
Summary	General users/Students may apply for job offers.
Actor	General user/Student.
Description	After being logged in, the user views all the job/internship opportunities, and can apply to them.
Pre-Condition	Users must be registered and logged in.
Post-Condition	An application is sent to the business.

UC_29	Create a Professional Practice course class
Summary	Universities can create classrooms.
Actor	University
Description	Universities can create many classrooms for different courses. These courses may be edited or deleted.
Pre-Condition	User is logged in as a university.
Post-Condition	The class is created.

UC_30	Assign a professor email
Summary	Universities can assign a professor to a created class.
Actor	University.
Description	Universities can assign a professor to be in charge of the class that they have created. They may place the same prof for different classes or different ones.
Pre-Condition	A class exists, the user is logged in as a university.
Post-Condition	The class has now a professor in charge and the professor can access the class

UC_31	Assign a Career Office email
Summary	Universities can add the email of a Career Office employee.
Actor	University
Description	Each university can assign one of the Career Office employees email to allow them to be recognized as such by the system and allow them to use that level of authority.
Pre-Condition	University must be logged in as such.

Post-Condition	The email is either registered in the database or is given the necessary level of authority if it already existed.
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UC_32	Edit/Remove career office representer
Summary	Users can edit or remove the Career Office employee that they chose.
Actor	University, Admin
Description	Every university may decide to change the employee who will represent the Career Office or they may even choose to completely remove that position if it is not important to them anymore. The admin as well may remove the user for one reason or another, one of them being in case of system problem.
Pre-Condition	University must have assigned one email for this position.
Post-Condition	The email of the person responsible is changed or completely removed.

UC_33	Create a Professional Practice course class
Summary	User can create professional practice course class
Actor	University
Description	Every university can create one or many classes of Professional Practice.
Pre-Condition	University must have been logged in as such.
Post-Condition	The class must be created.

UC_34	Assign a professor email
Summary	Universities can assign a professor to each created class.
Actor	University
Description	After the university has created the class, it has to assign a professor email to the created class.
Pre-Condition	University must have created the class.
Post-Condition	A professor's email must be assigned to the class.

UC_35	View all classes
Summary	University can view the classes it has created.
Actor	University
Description	After he has created more than one class each university will have the possibility to view the classes that it has created in a list form.
Pre-Condition	Having created at least one class.

Post-Condition	Universities can edit or remove those classes.
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UC_36	Edit / Remove professor email
Summary	Users can change or remove professors.
Actor	University, Admin
Description	The university after having assigned a professor email for a class he may choose to change that professor for another one or he may remove it until he finds a suitable replacement or if the class for one reason or another is closed.
Pre-Condition	Class being created and professor email being assigned for it
Post-Condition	The professor in charge of class changes or is removed.

UC_37	View Student's profile joined in class
Summary	Users may see the profile of the students in a class.
Actor	University, Professor
Description	The university or the professor may at any time view the profile of all the students that are assigned to a class. The university may view the profile of all the students in all the classes that it has created, but the professor may only view the profile of the students in the class that he has been assigned to.
Pre-Condition	Students being added to the class by the professor.
Post-Condition	There are no post conditions.

UC_38	View & download student's PP documentation
Summary	User can see and download the students professional practice documents
Actor	Business, Professor, Student
Description	The user can view the PP documents that are filled by the students and when it is time to sign them, they can download them and put their signature in.
Pre-Condition	For businesses to have employed the student, for professors to have the student in their class, and for all at the same time to be logged in.
Post-Condition	The user will have a copy of the document in their device.

UC_39	Check Professional Practice course class
Summary	The student can see its class.
Actor	Student

Description	The students that have been added to a class by their respective professor may at any time while logged in view the class that they belong to.
Pre-Condition	Being logged in and belonging to a class.
Post-Condition	The students can view their documents and modify them.
UC_40	Mark one of his contracts for the PP course
Summary	The student can select the job/internship in which he is hired.
Actor	Student
Description	The student after reaching an agreement with a business and is employed or started an internship he can add that job into his class in order to be recognized that he has actually gained that place.
Pre-Condition	Student belongs in a class and is logged in.
Post-Condition	The job/internship which he/she has began is added to his class profile.

UC_41	Check Documentations
Summary	The student can view his documents.
Actor	Student
Description	The student after belonging to a class and having found a job may view at any time while being logged in the professional practice documents that he has to fill.
Pre-Condition	Belonging in a class, having found a job/internship, being logged in.
Post-Condition	The student may know what he has to work on.

UC_42	Fill Documents
Summary	The student may work on his documents
Actor	Student
Description	Every time the student finishes a day of work or wants to check on what he has done before for mistakes, he may open his documents and edit them as many times as he likes. He may also fix mistakes that have been pointed out by the professor.
Pre-Condition	Belonging in a class, having found a job/internship, being logged in.
Post-Condition	The information in the documents will have changed after being saved.

UC_43	Check its classes assigned by University
Summary	The professors may see the classes that they will work on.

Actor	Professors
Description	Every professor that has been assigned by their university to be in charge of a class may view and access that class at any time while being logged in.
Pre-Condition	Being placed in charge of a class by the university, being logged in.
Post-Condition	The professor may navigate and work on the class.

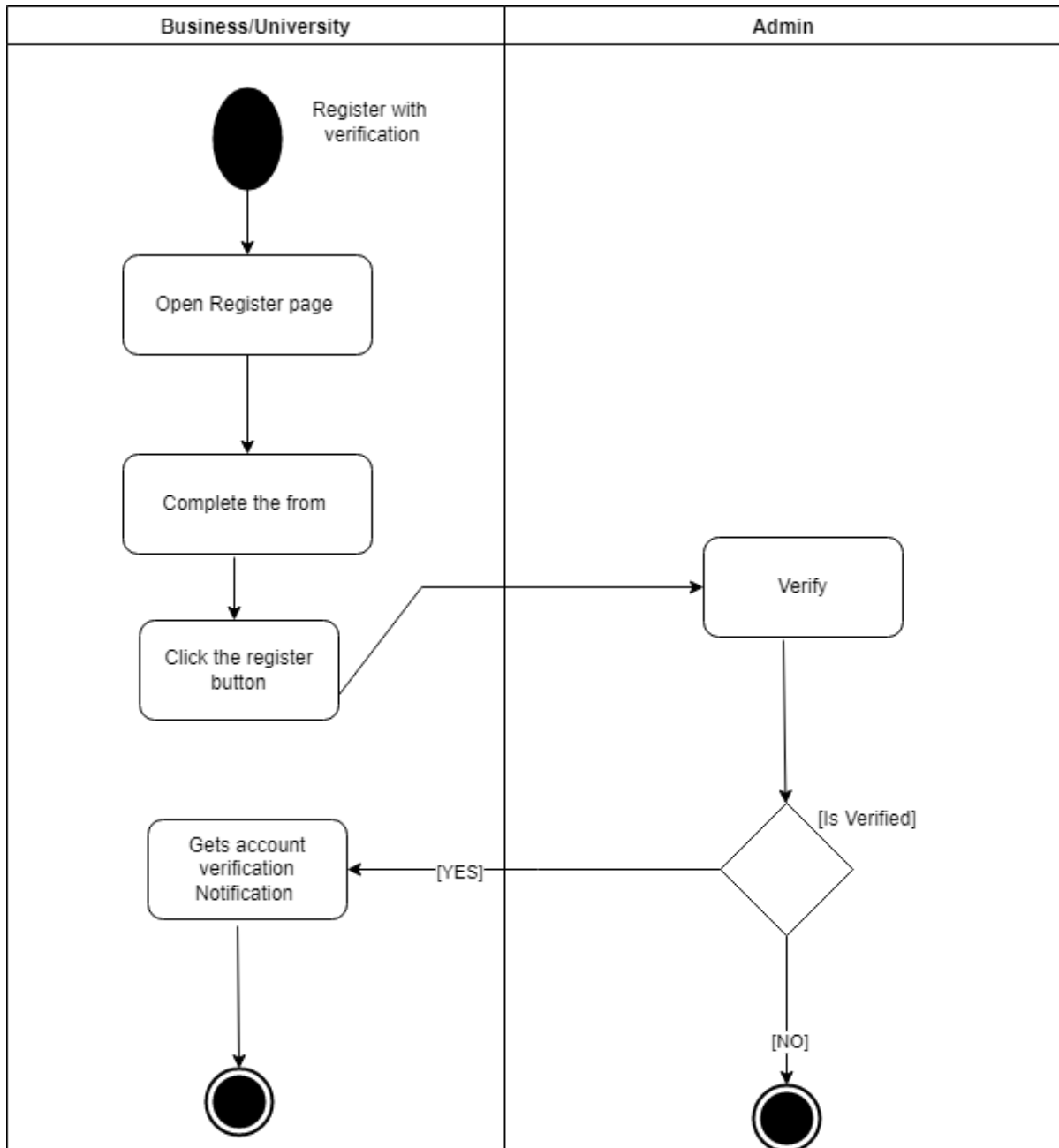
UC_44	Add students
Summary	The professor may add students.
Actor	Professor
Description	In the class the professor will be able to add the emails of the students that he has been placed in charge of by the university. The students with the email added will be given the right to access that class. The students may also be removed by the professor.
Pre-Condition	Being in charge of a class, being logged in as a professor.
Post-Condition	The class will change and get populated by students. Students will be able to access the class.
UC_45	View all contracts & applications
Summary	The students may view the jobs he has applied for or has been nominated.
Actor	Student
Description	Here the user may view only the jobs that he has applied for and has received no answer yet, is pending, is rejected or has been accepted. The jobs for which he has been nominated by the business will appear here as well.
Pre-Condition	Being logged in as a general user or Student.
Post-Condition	The page will change after accepting or declining jobs, adding or removing jobs.

UC_46	View & Download student's PP contract
Summary	The professor may view and download the student's job.
Actor	Professor
Description	While viewing the students in his class the professor may also view the job position that he has made and download it to have a copy in his device.
Pre-Condition	Belonging to a class, the student has found and added a job to his class info.
Post-Condition	There are no post conditions.

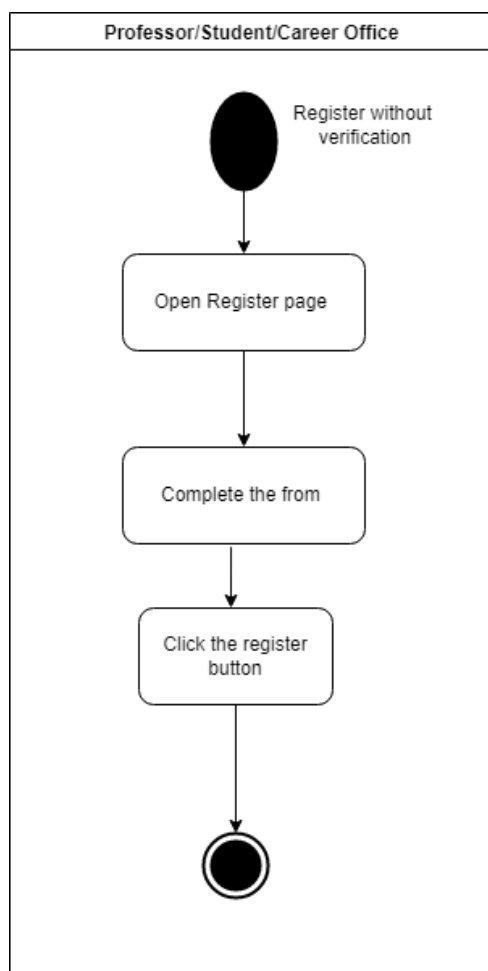
## 4.2 Behavioral Diagrams

### 4.2.1 Activity Diagrams

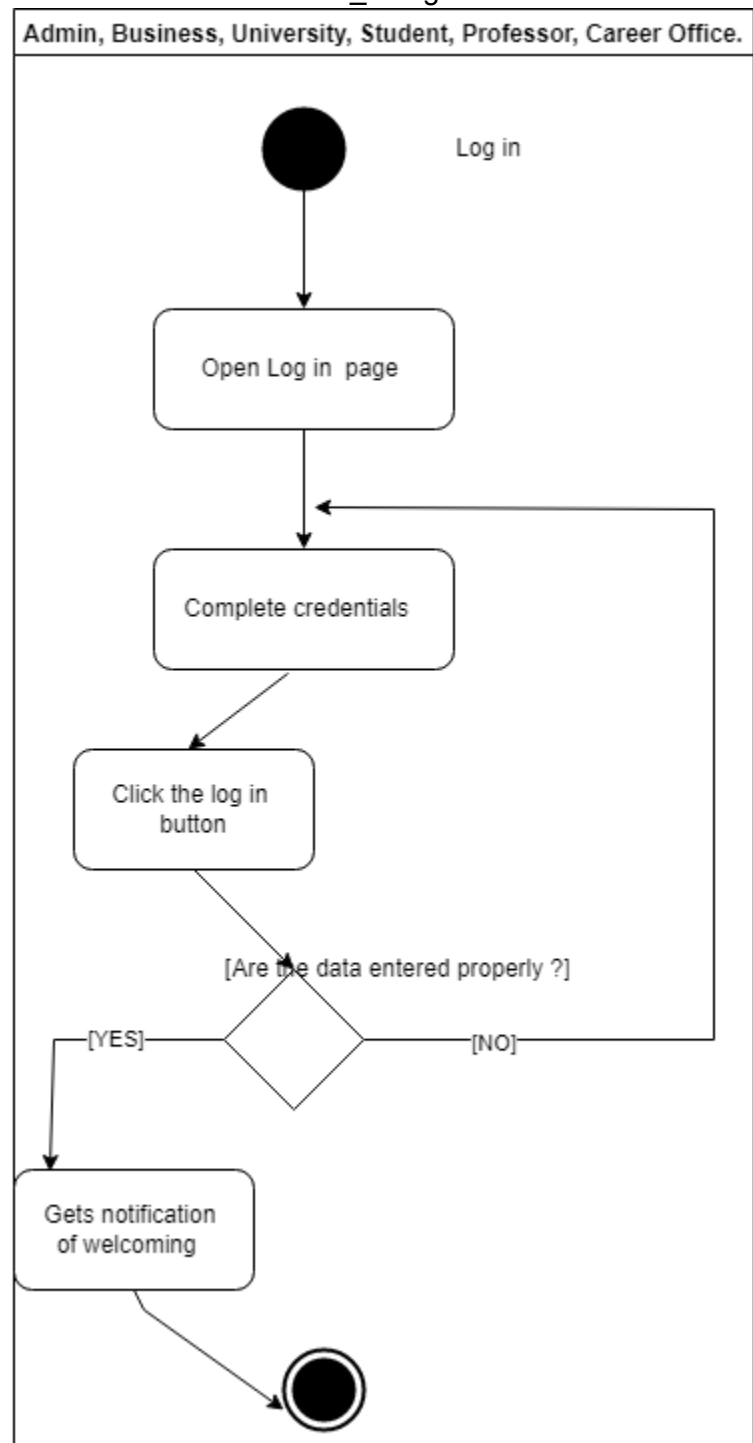
UC\_1&UC\_3 Register With Verification



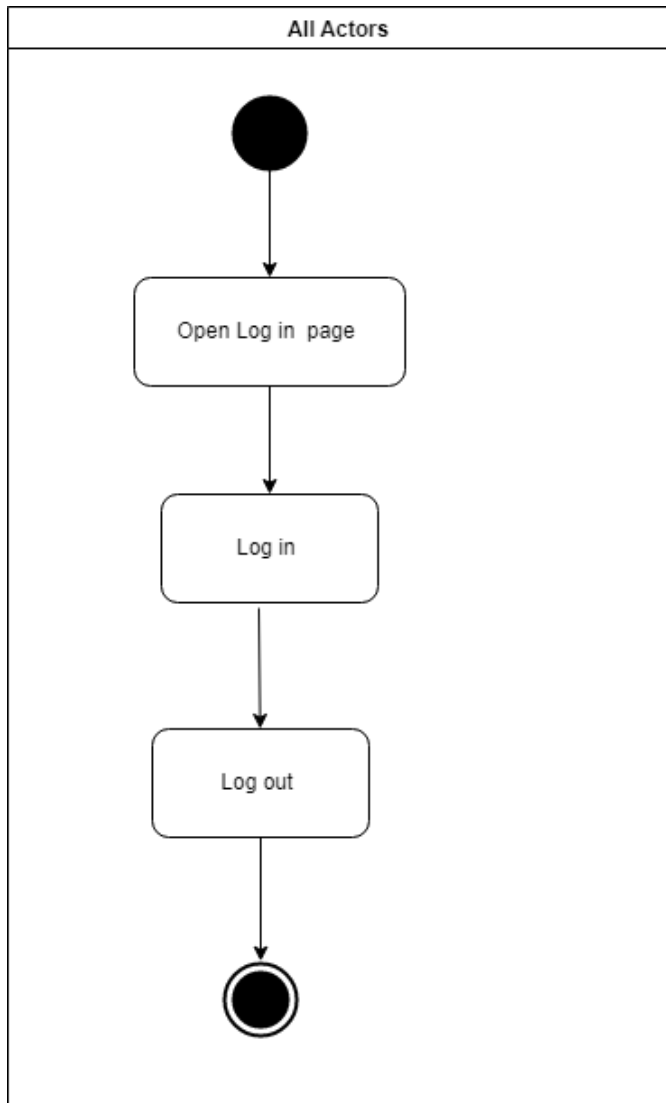
## UC\_2 Register Without Verification



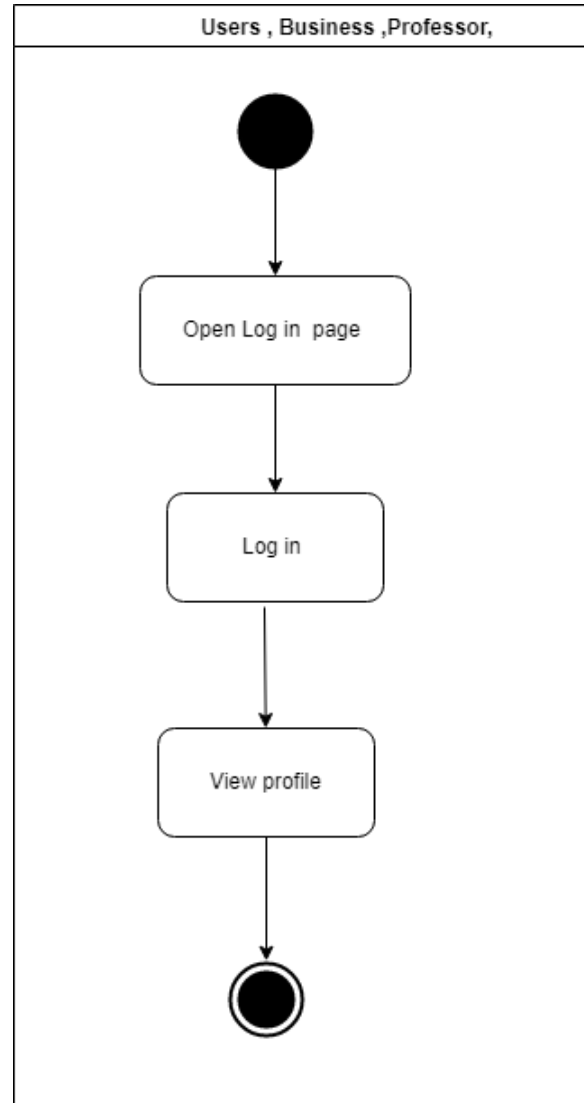
## UC\_4 Login



UC\_11 Log Out For All Actors

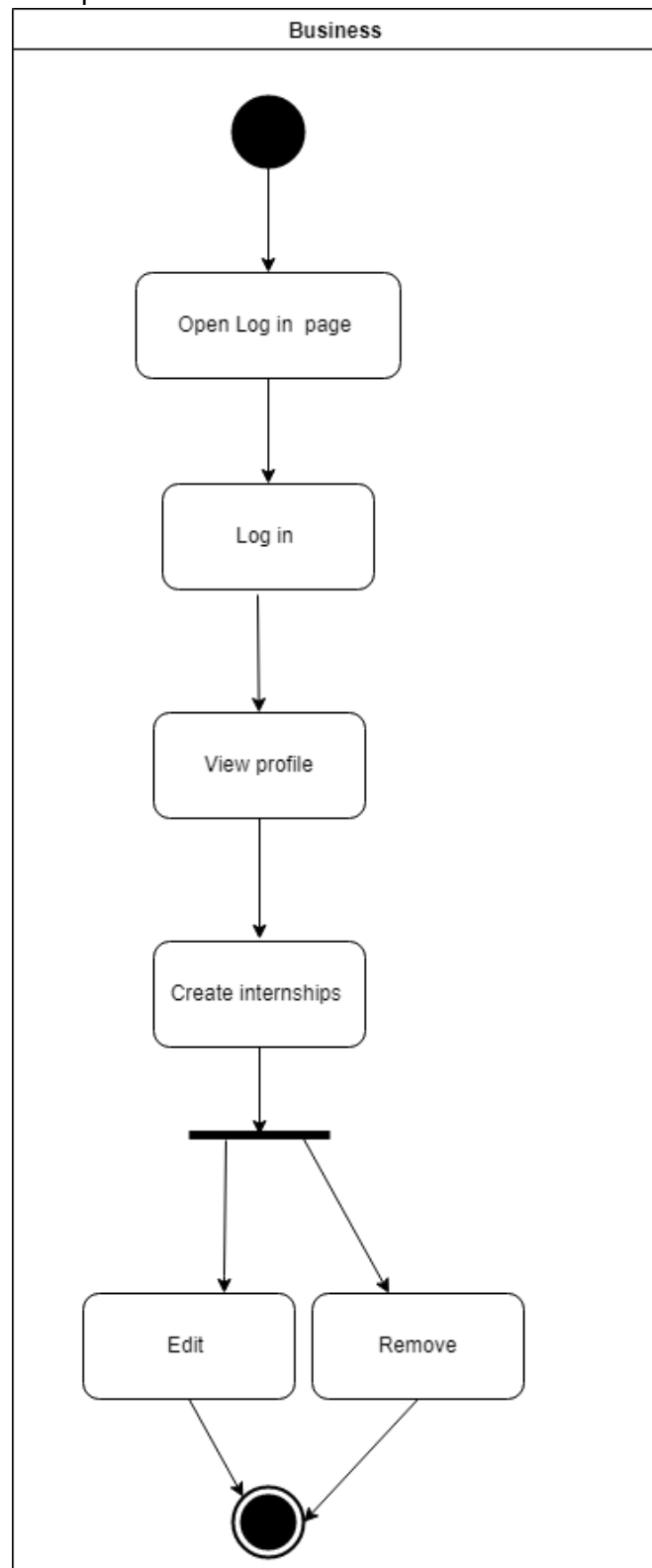


UC\_12 View Profile

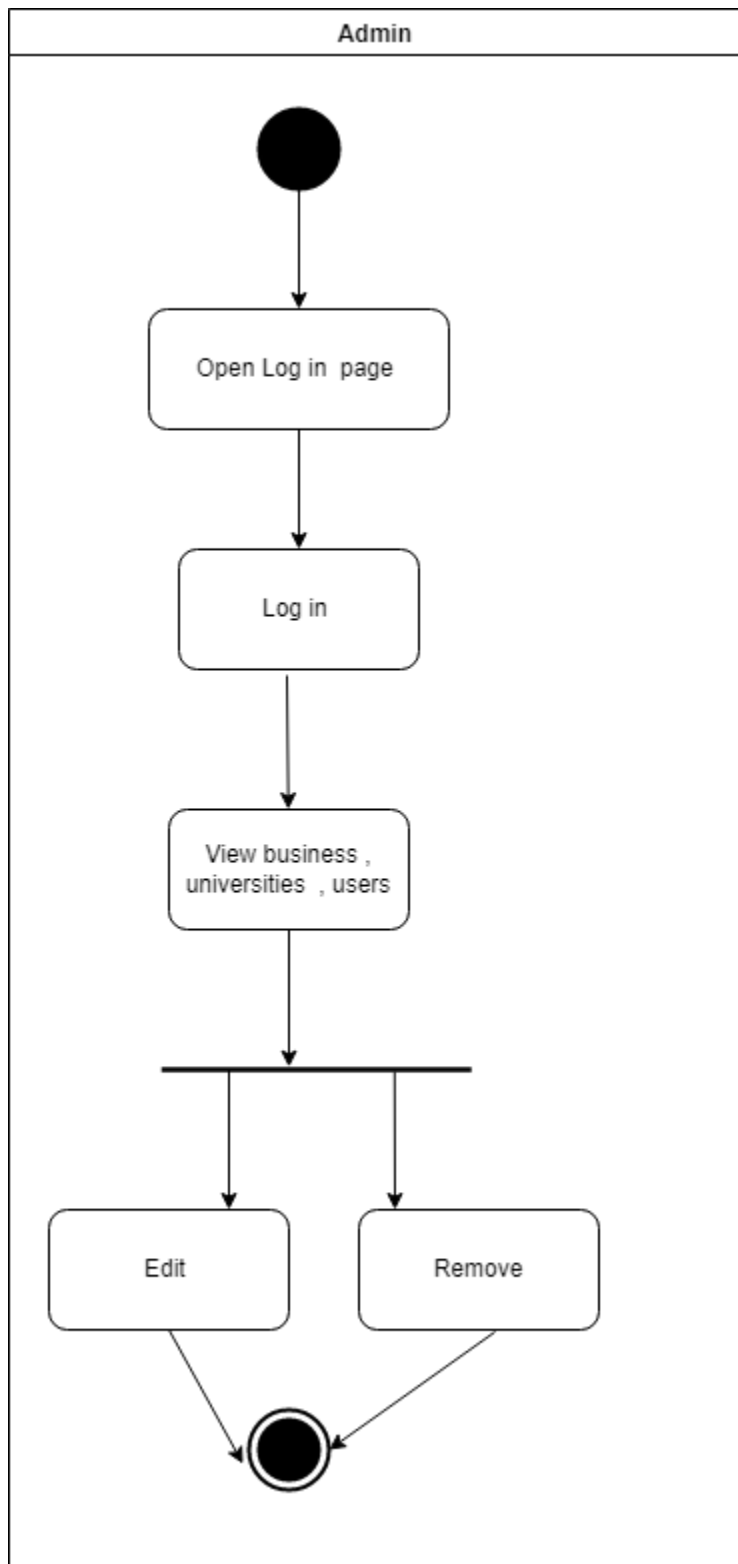




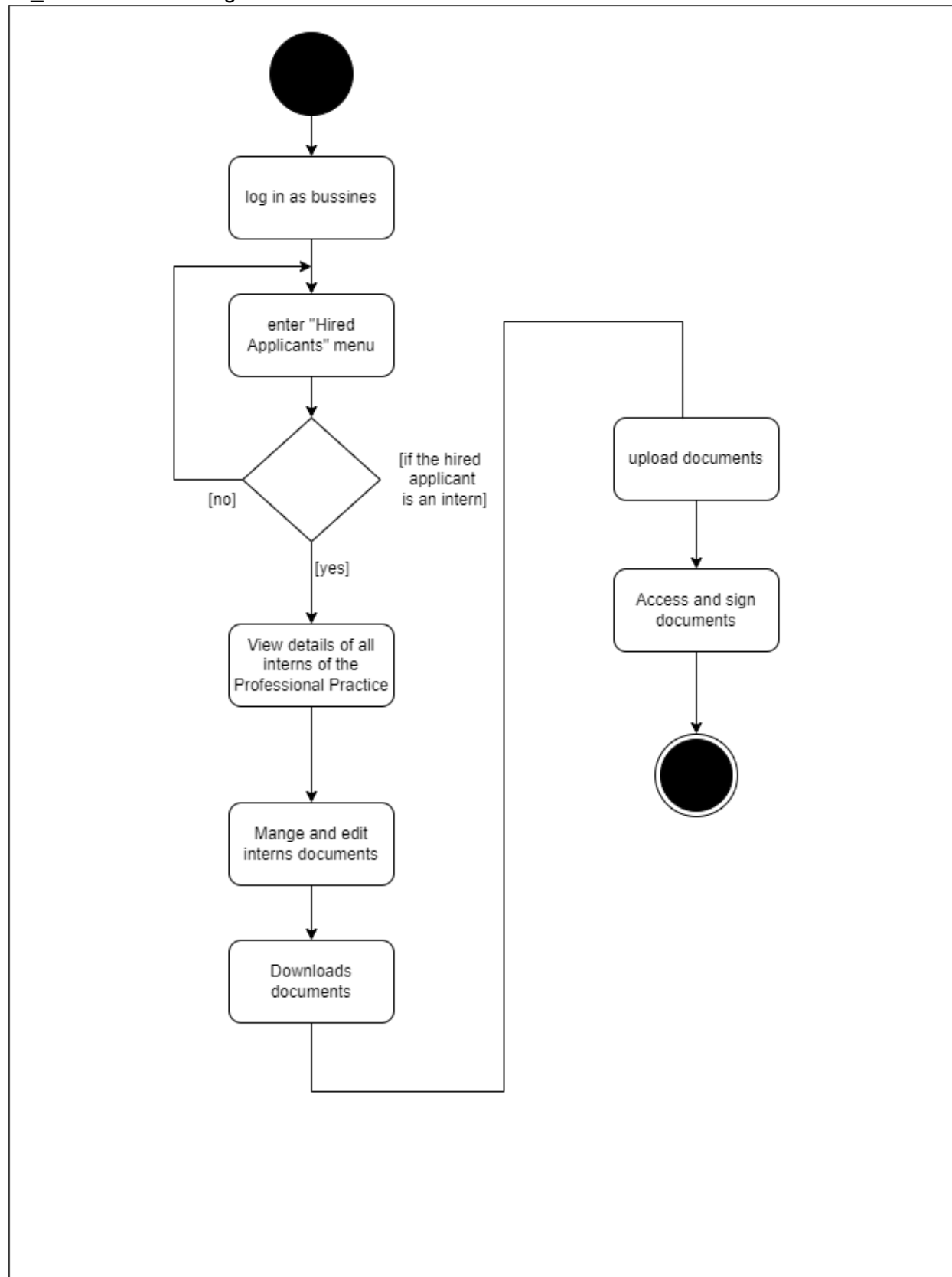
UC\_13\_14 Create Job/Internship Announcement



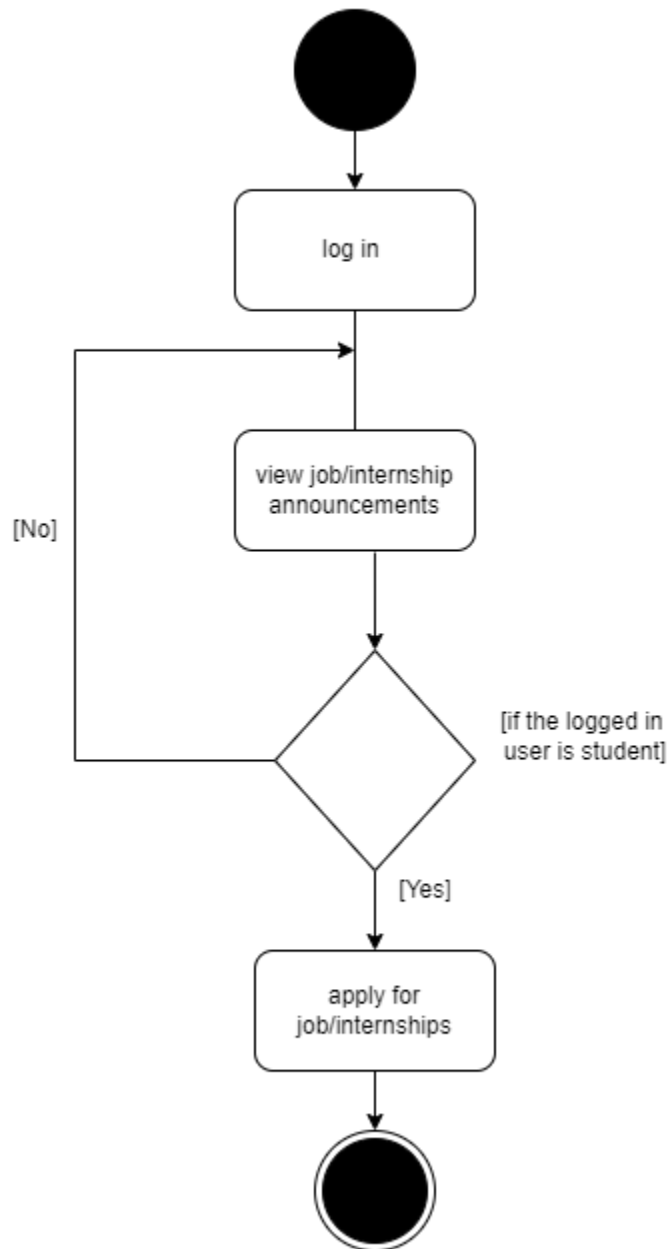
UC\_5\_6\_7\_8\_9\_10



UC\_23 Access and sign documents



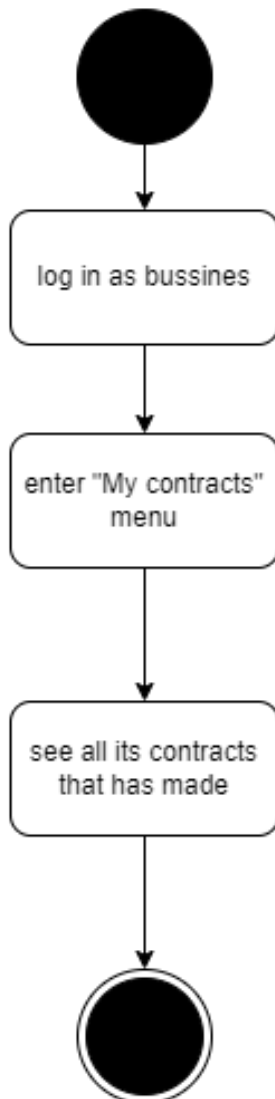
UC\_28 Apply for job, internship



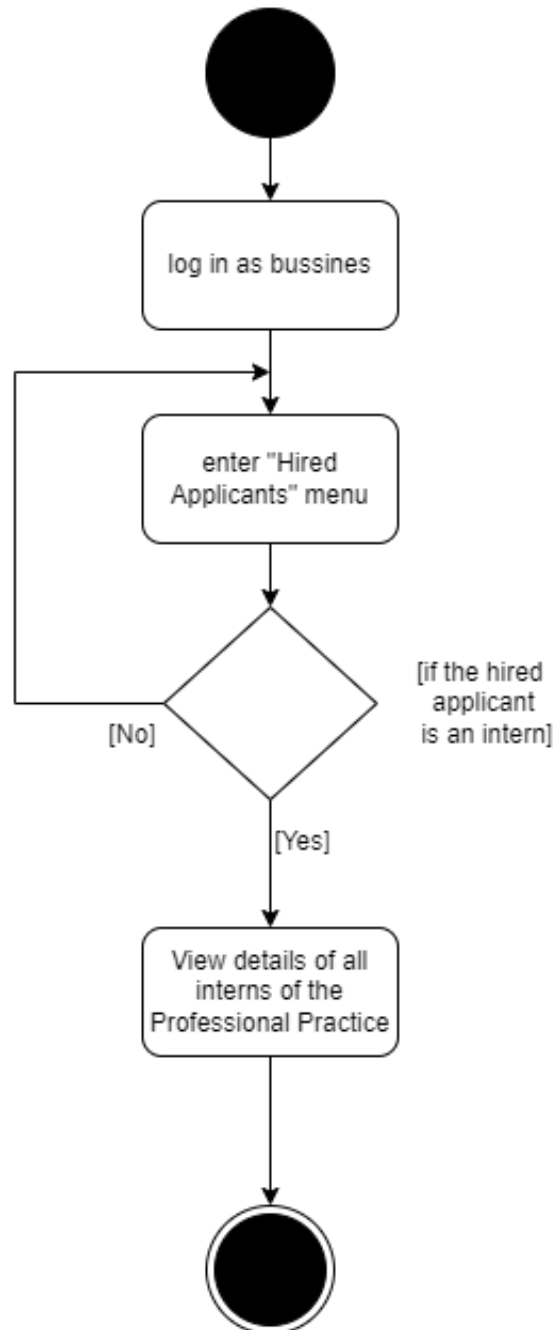
i.

ii.

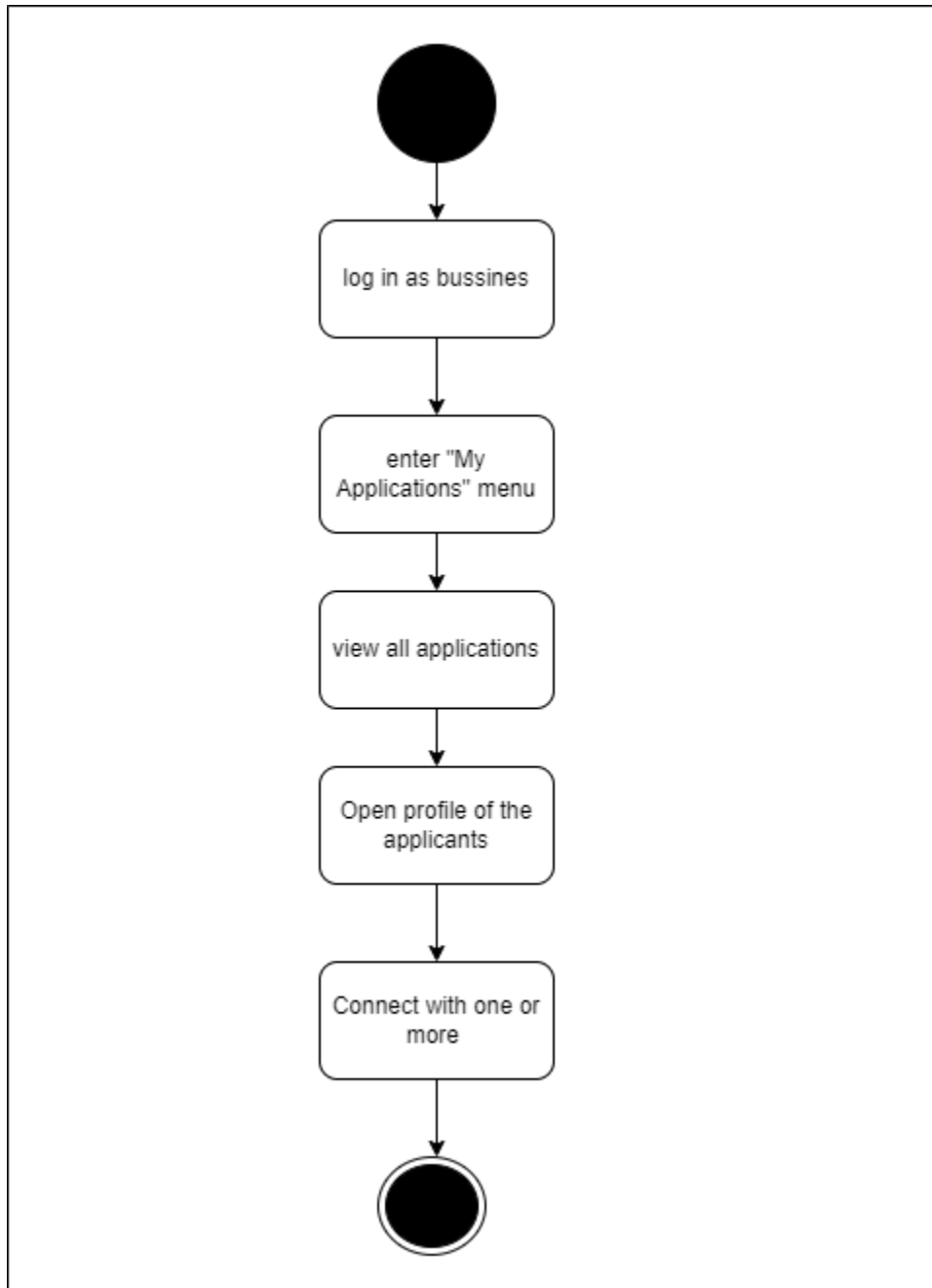
UC\_24 Check all his contracts



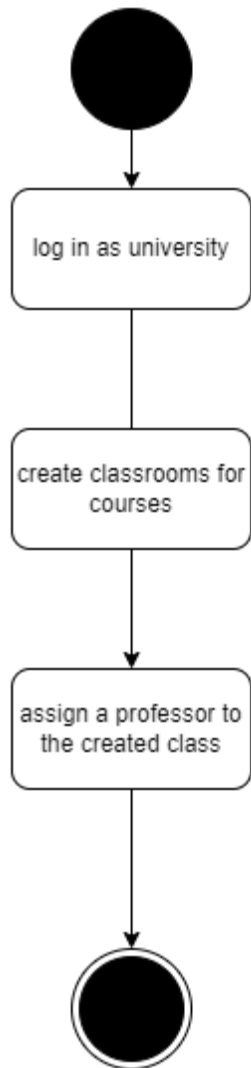
UC\_19 Check PP interns



UC\_18 Connect with one or more business



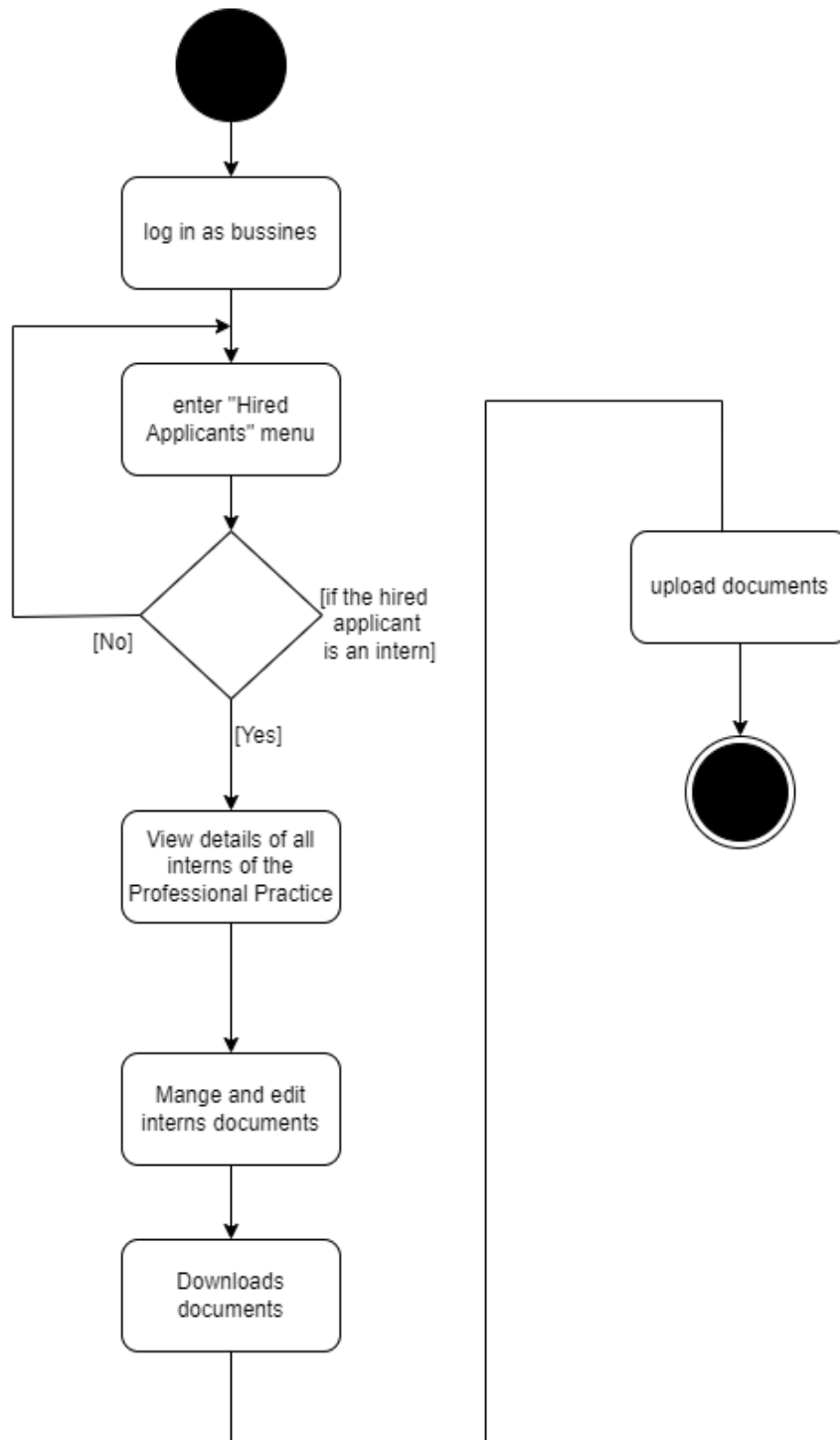
UC\_33UC\_34 Create classroom, assign professor



UC\_ Download jobs, internships

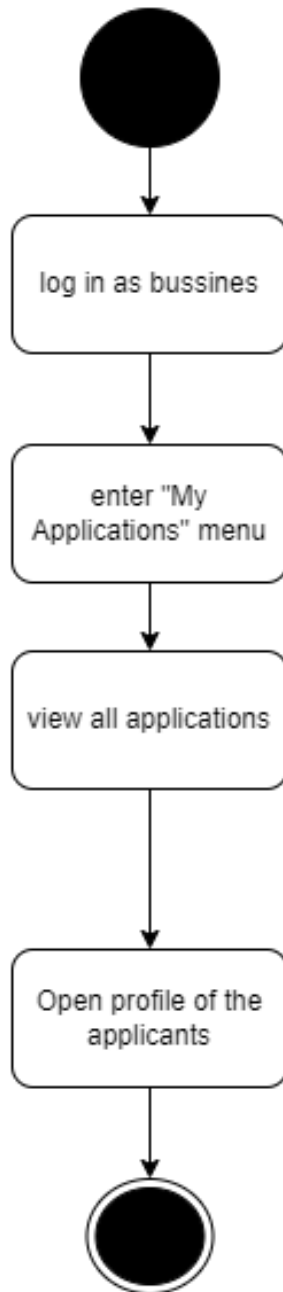


UC\_20\_21\_22 Manage, download, upload documents

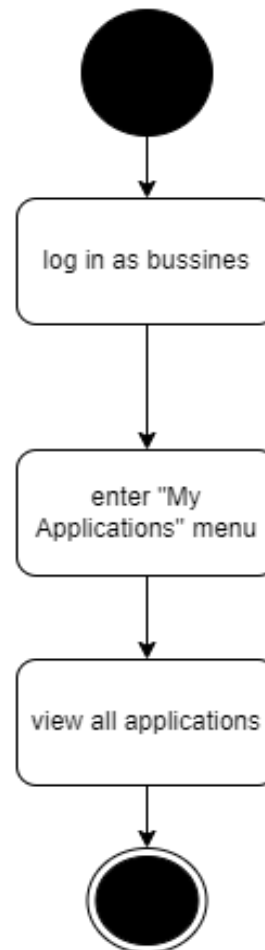




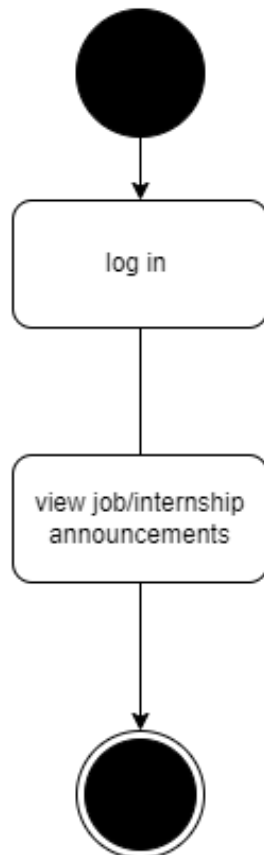
UC\_17 See profile of applicants



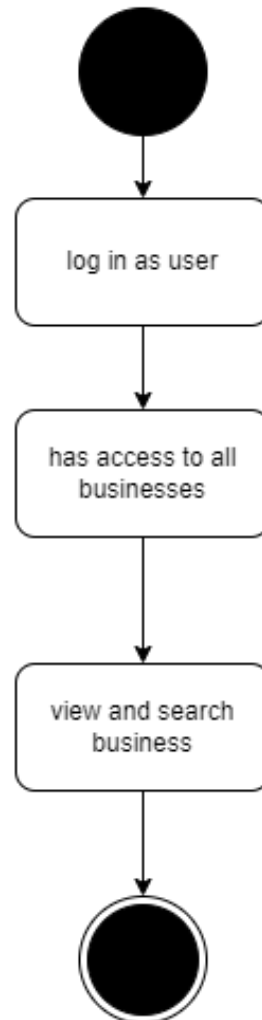
UC\_16 View Applications



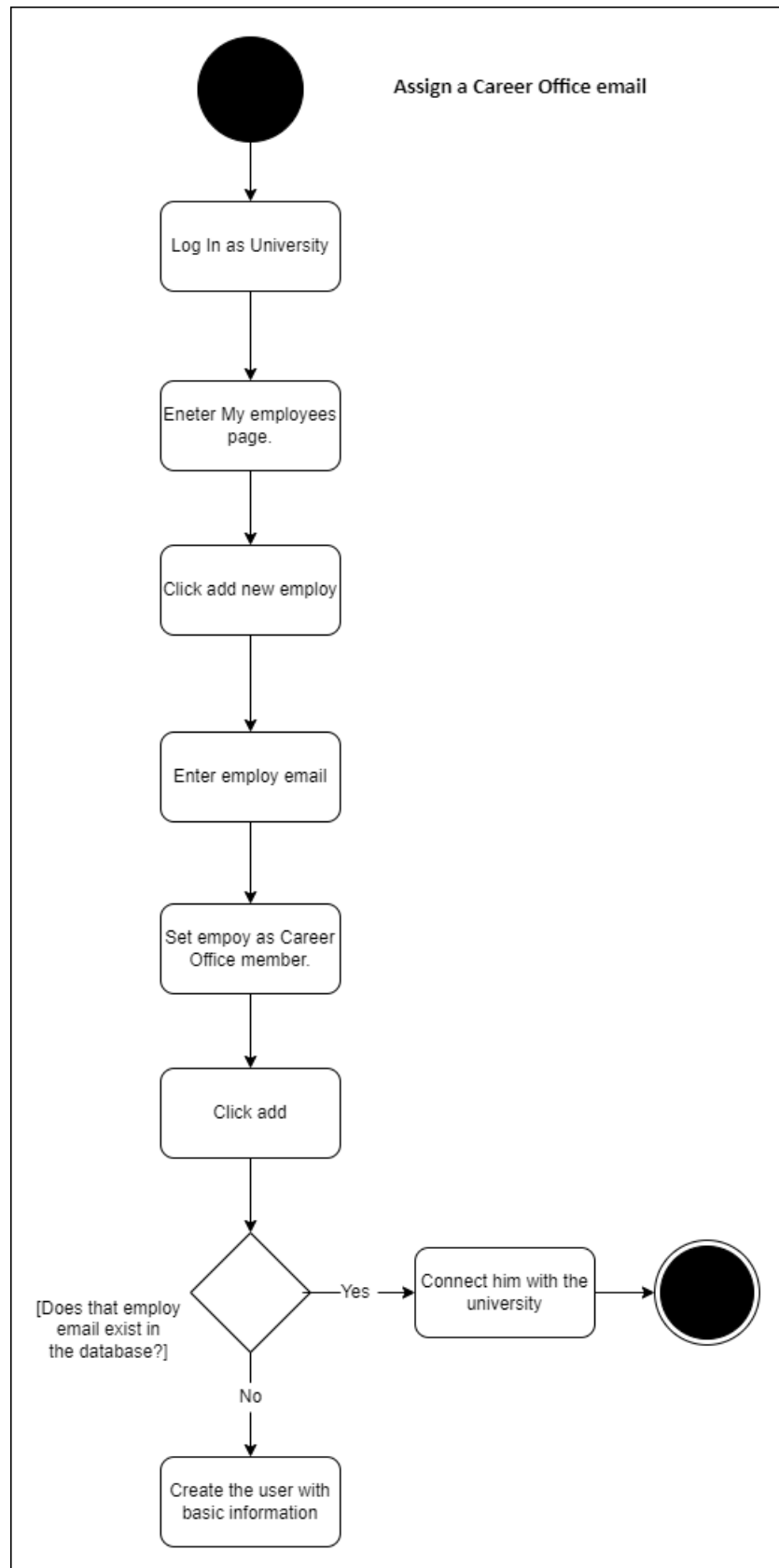
UC\_25 View job, internships announcements



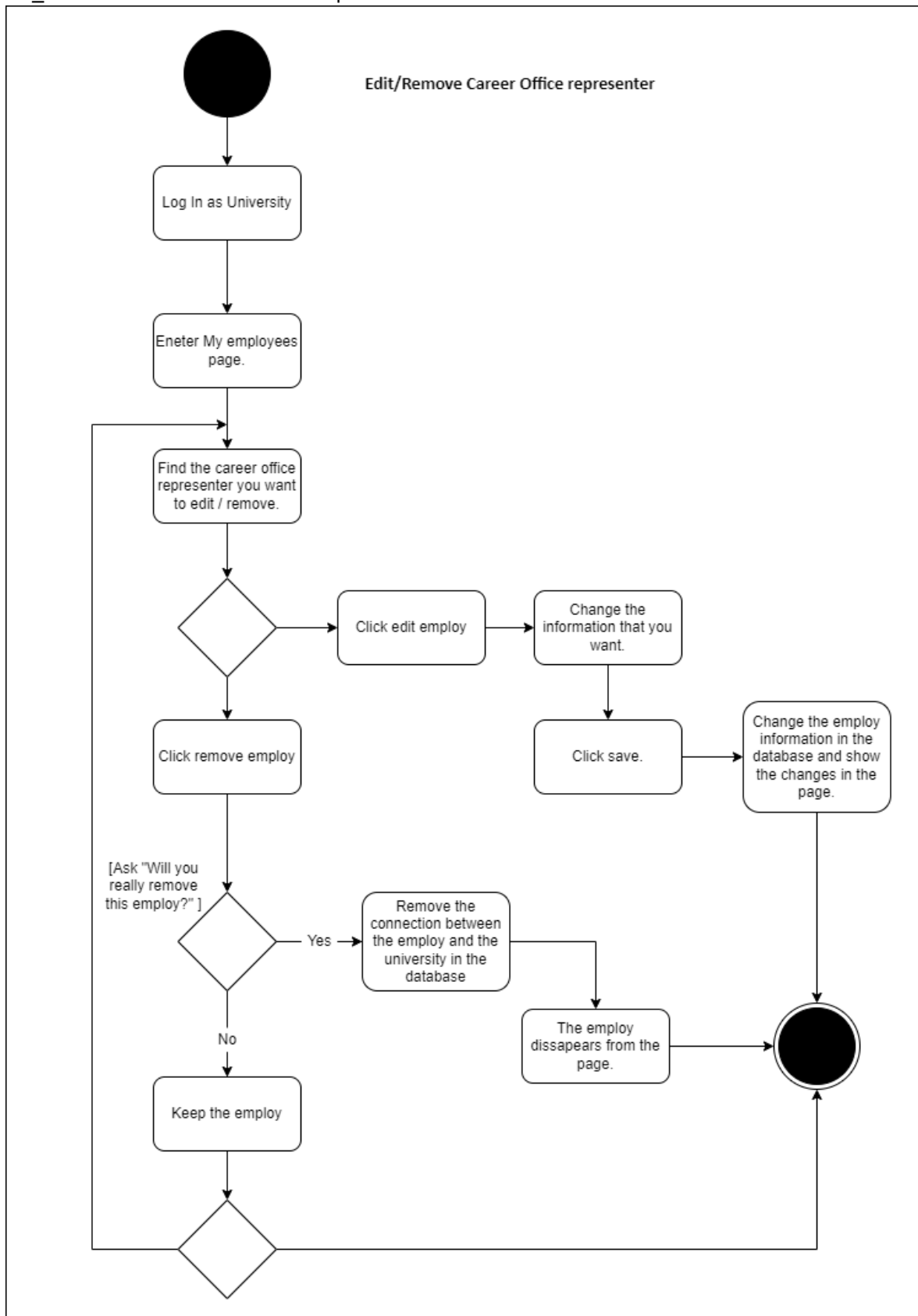
UC\_27 View, search business



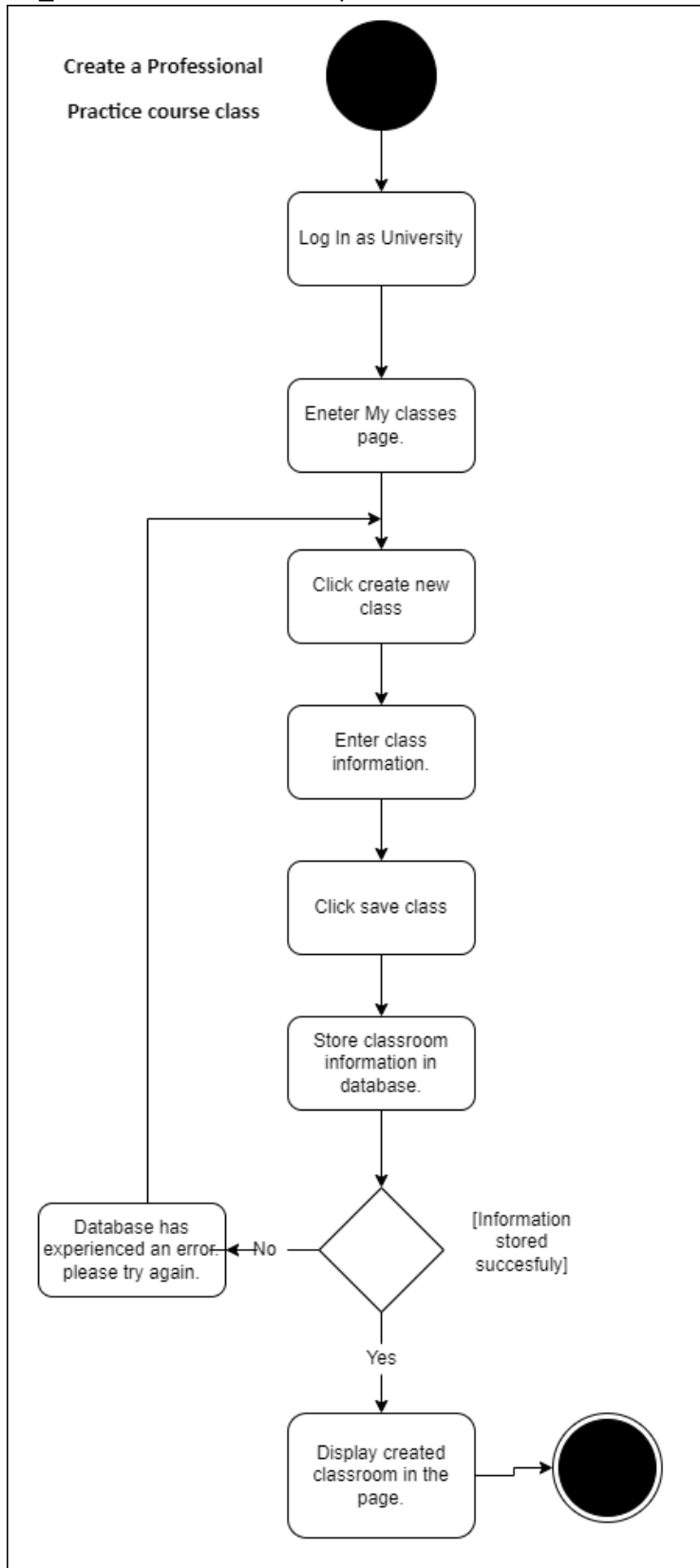
UC\_31 Assign a Career Office email



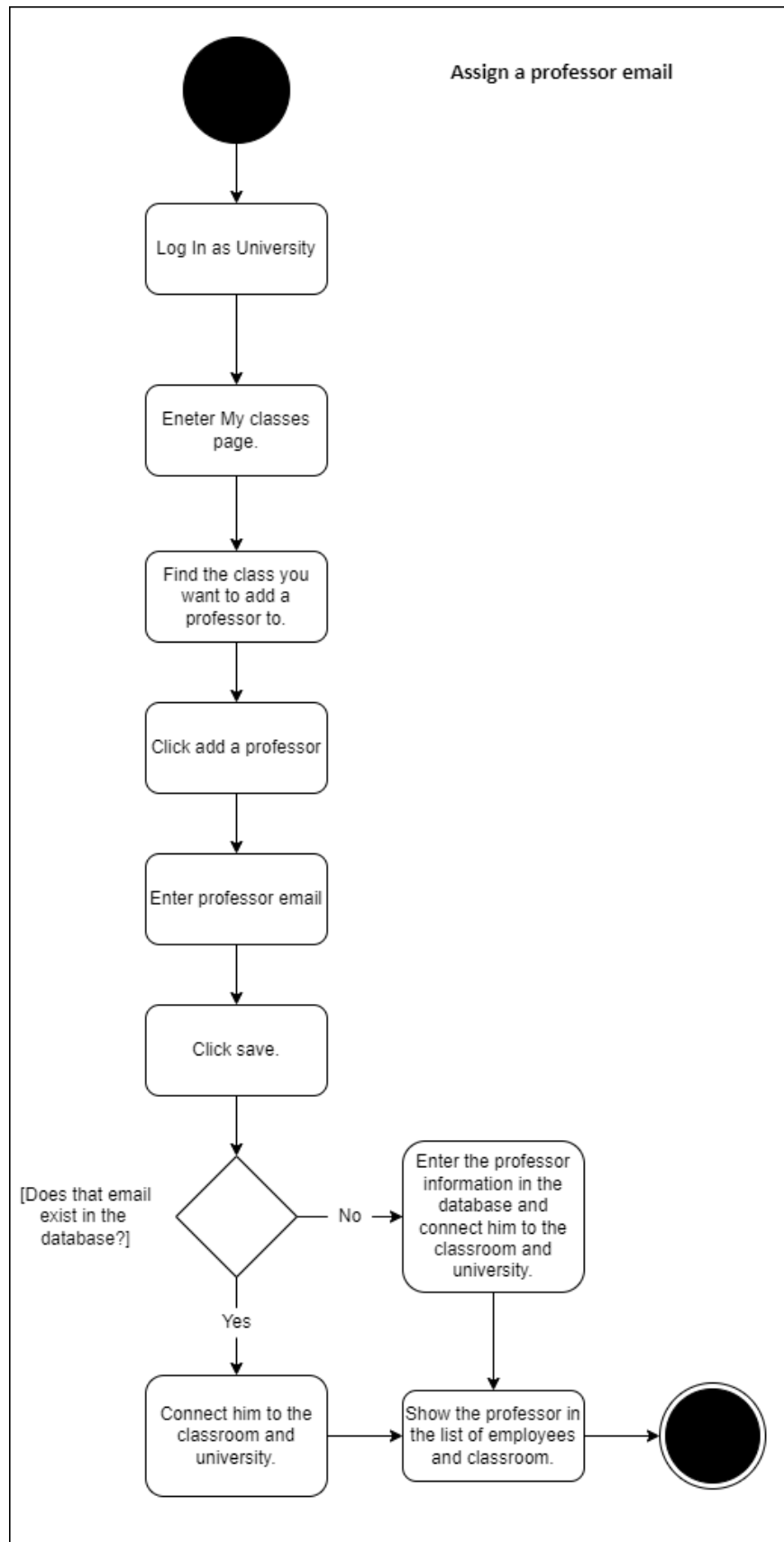
UC\_32 Edit Remove career office representer



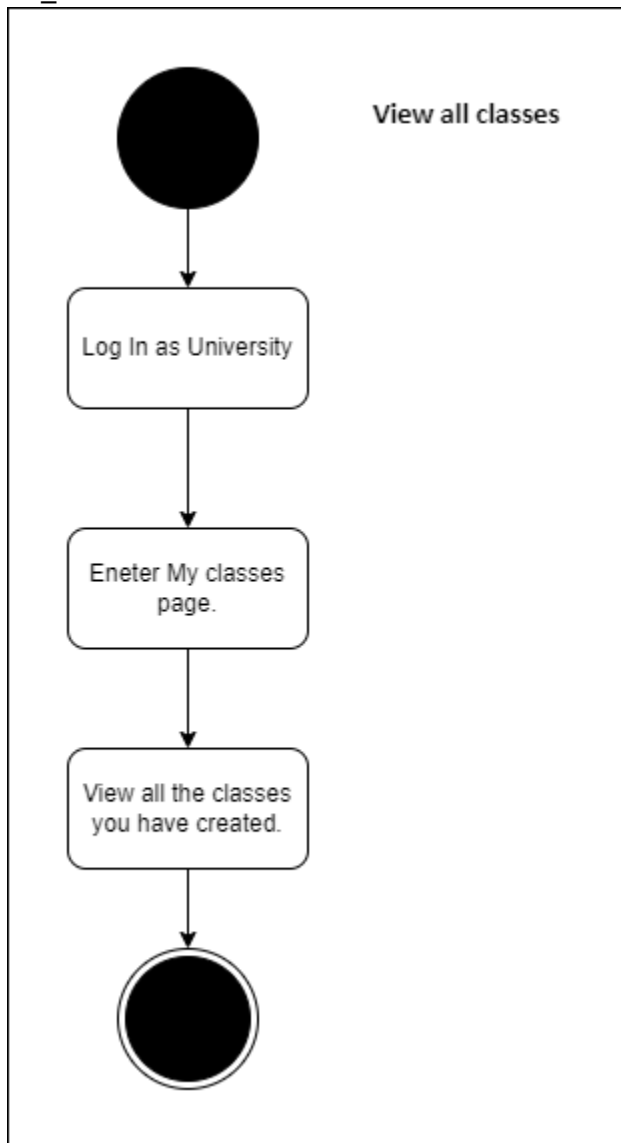
**UC\_33 Create a Professional practice course**



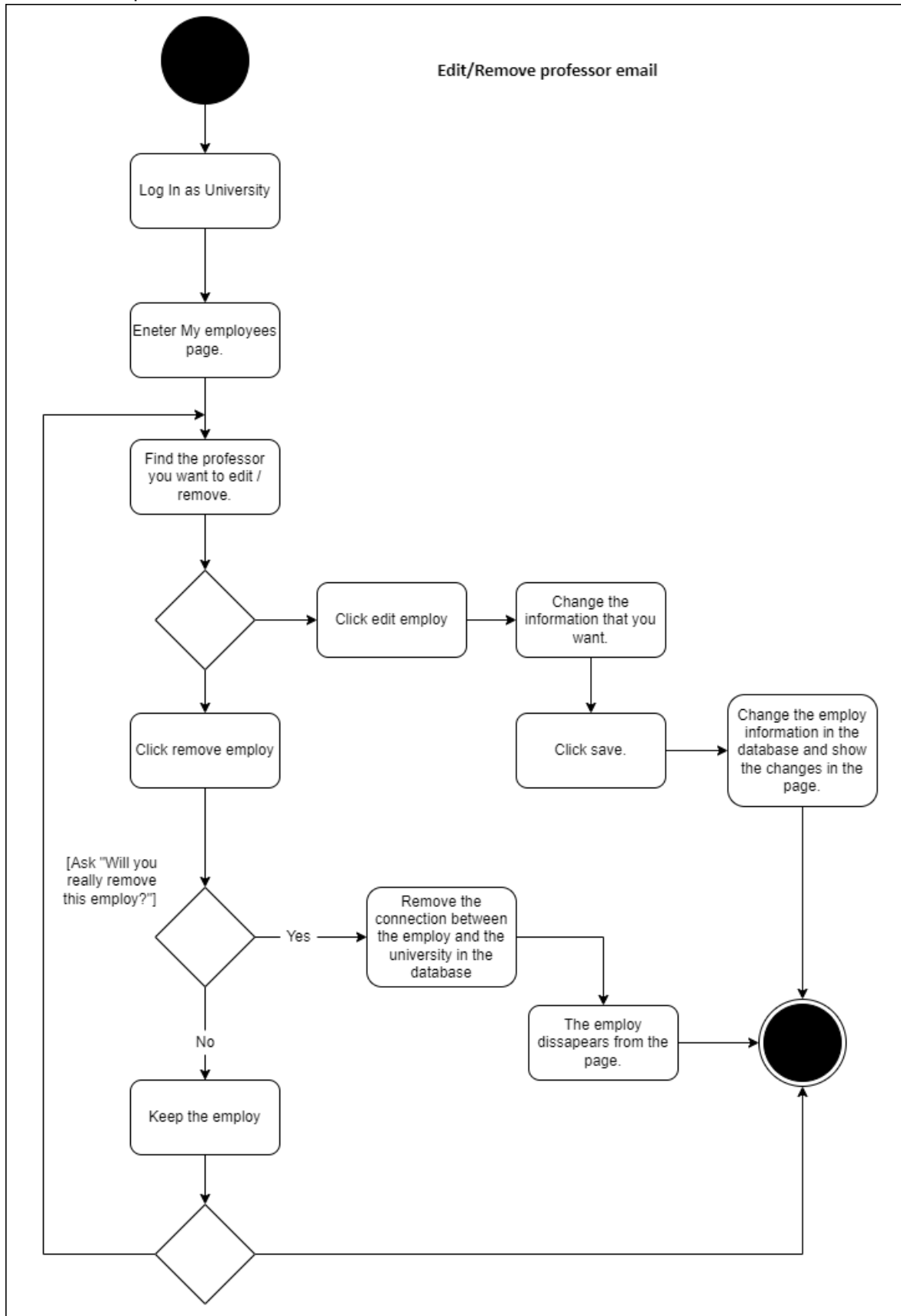
UC\_34 Assign a professor email



UC\_35 View all classes

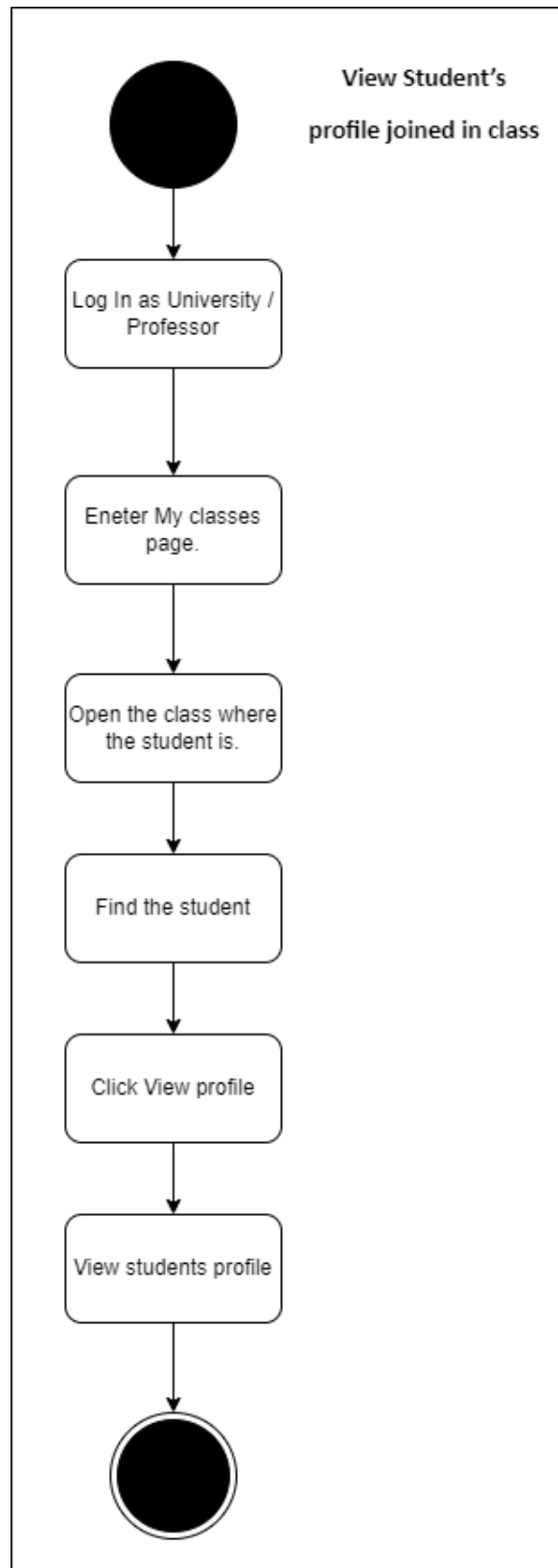


UC\_36 Edit Remove professor email

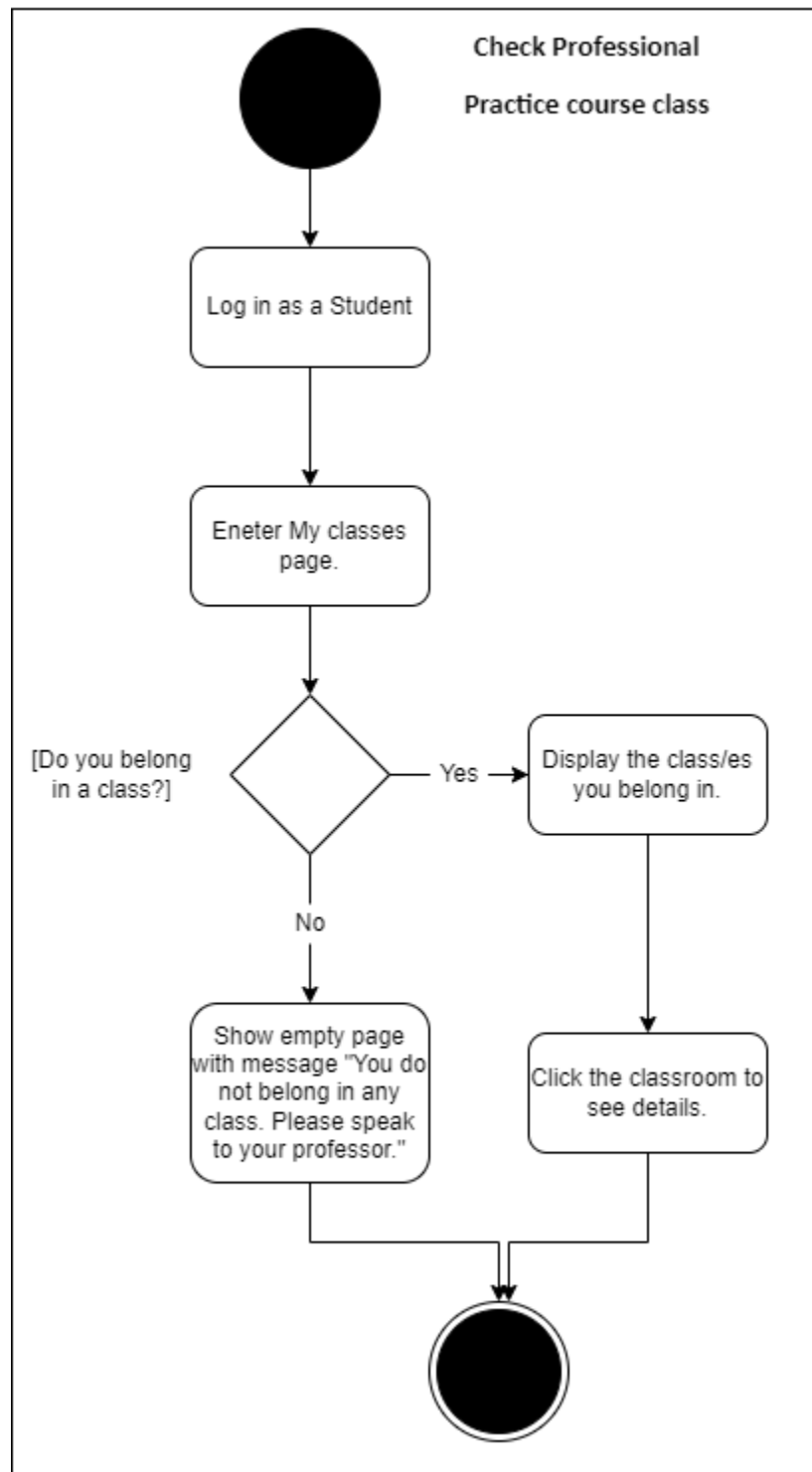




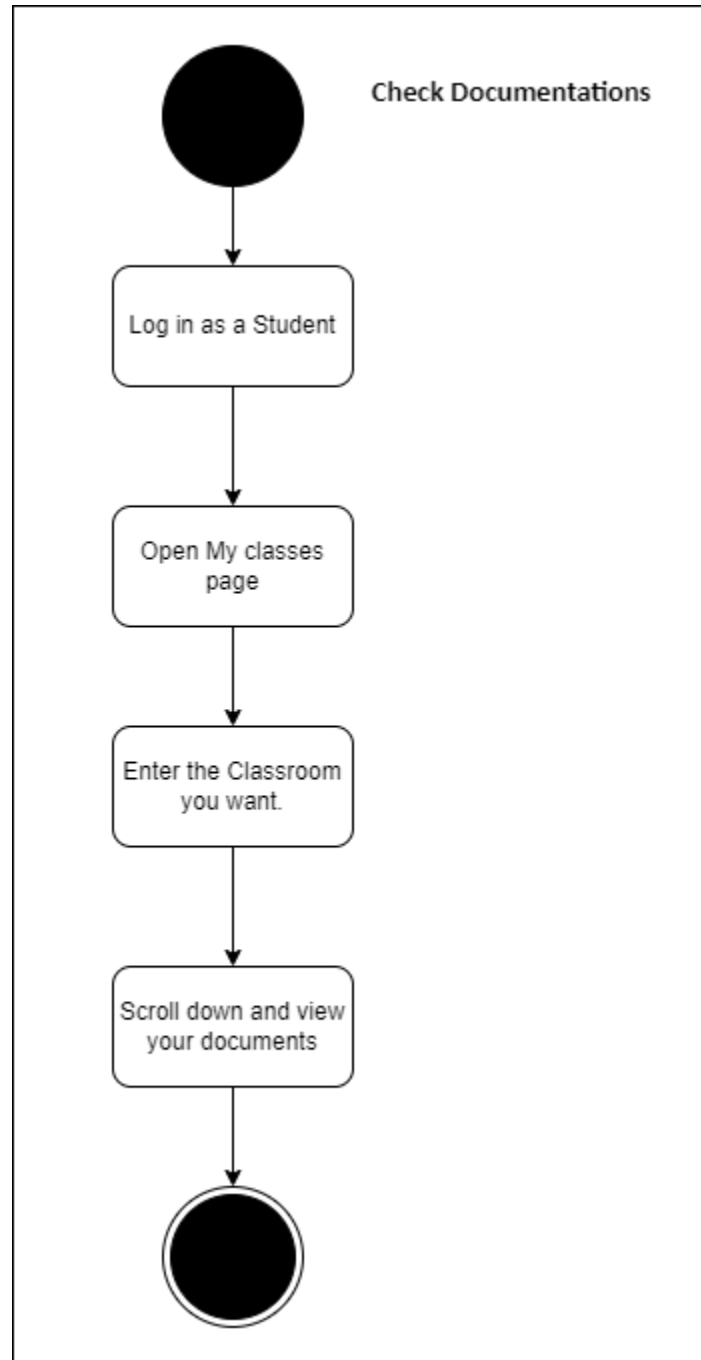
UC\_37 View Student's profile joined in class



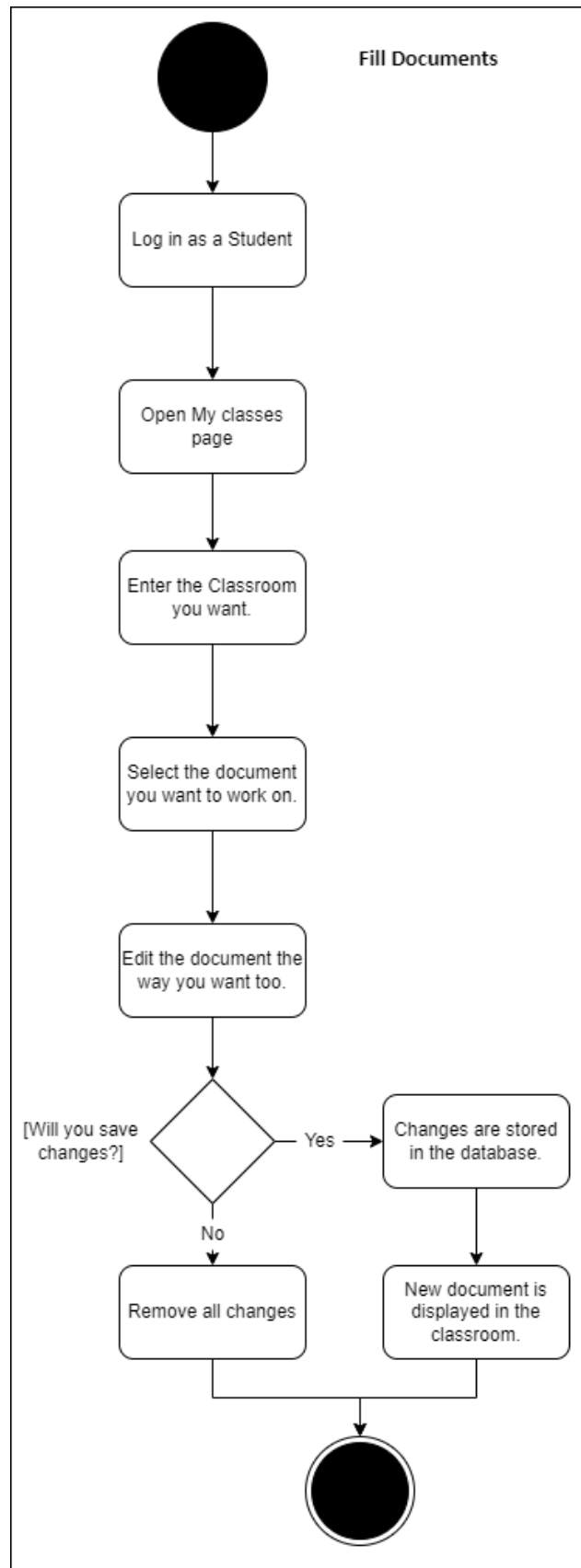
UC\_39 Check Professional Practice course class



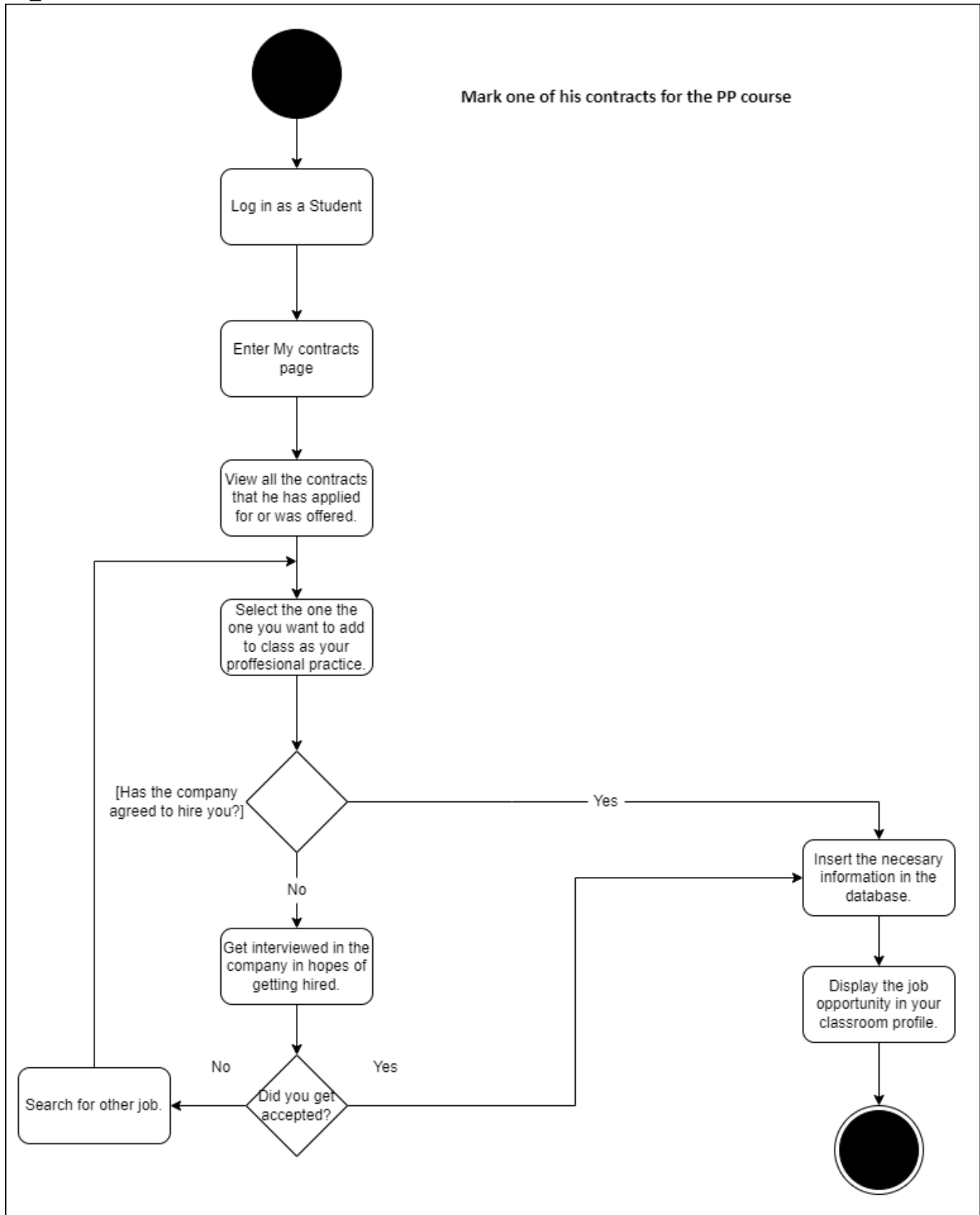
UC\_40 Check Documentations



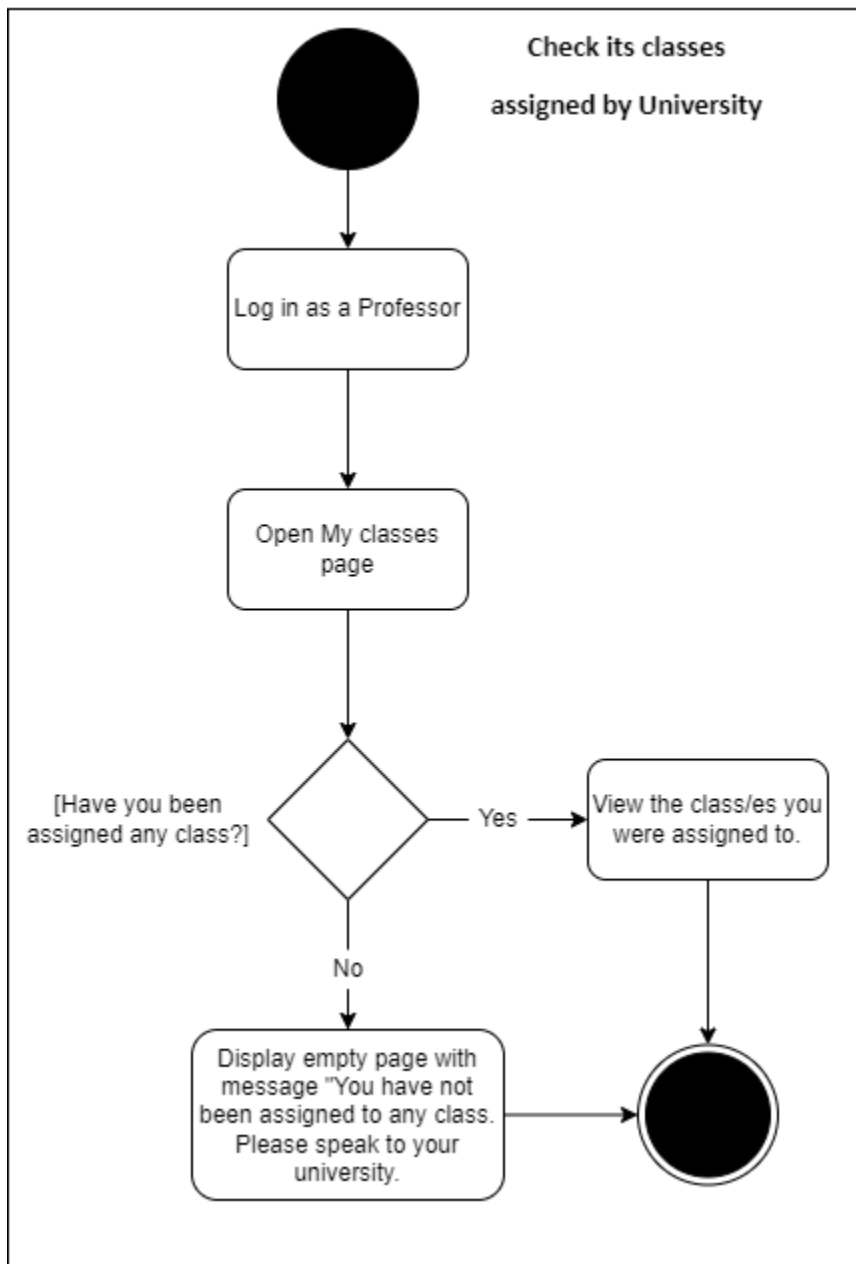
UC\_41 Fill Documents



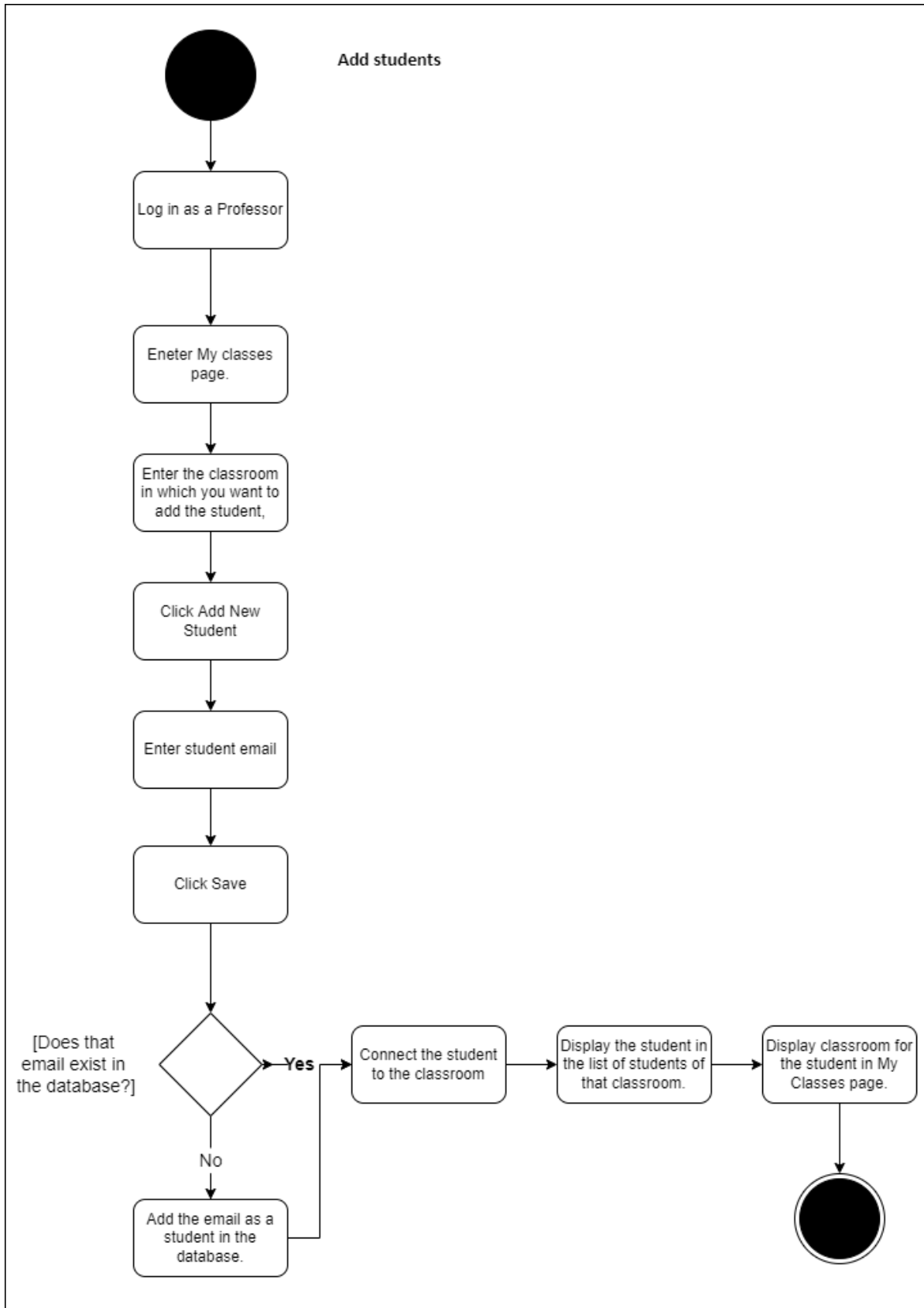
UC\_42 Mark one of his contracts for the PP course



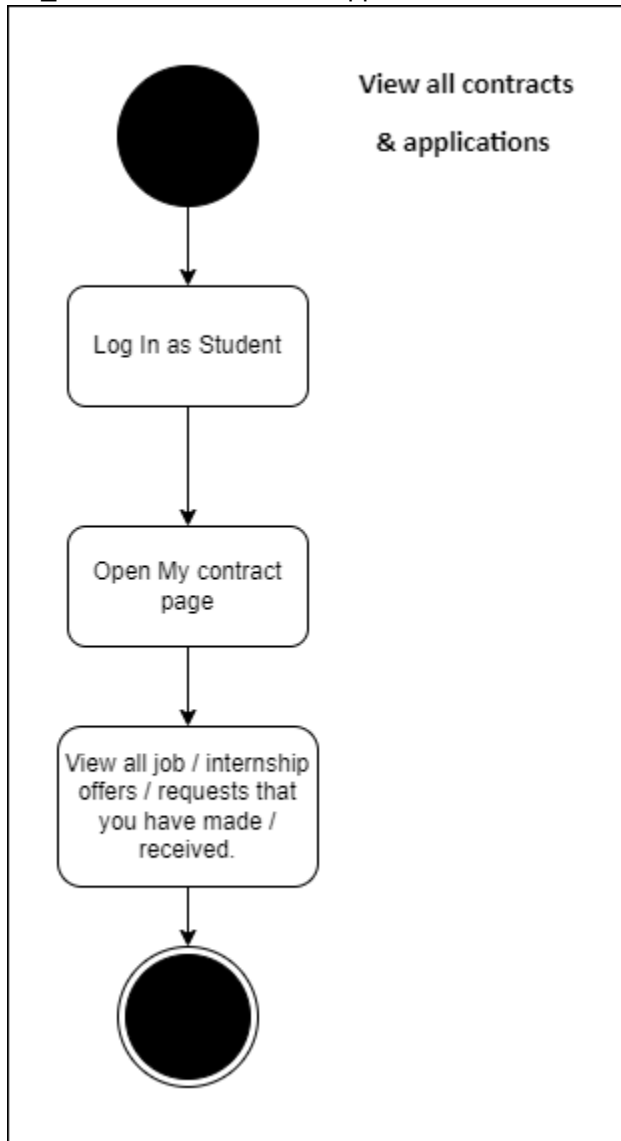
UC\_43 Check its classes assigned by University



UC\_44 Add students

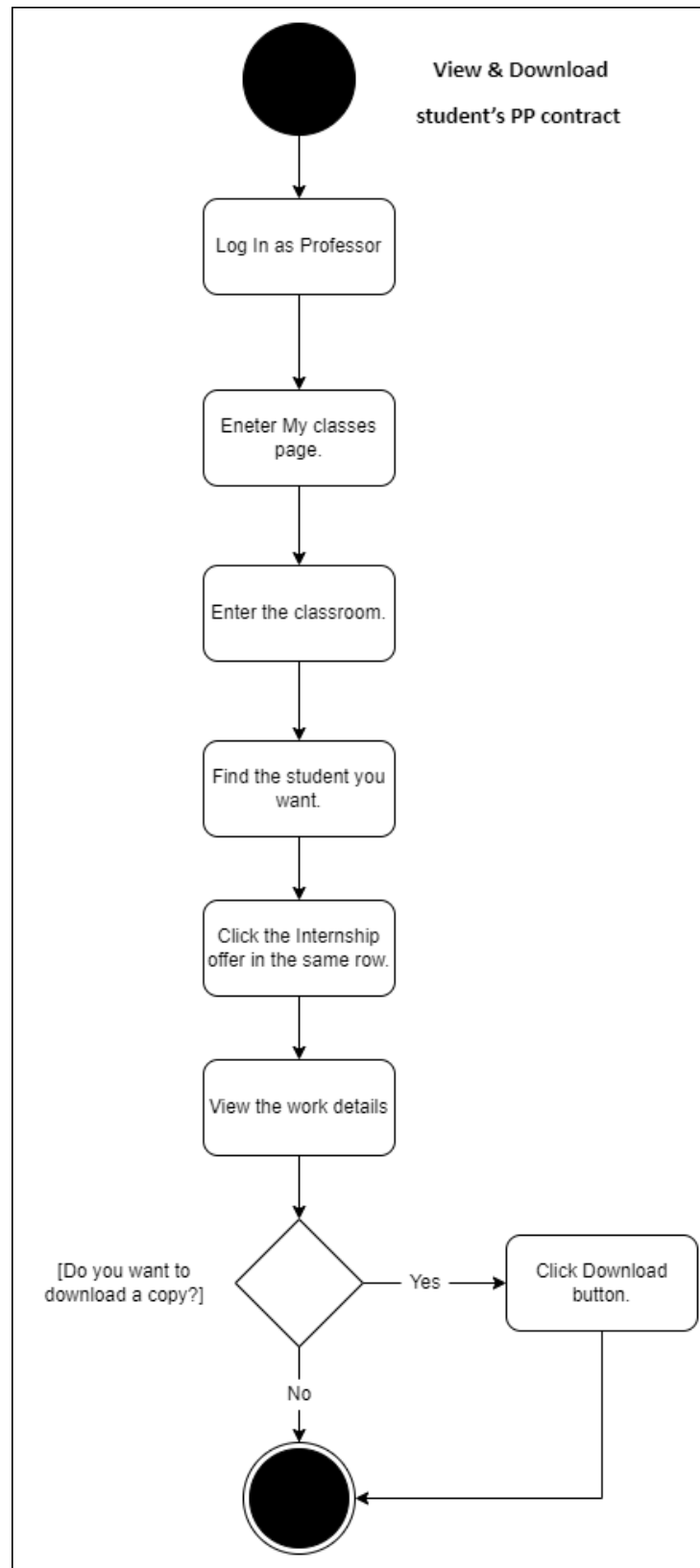


UC\_45 View all contracts & applications



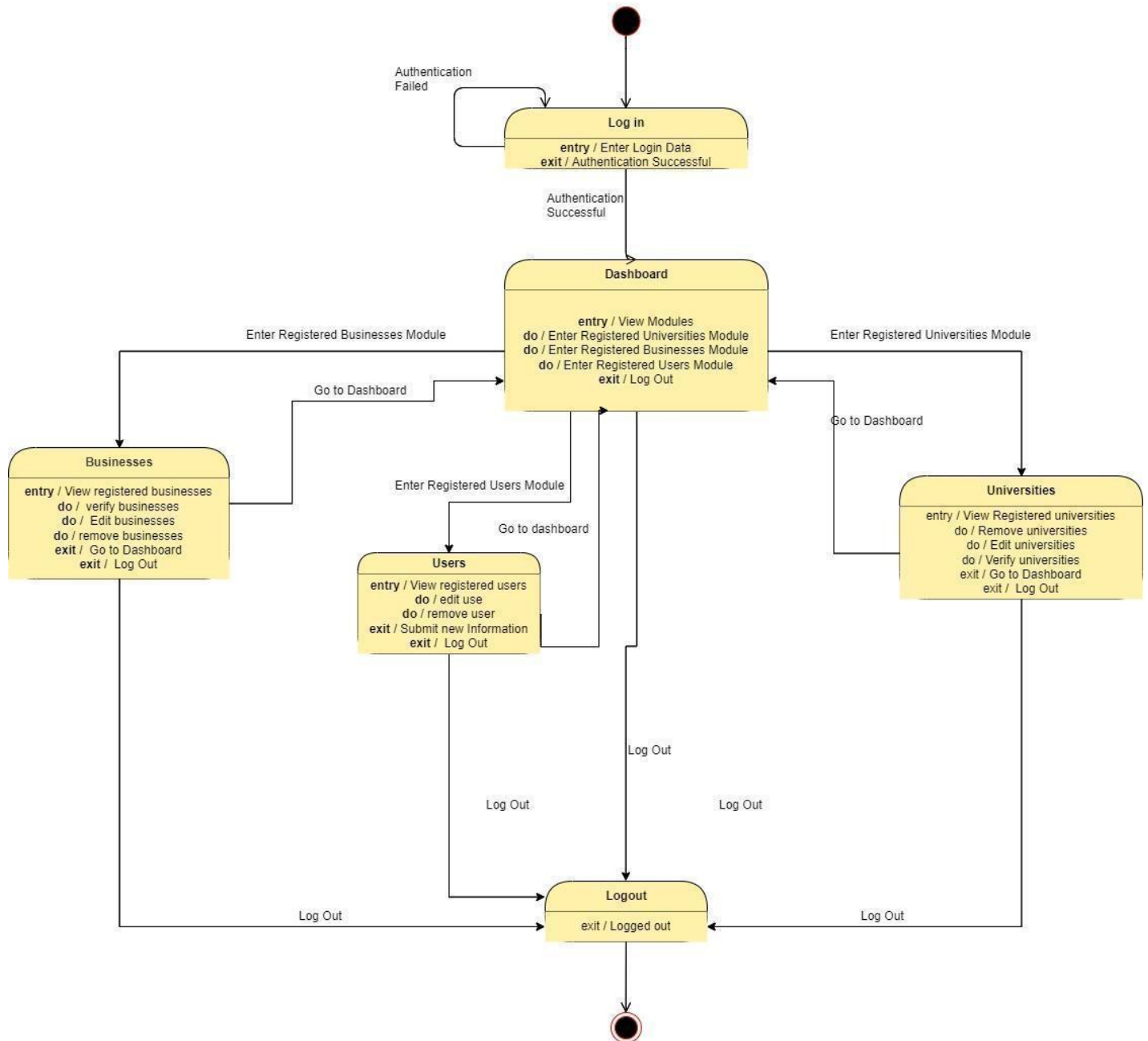


UC\_46 View & Download student's PP contract

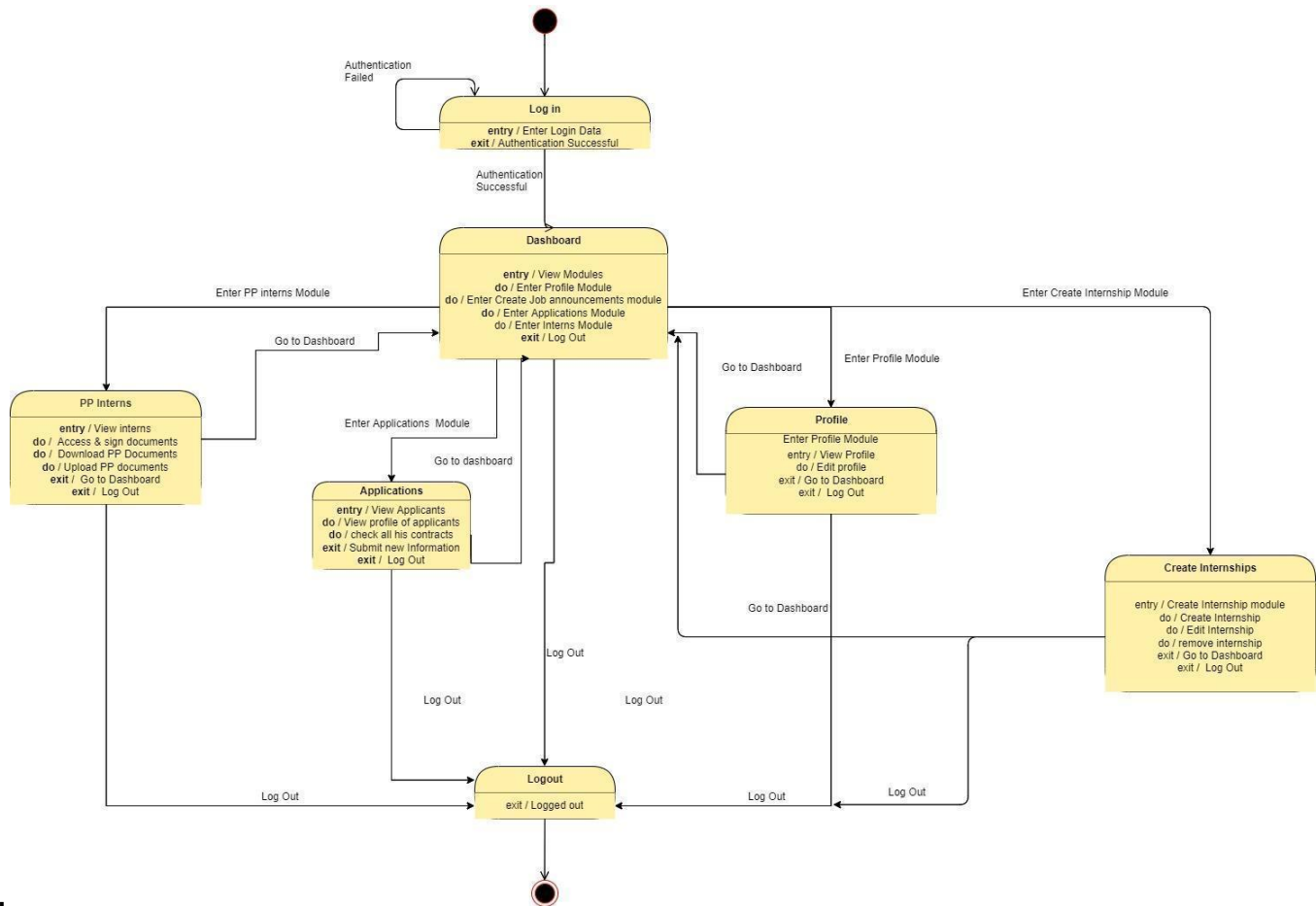


## 4.2.2 State Diagrams

Admin State Diagram



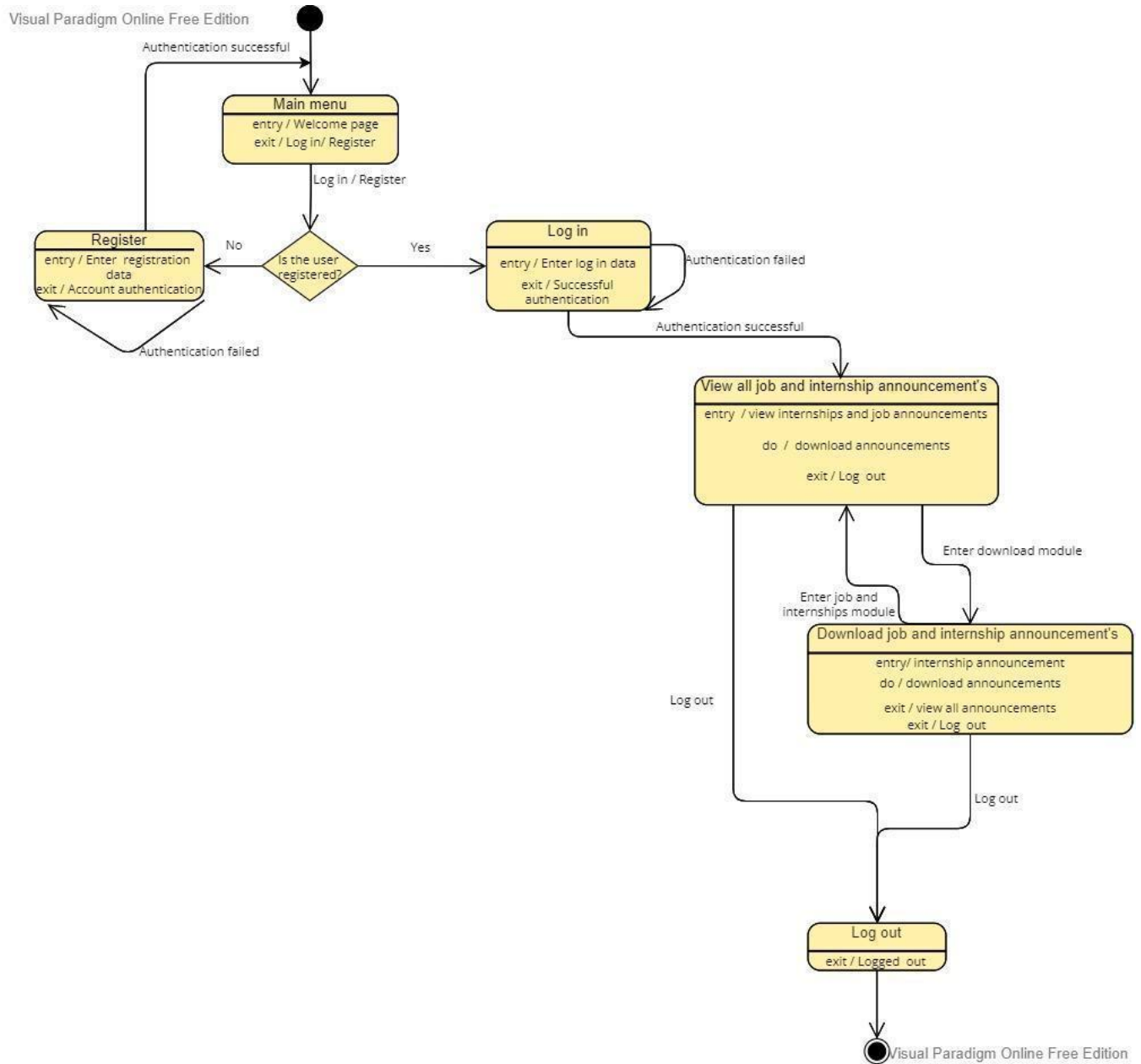
## Business State Diagram



iii.

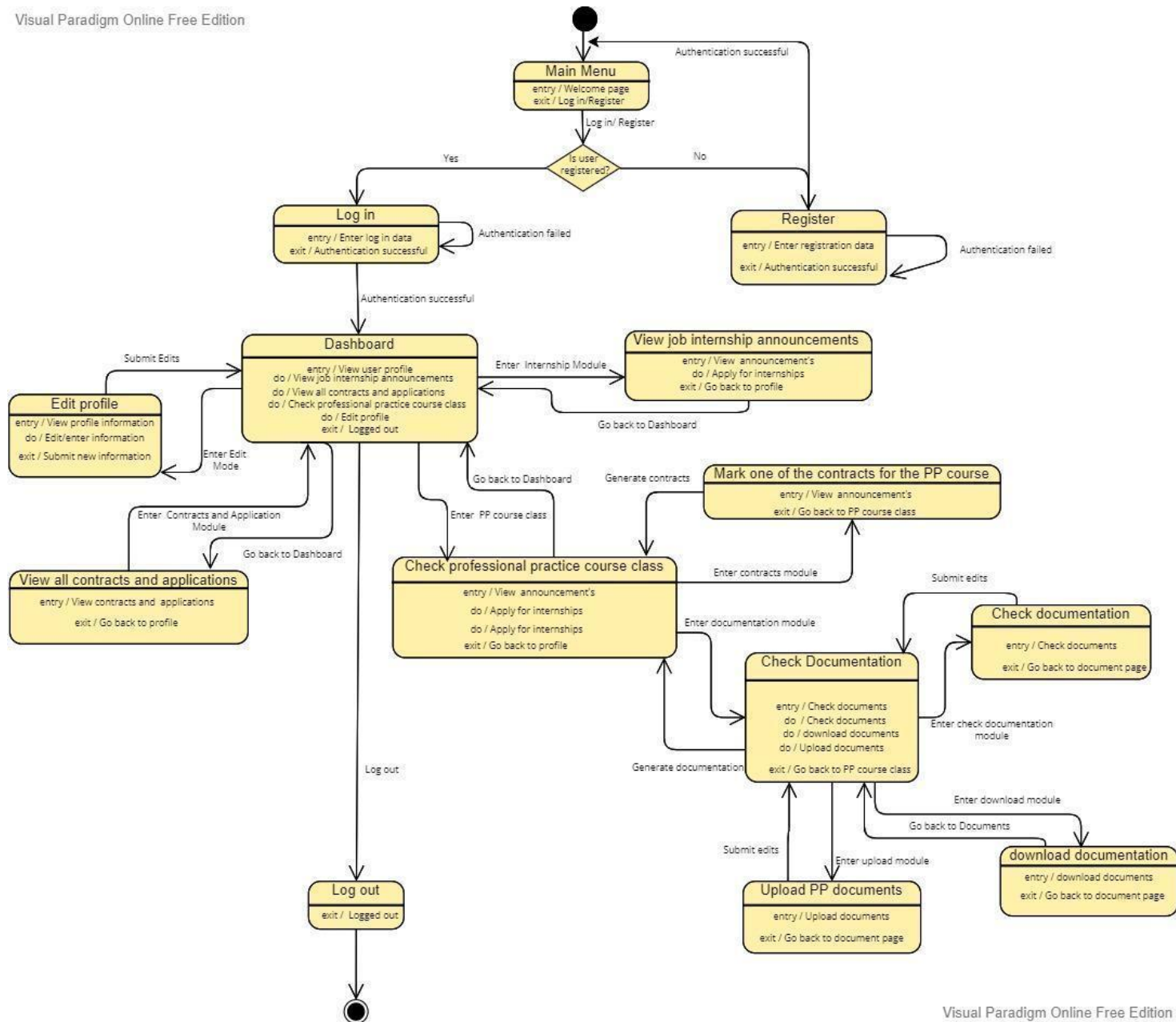
iv.

## Career Office State Diagrams



## General User State Diagram

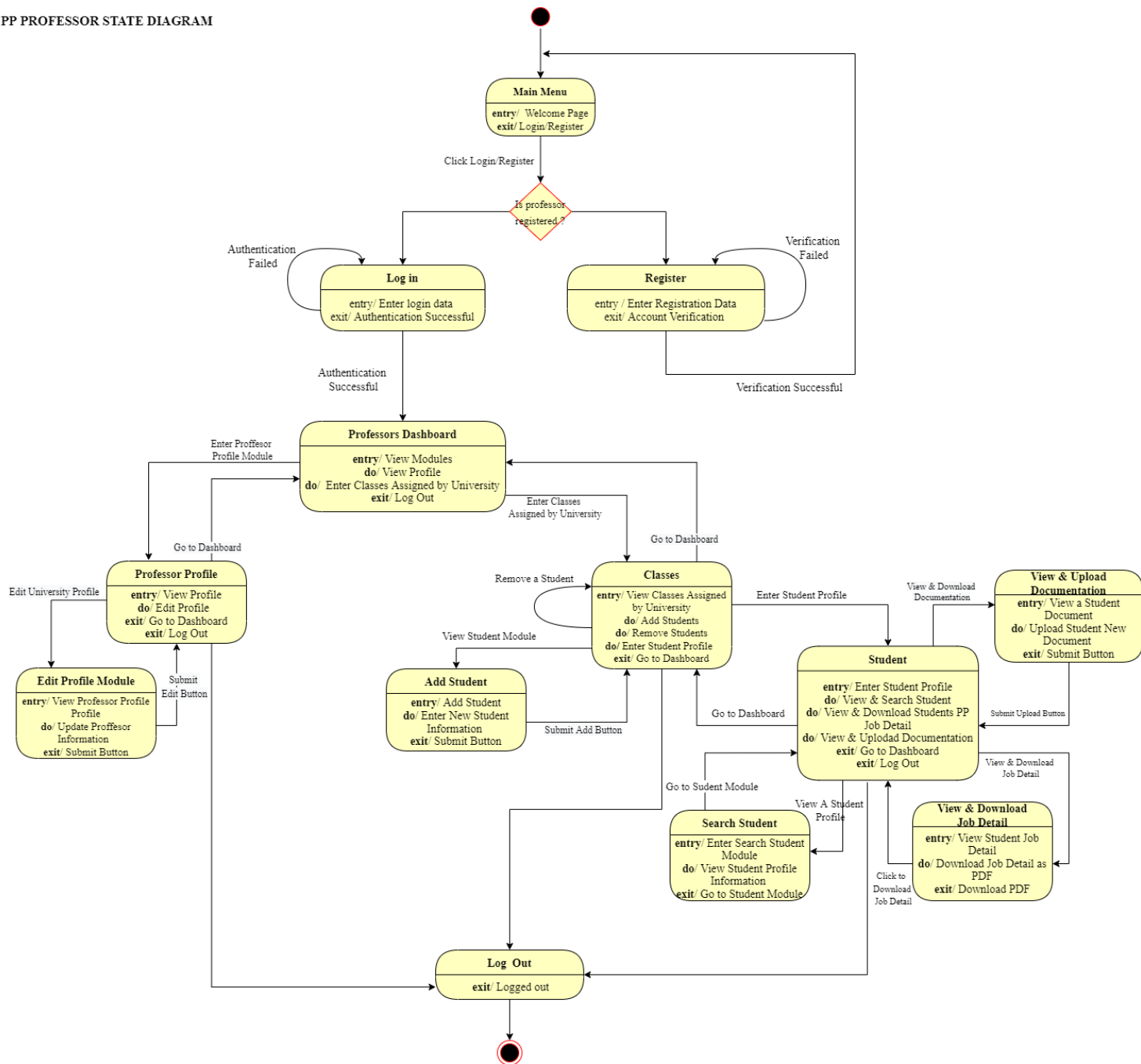
Visual Paradigm Online Free Edition



Visual Paradigm Online Free Edition

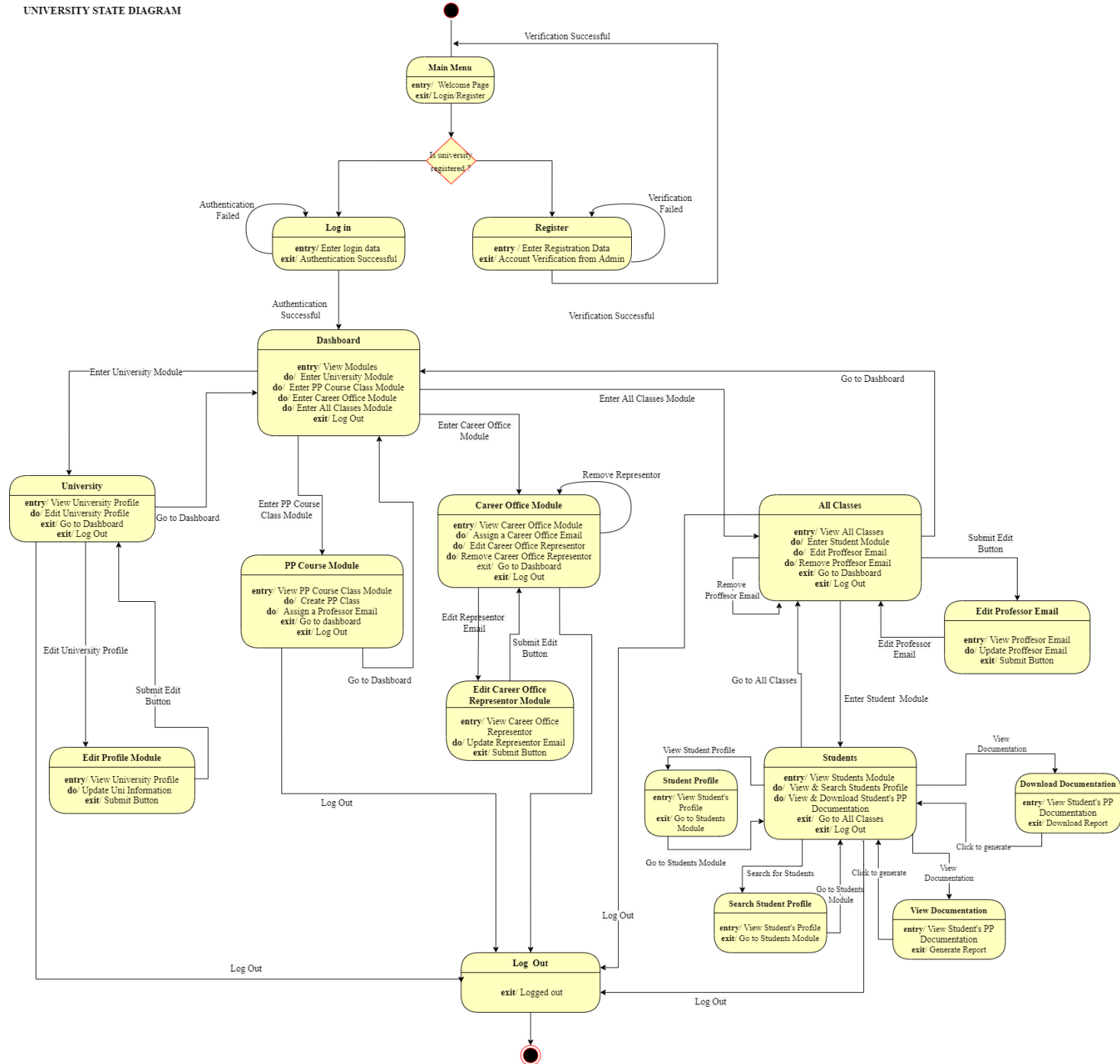
## Professional Practice Professor State Diagram

PP PROFESSOR STATE DIAGRAM



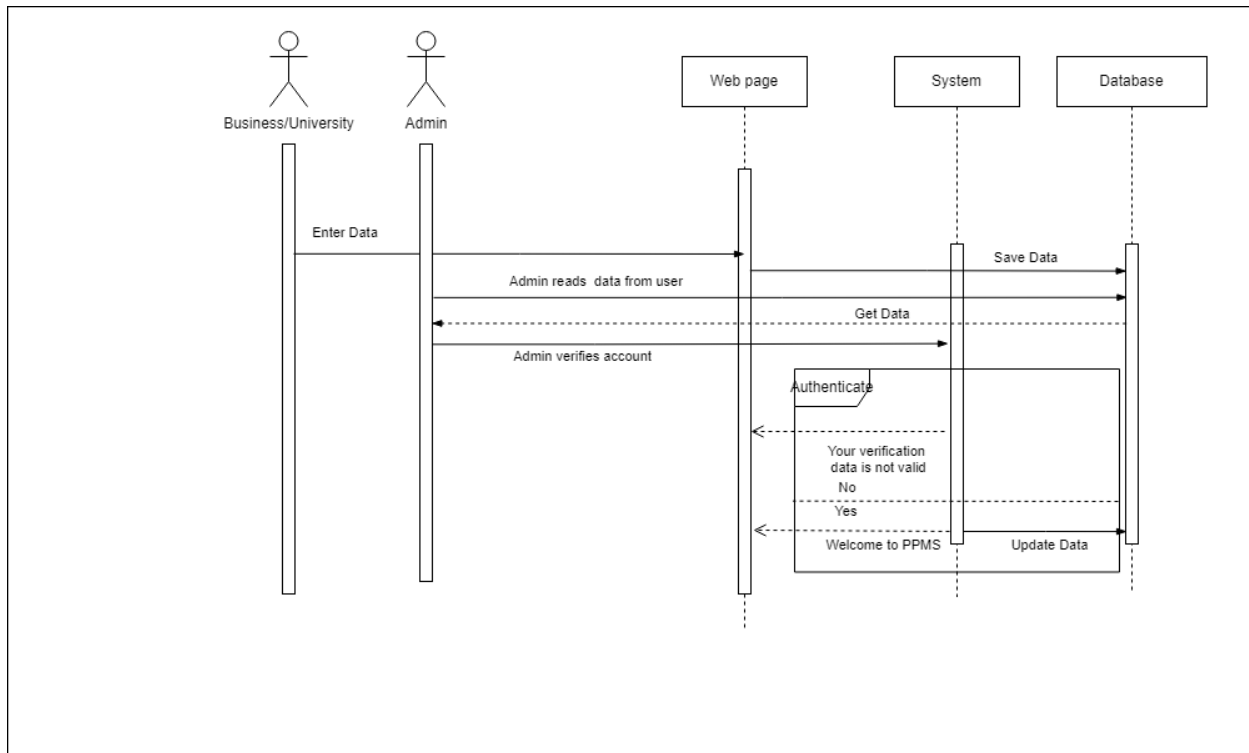
## University State Diagram

UNIVERSITY STATE DIAGRAM

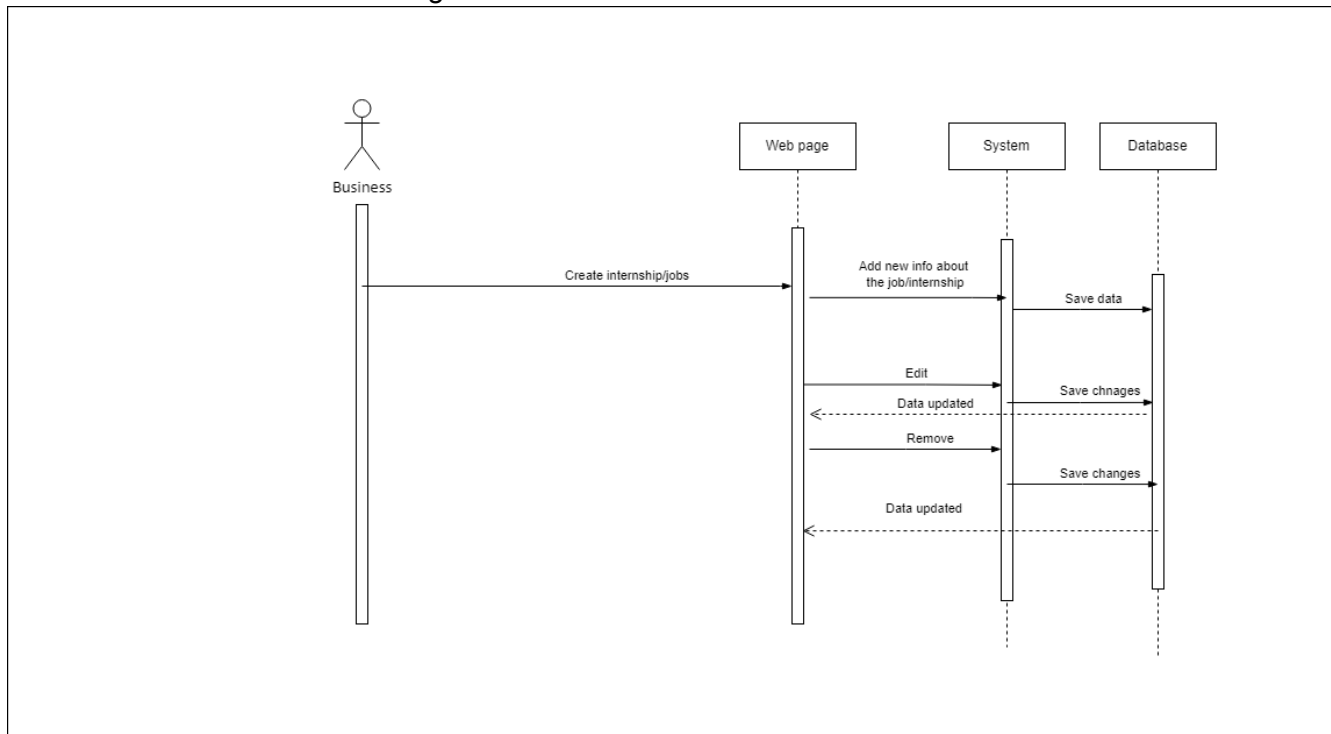


### 4.2.3 Sequence Diagrams

#### Account verification Diagram

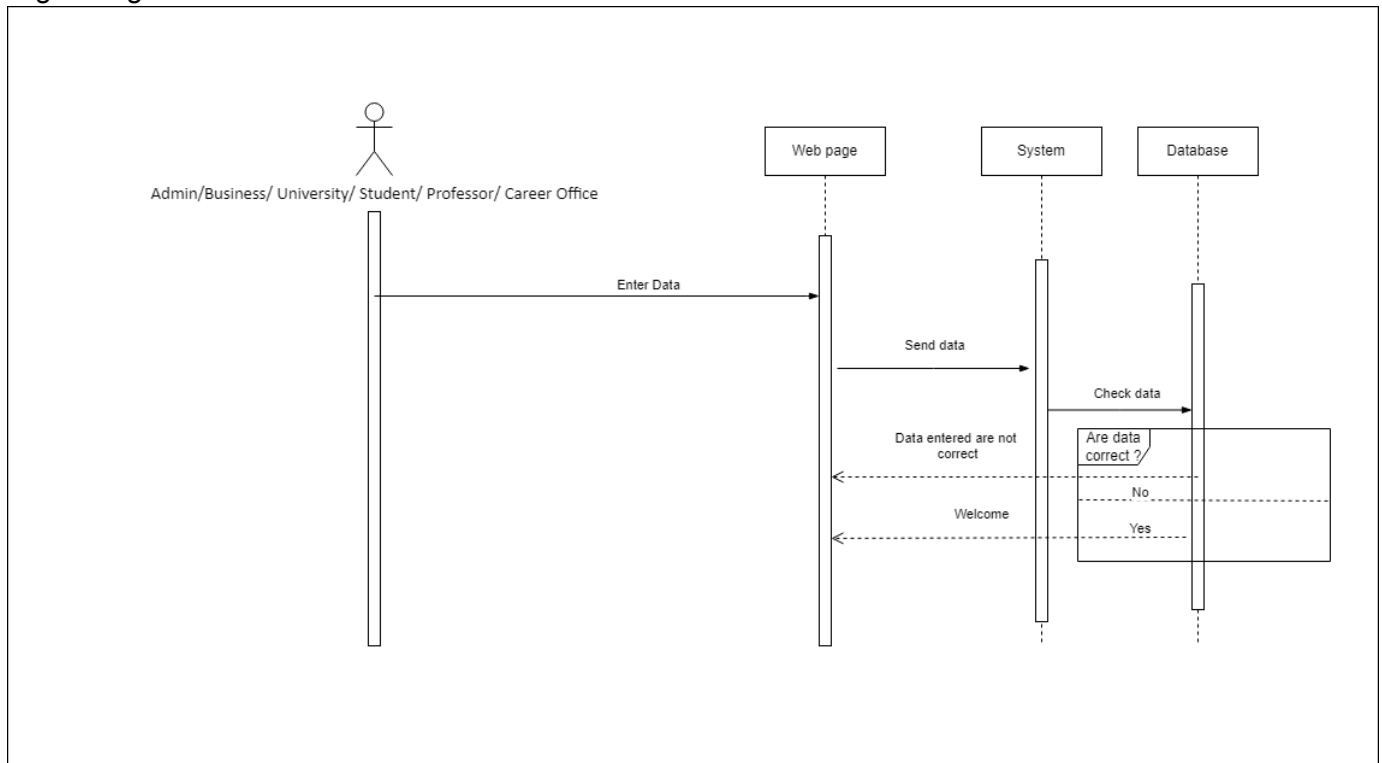


#### Create/edit/remove business Diagram

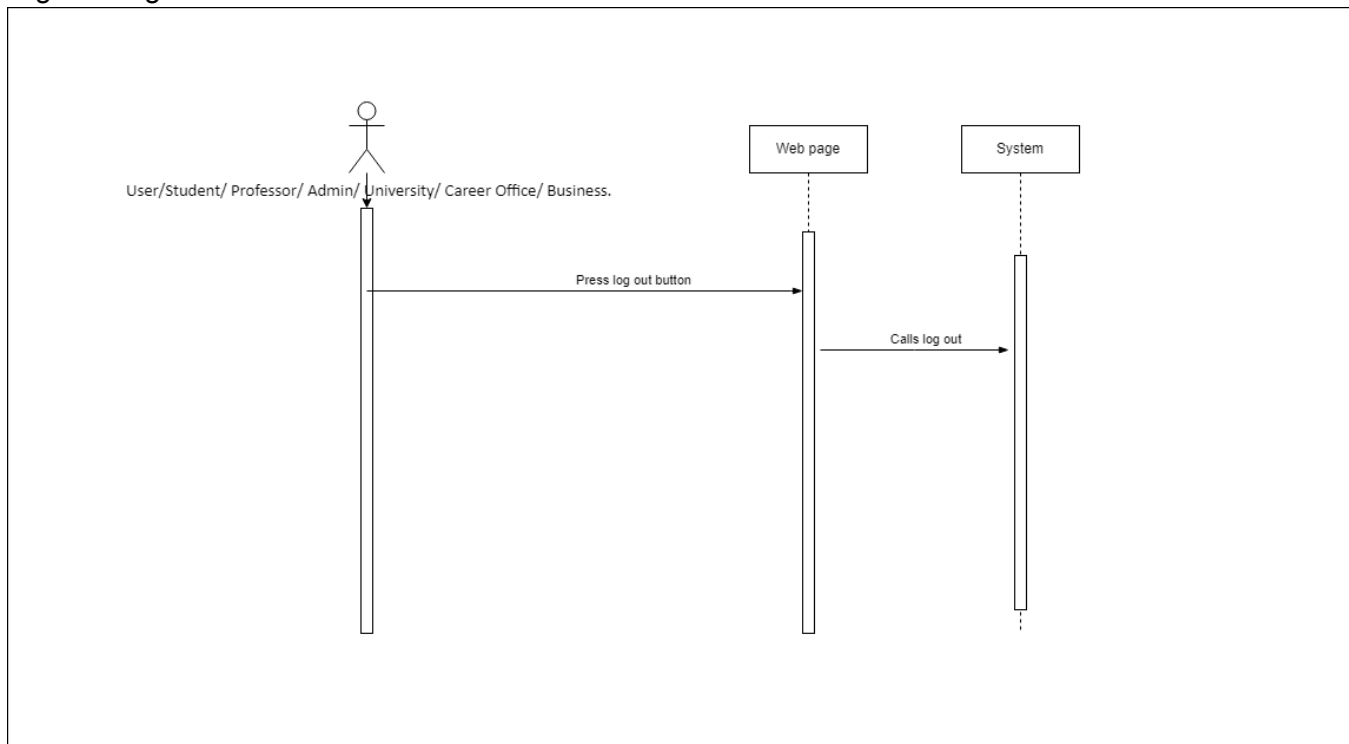




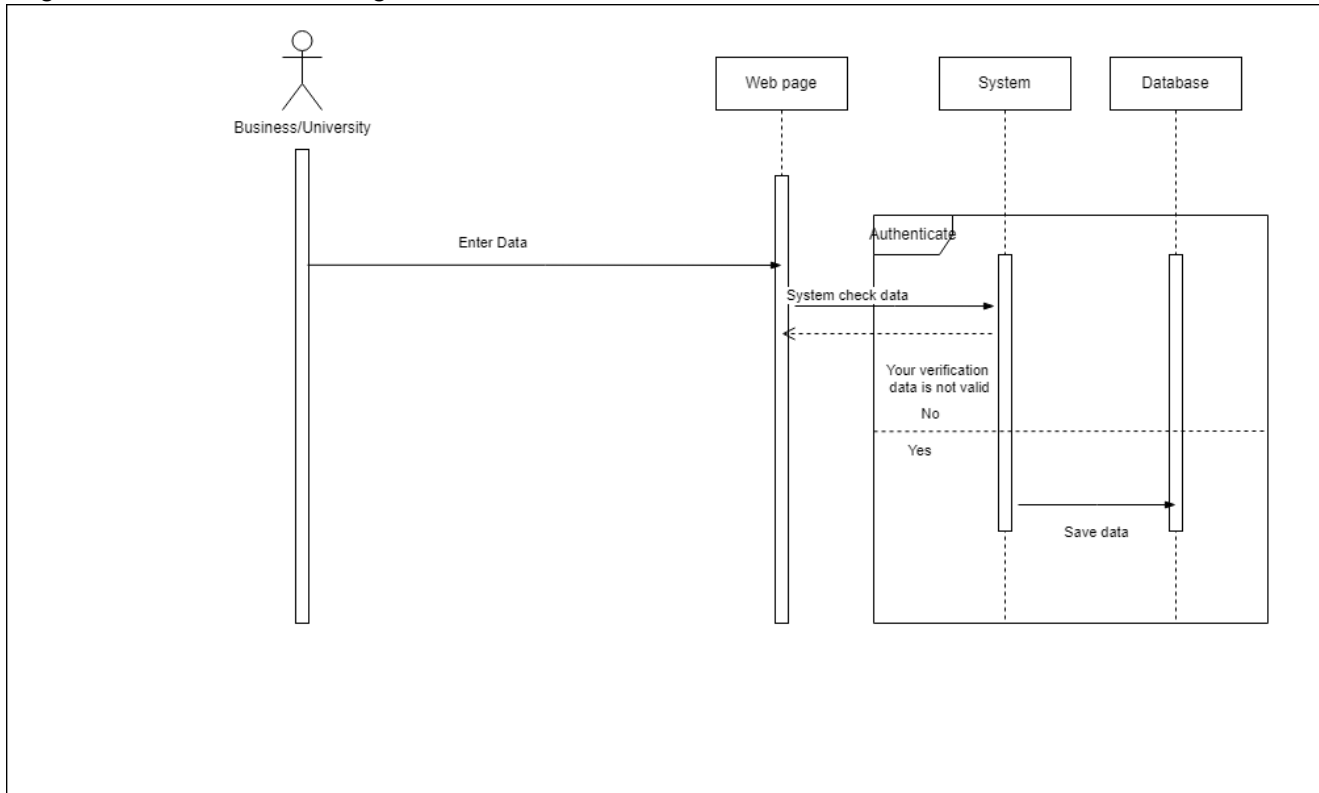
## Login Diagram



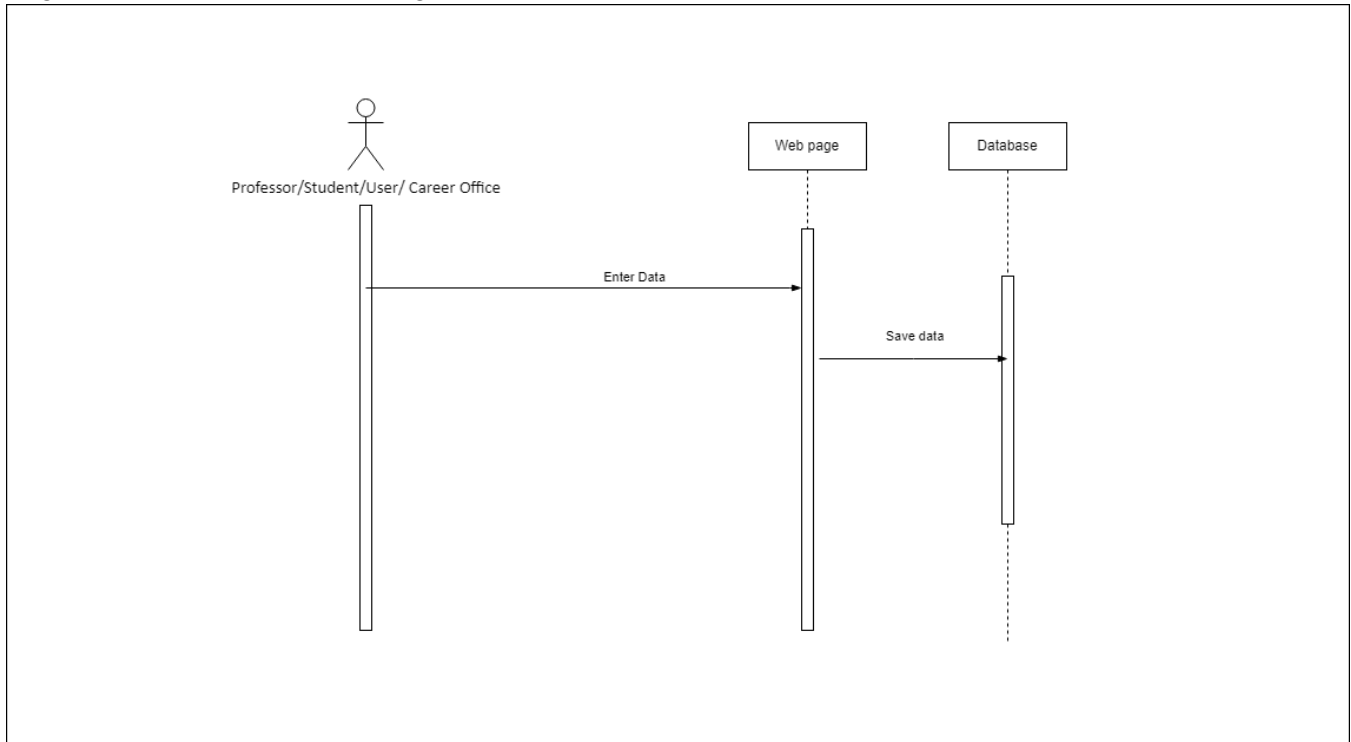
## Logout Diagram



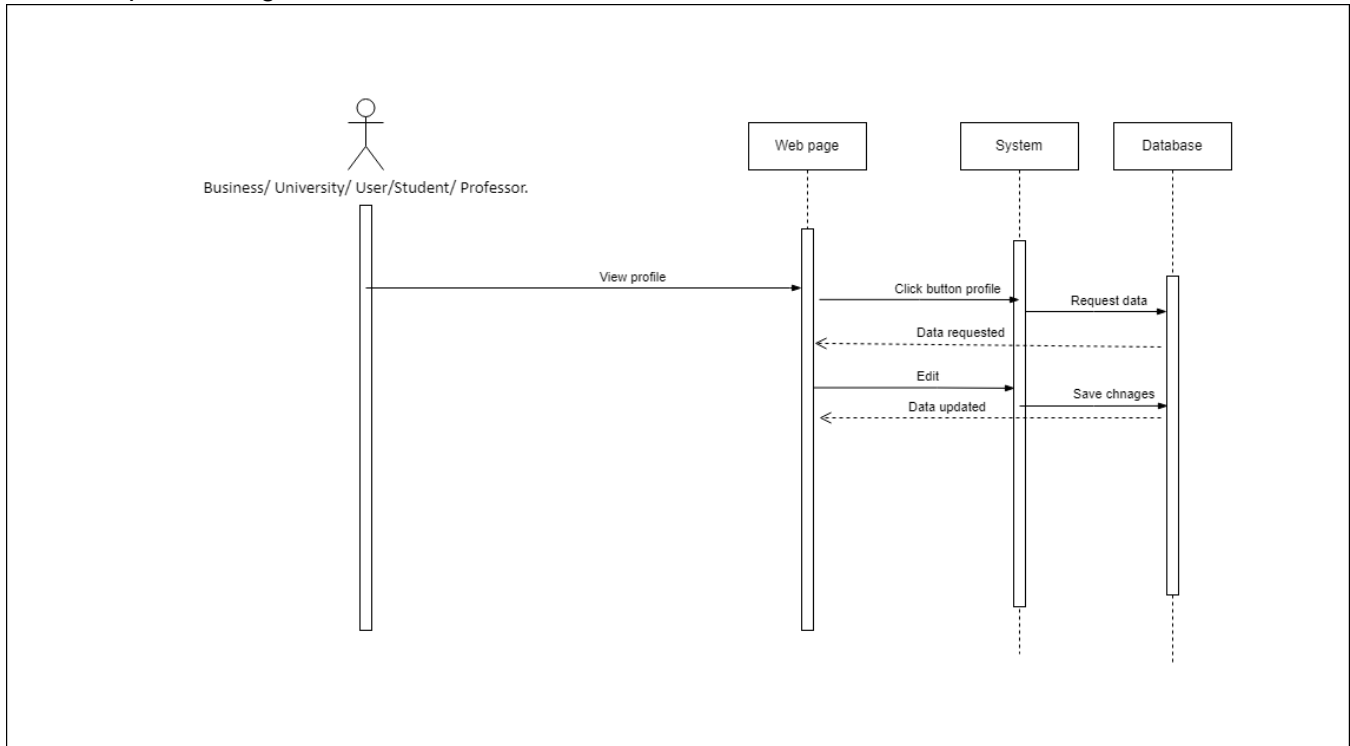
### Register with verification Diagram



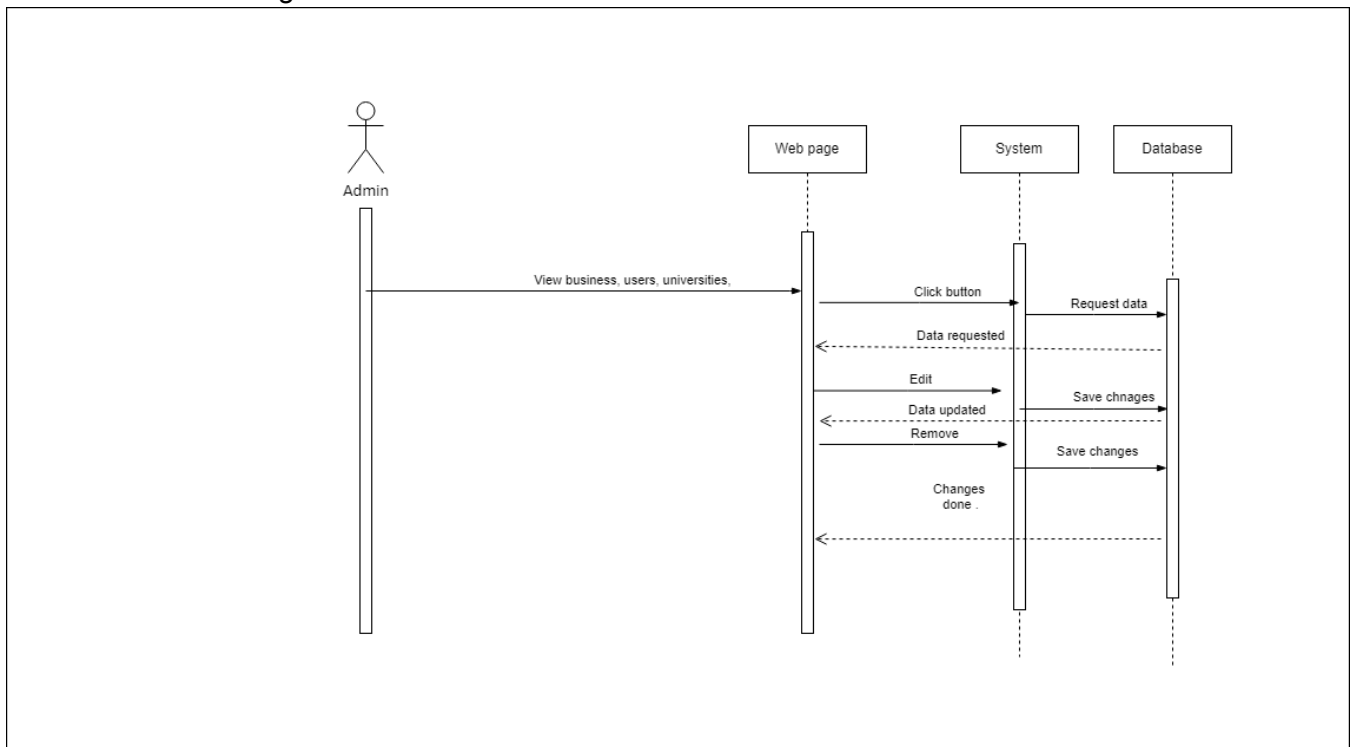
### Register without verification Diagram



### View edit profile Diagram

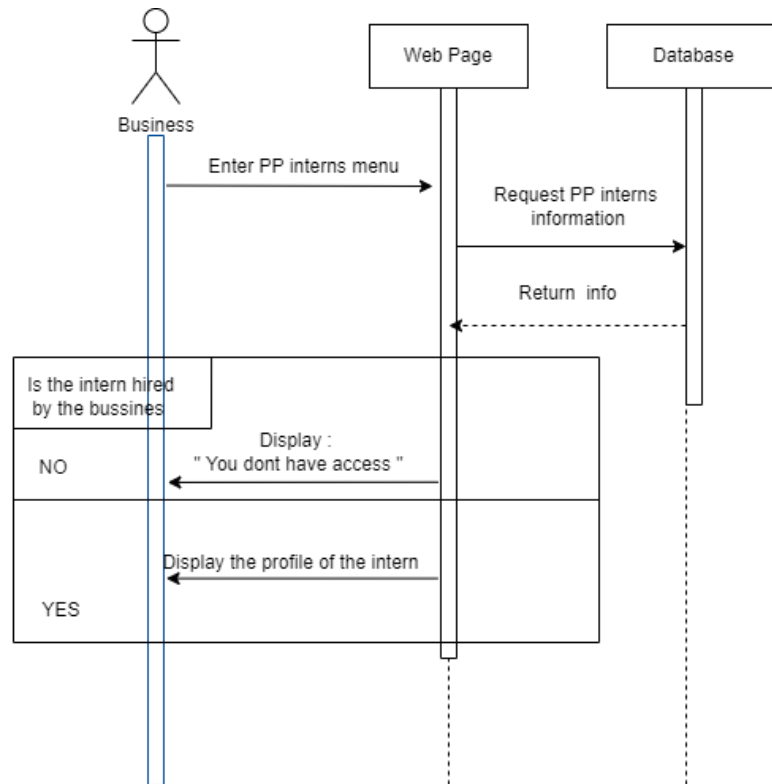


### View edit remove Diagram



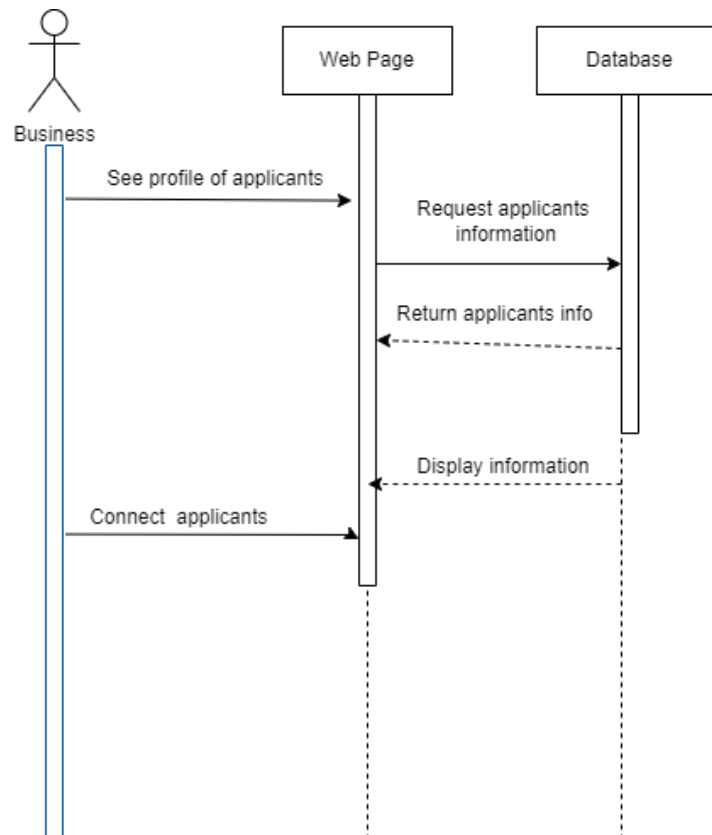
## Check PP interns Diagram

Check PP interns

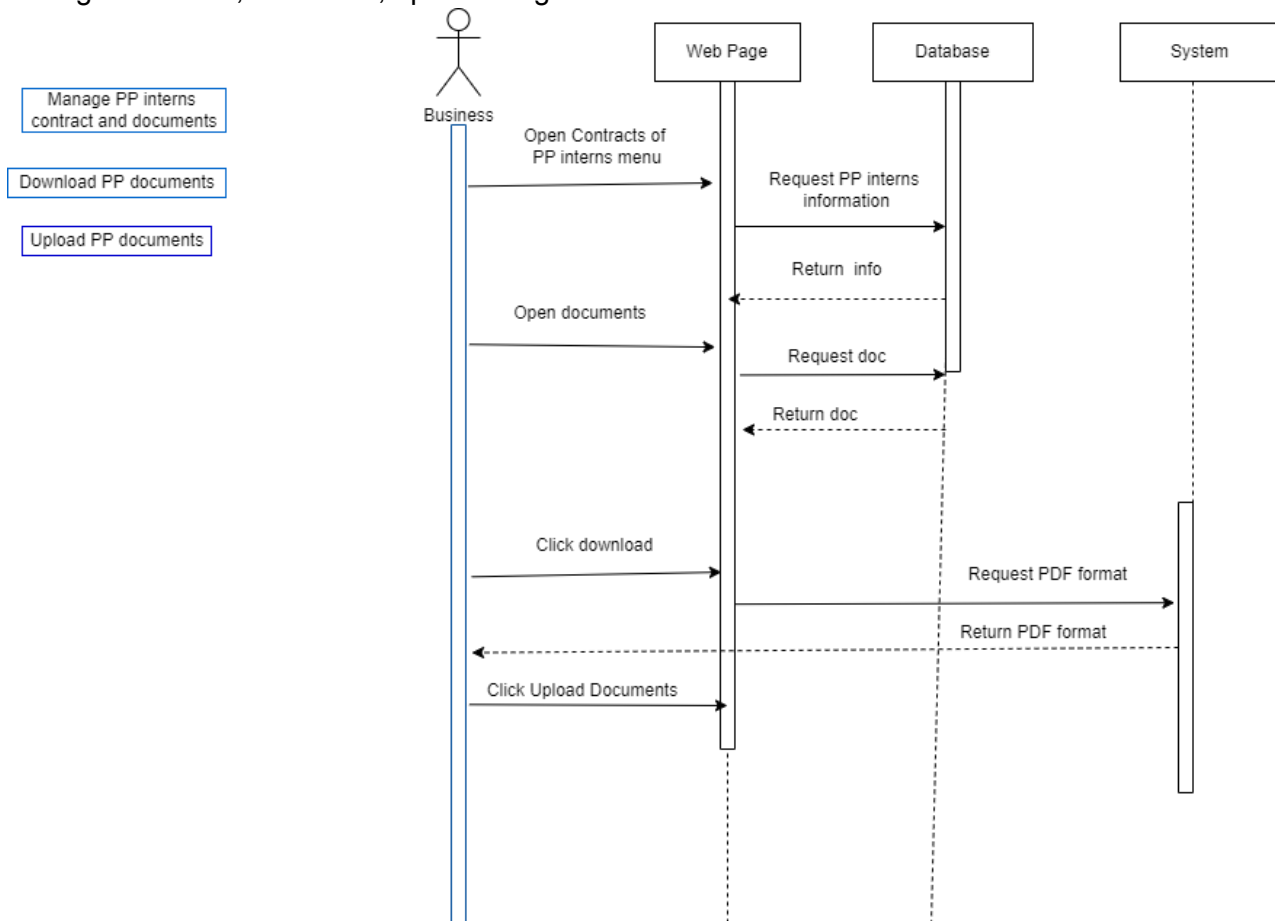


## Connect applicants Diagram

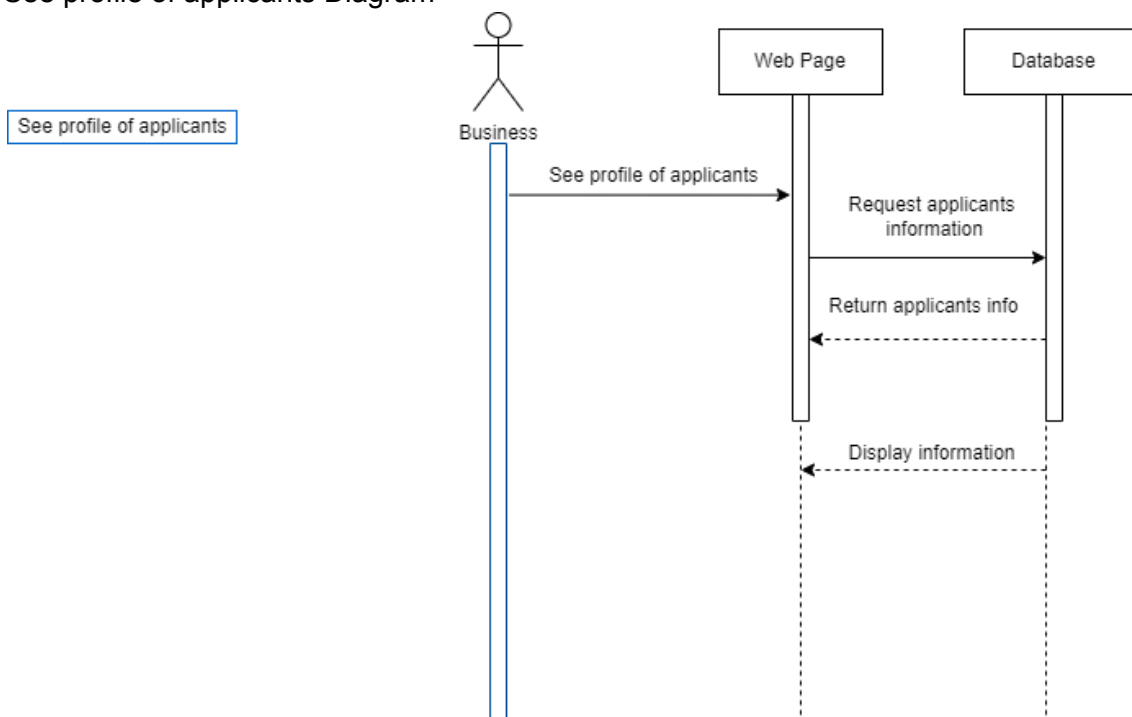
Connect none or more applicants



## Manage contracts, download, upload Diagram

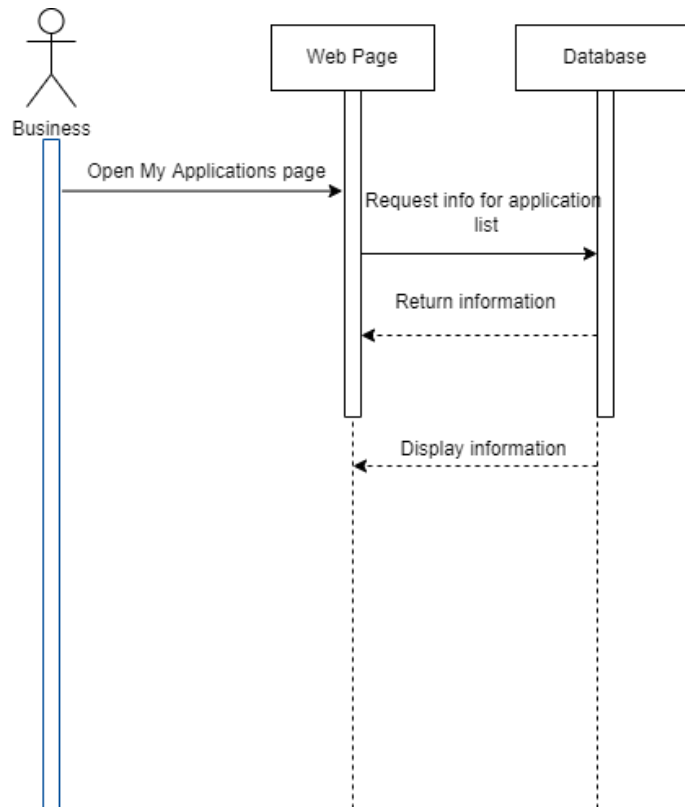


## See profile of applicants Diagram

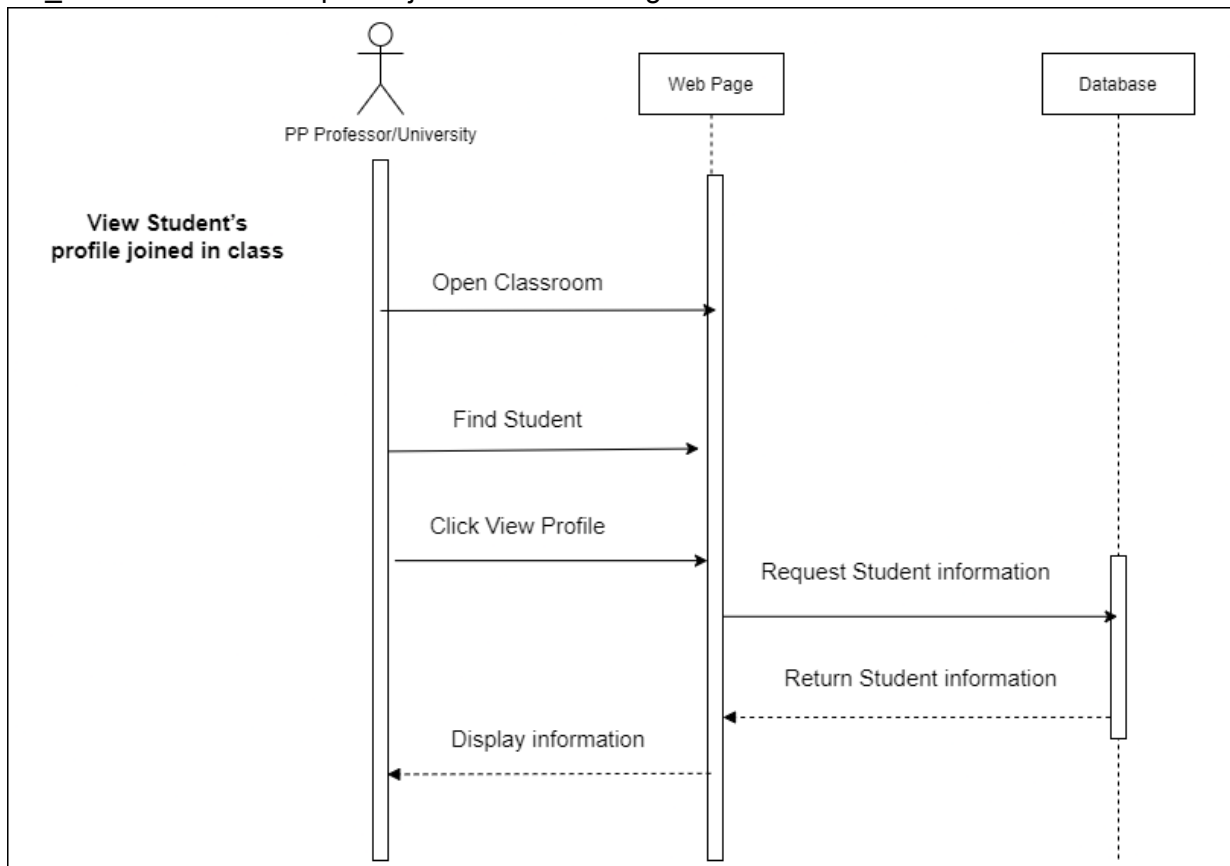


## View Applicants Diagram

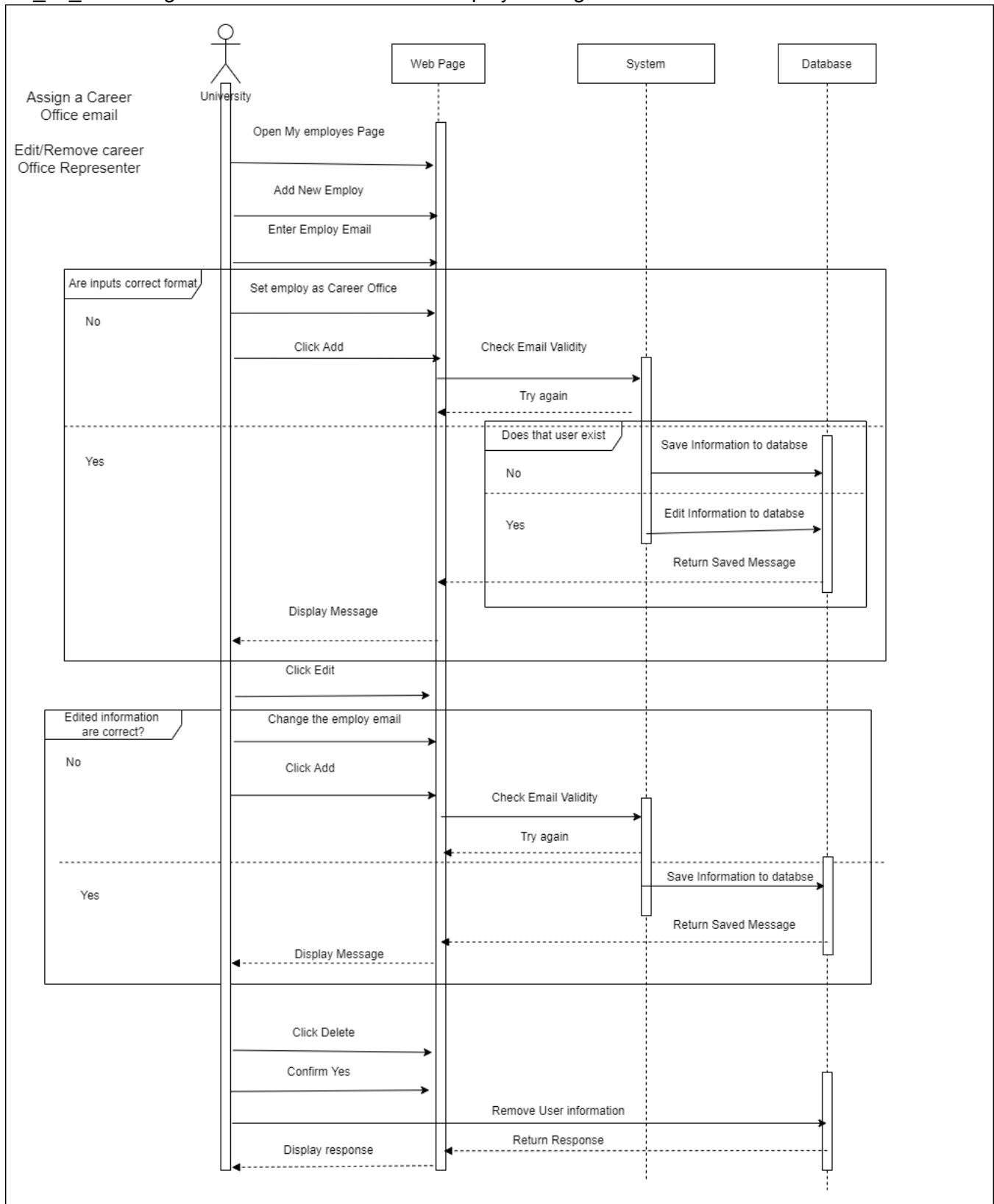
View Applications



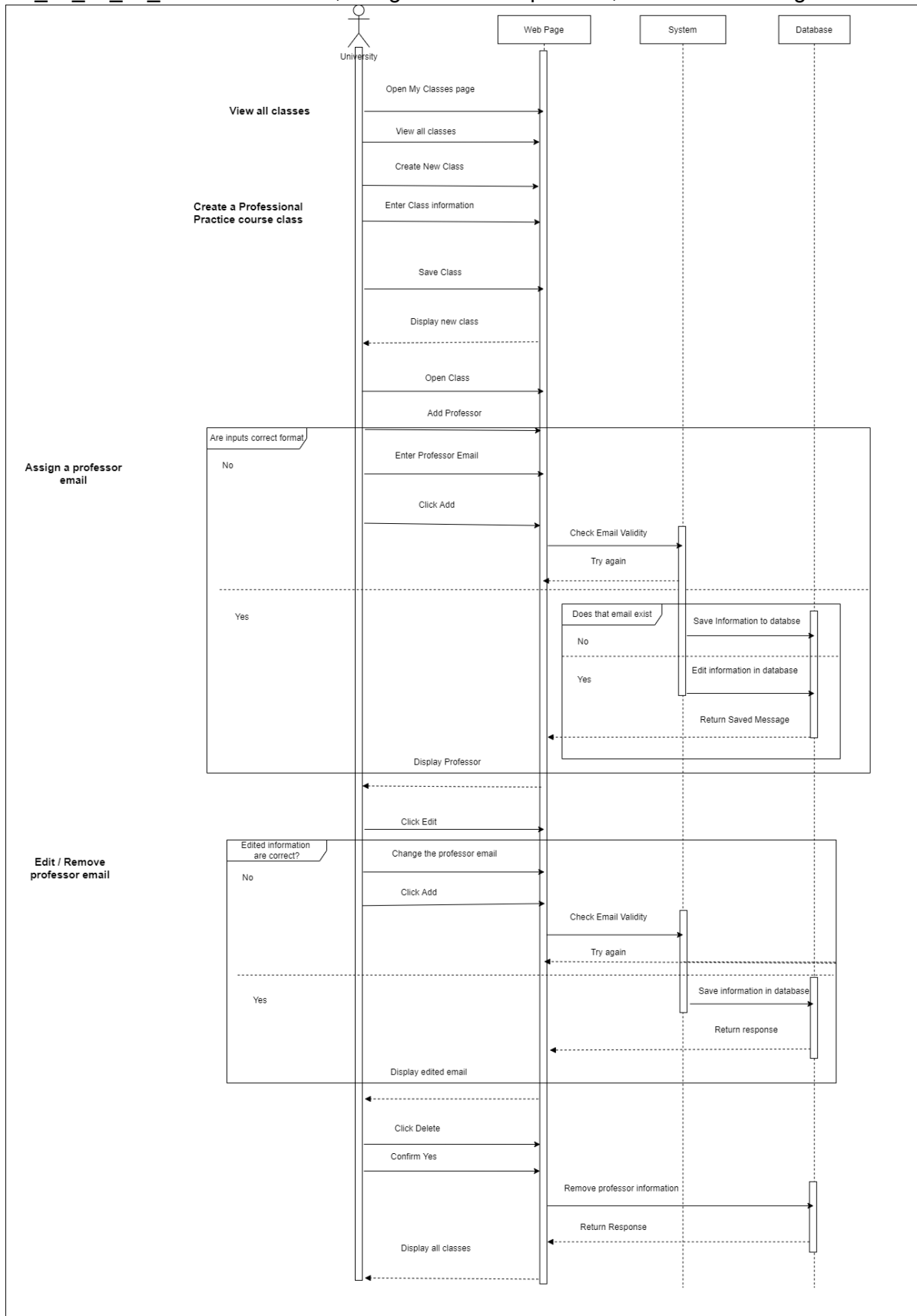
## UC\_37 - View Student's profile joined in class Diagram



UC\_31\_32 - Assign Edit Delete Career Office Employee Diagram

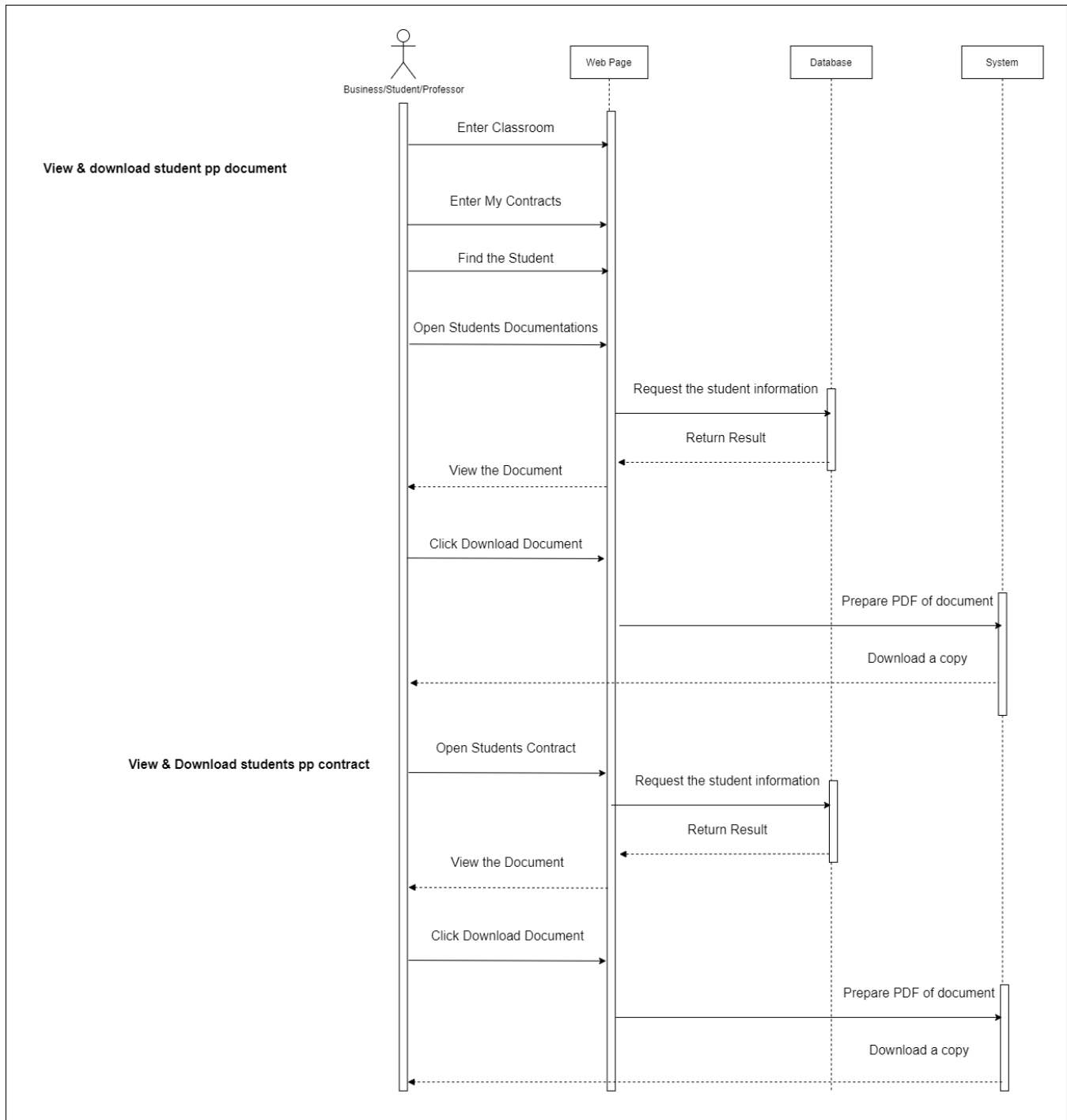


UC\_33\_34\_35\_36 - Create Class, Assign edit delete profesor, View classes Diagram

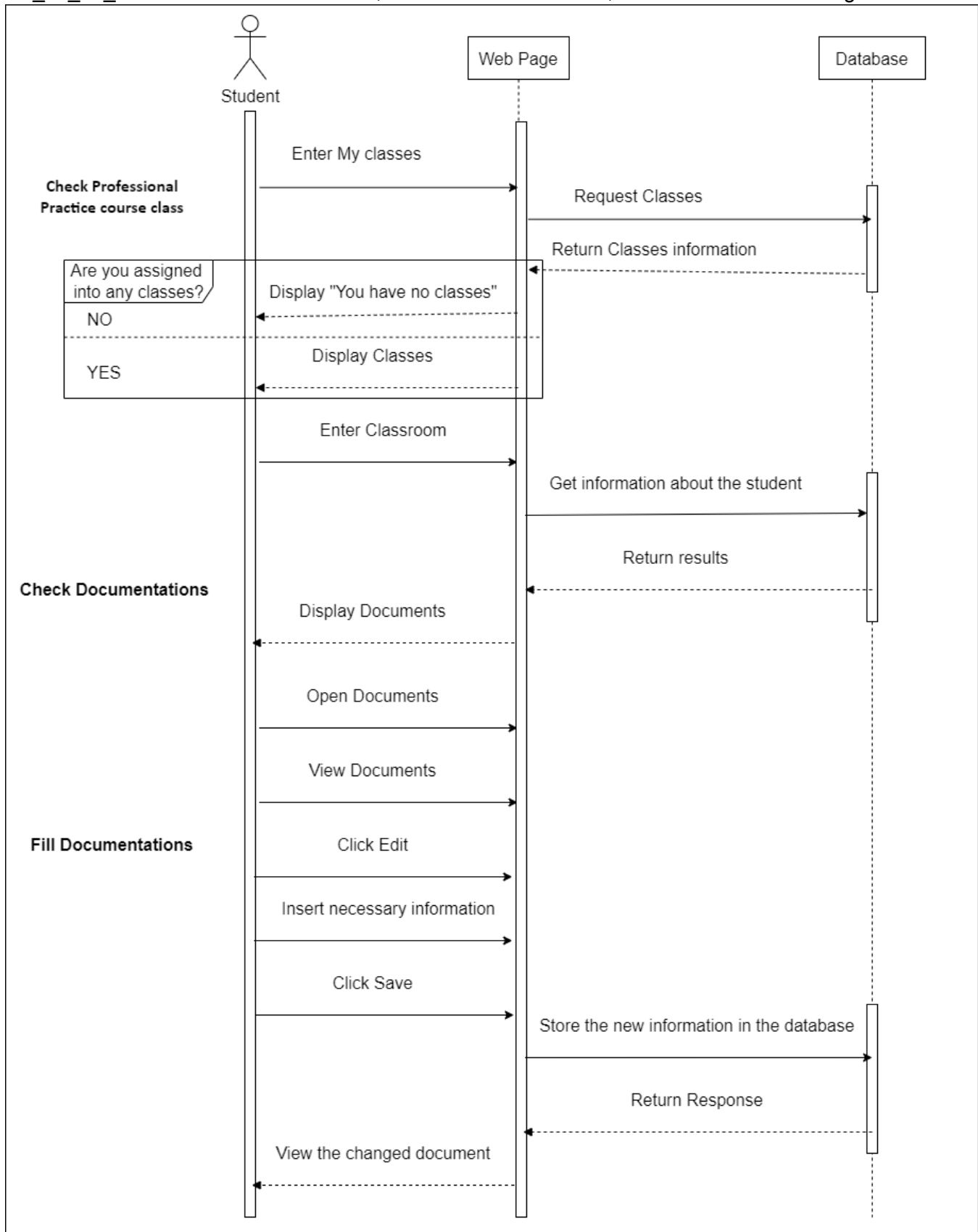




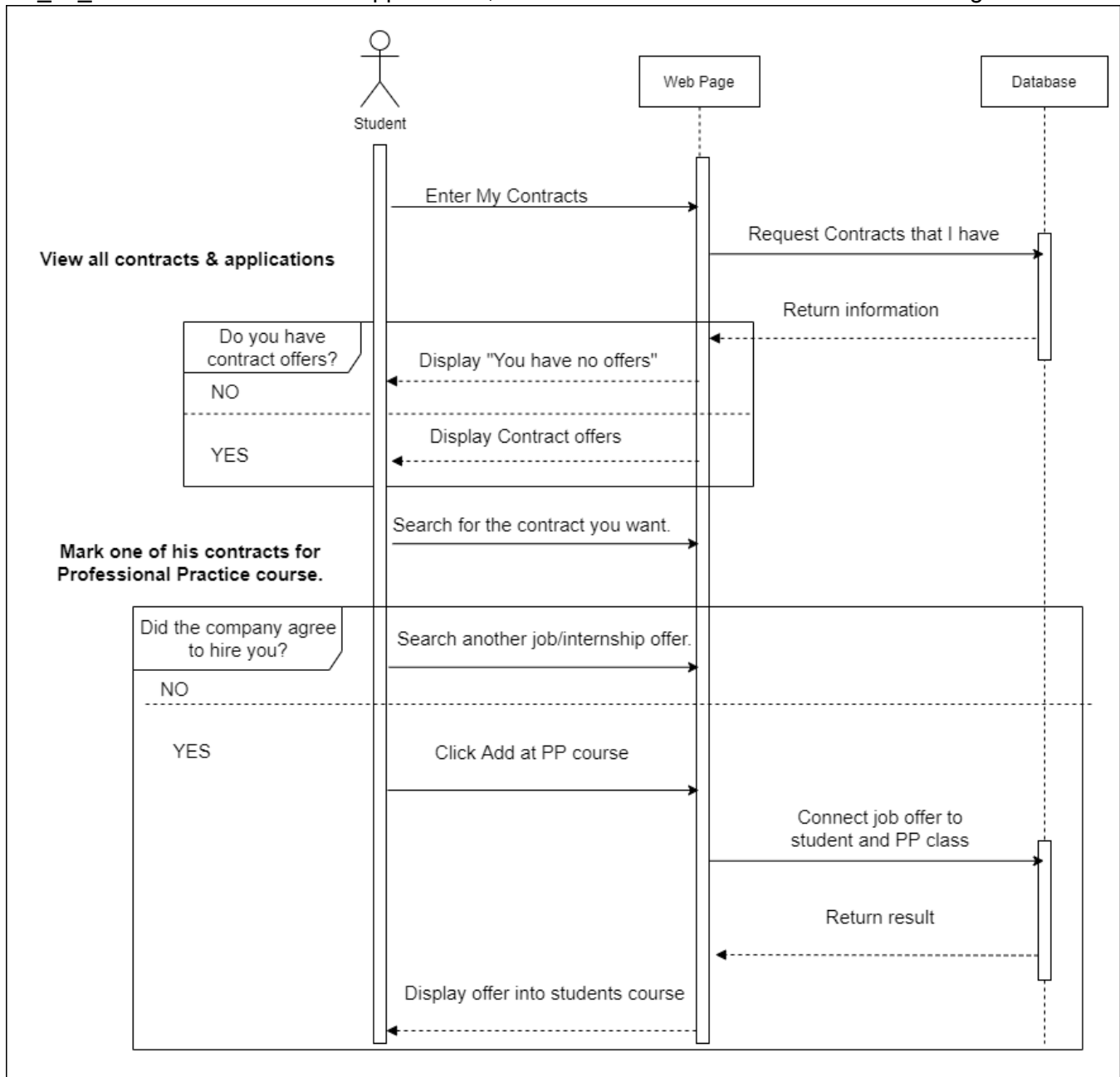
UC\_38\_46 - View & download student PP document, View & Download students PP contract Diagram



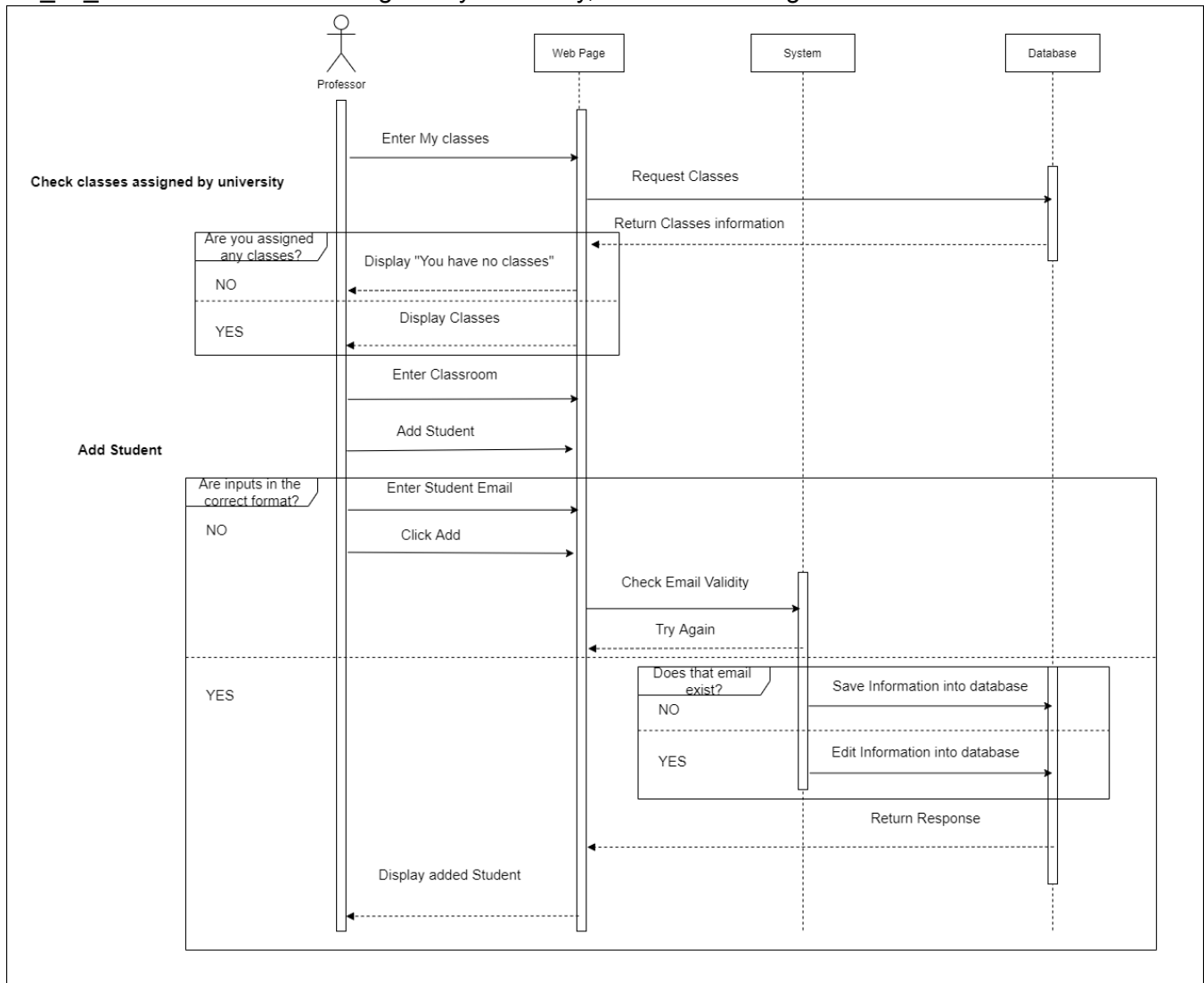
UC\_39\_40\_41 - Check PP course class, Check Documentations, Fill Documentations Diagram



UC\_42\_45 - View all contracts & applications, Mark one of his contracts for PP course Diagram

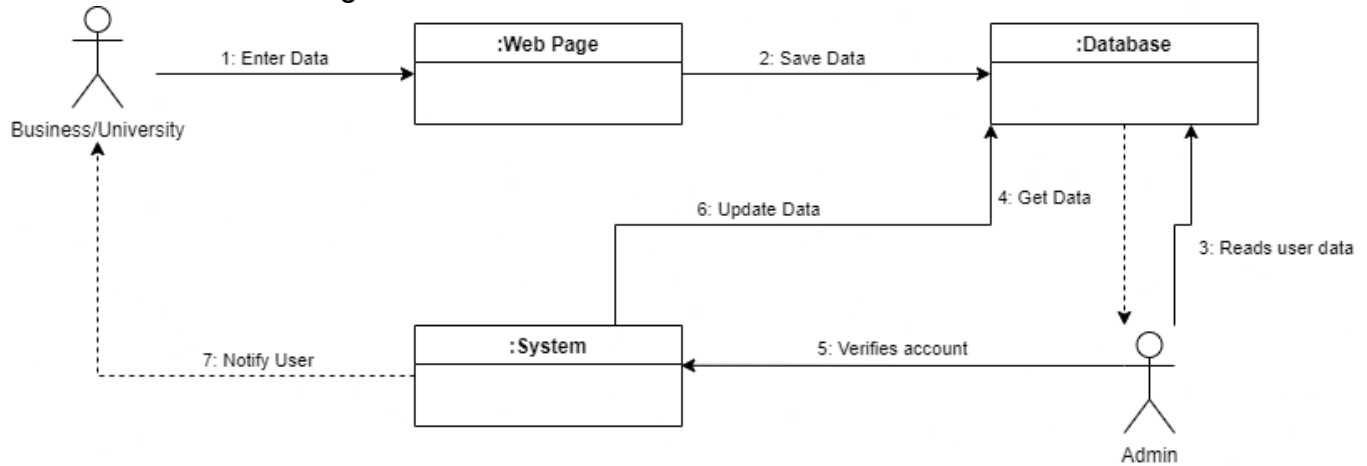


**UC\_43\_44 - Check Classes assigned by university, Add student Diagram**

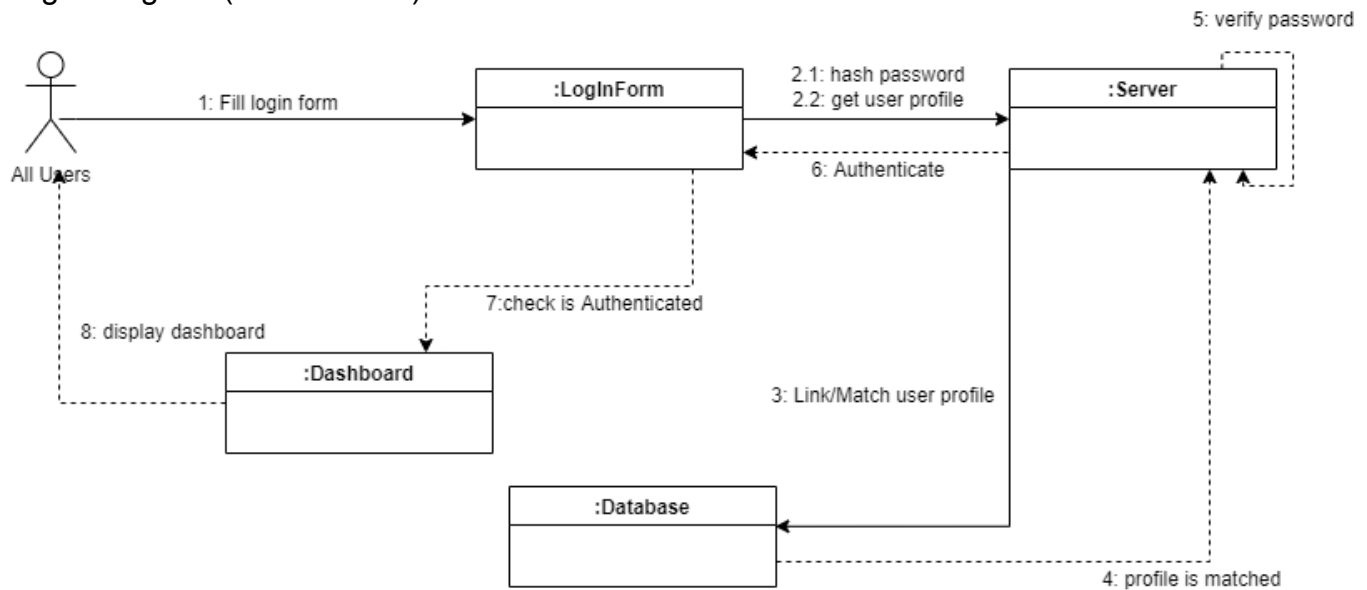


#### 4.2.4 Collaboration Diagrams

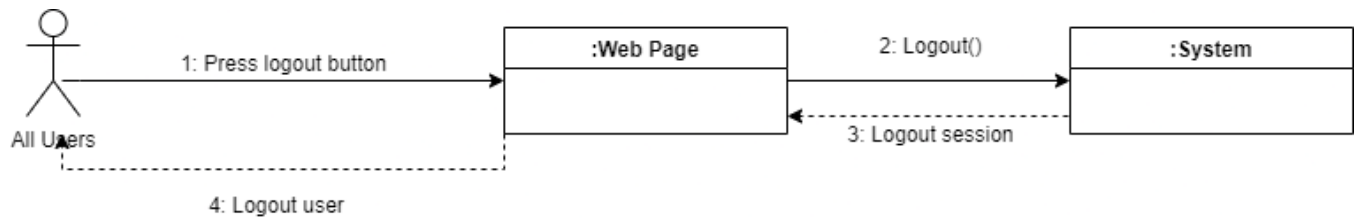
Account verification Diagram



Login Diagram (Authenticate)

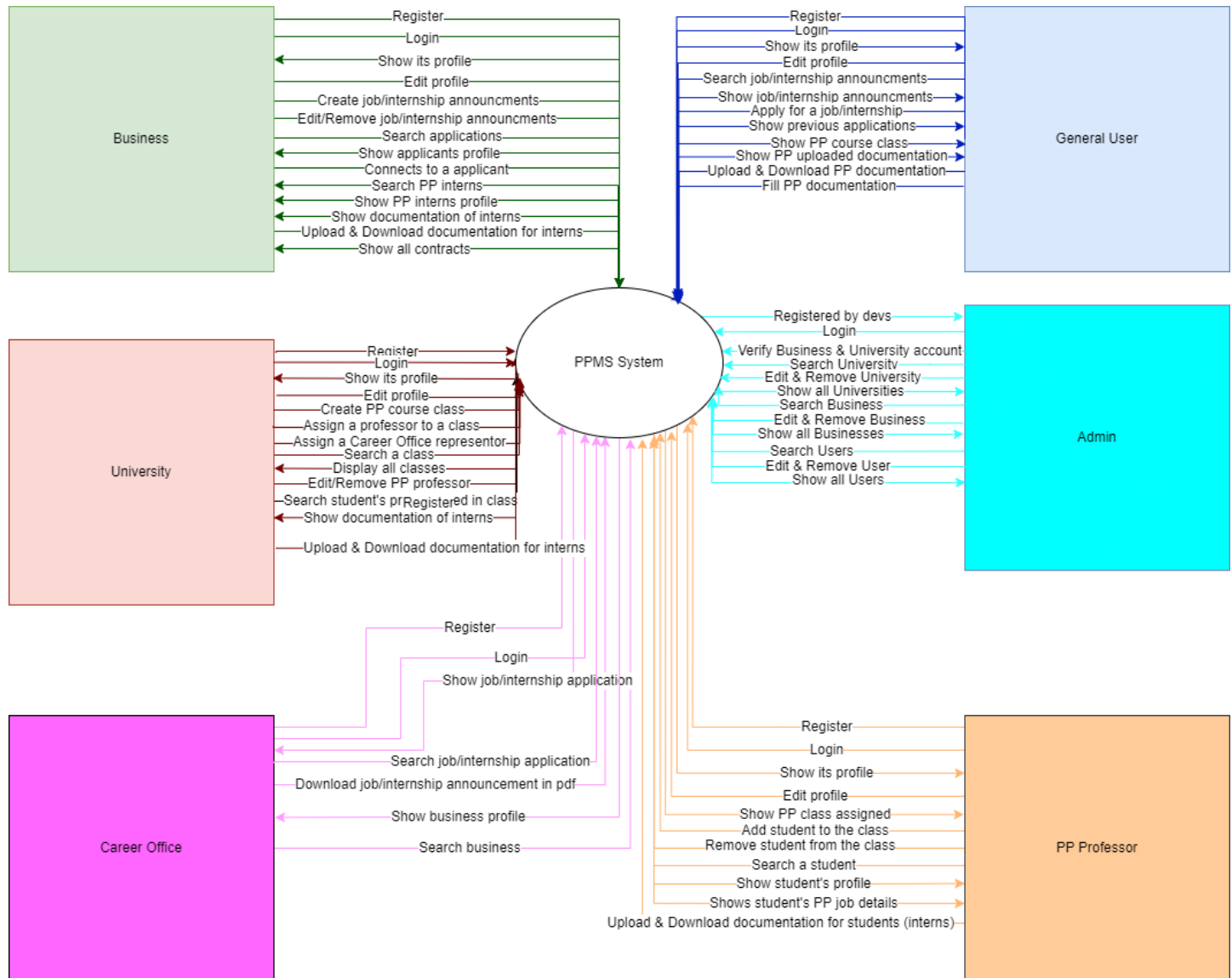


Logout Diagram

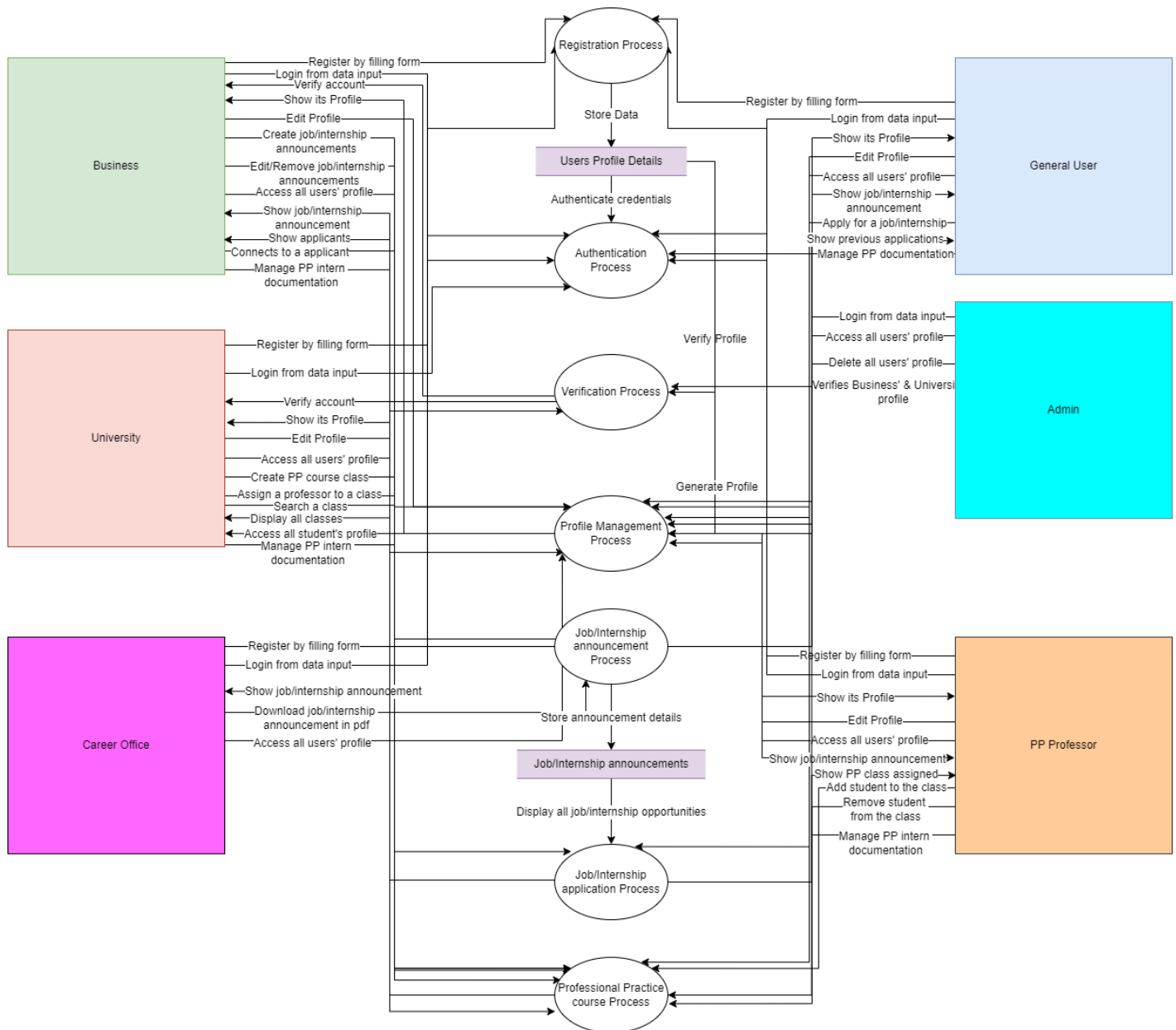


### 4.3 Data Flow Diagrams

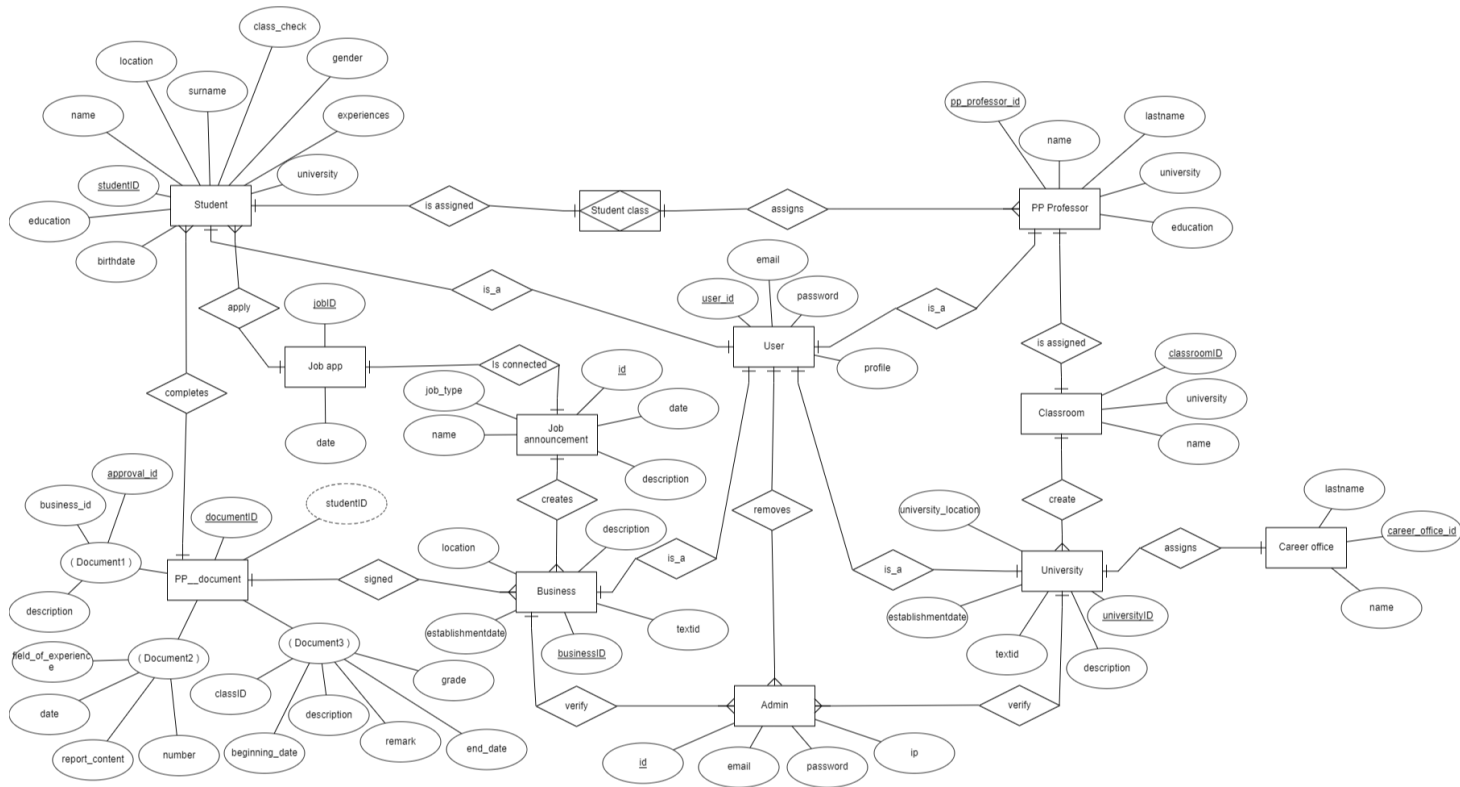
**Data Flow Diagram (Level 0)**



## Data Flow Diagram (Level 1)



## 4.4 Entity Relation Diagram





## 5. Implementation

PPMS is a web based application running on top of a web server that can be accessed through a web browser.

### 5.1 Technologies Used

#### 5.1.1 Frontend (Client side development)

The client side of this software is built using these scripting and stylesheet languages:

1. HTML5 - A markup language used for structuring and presenting content on the World Wide Web. It is used to create the structure of the front-end.
2. CSS – A styling language, used for designing the pages, layouts, fonts, colors.
3. JavaScript – High level, dynamic, untyped, and interpreted programming language that makes the pages more interactive.

Libraries:

1. Bootstrap - the most popular HTML, CSS, and JavaScript framework for developing responsive, mobile-first websites. We have used Bootstrap v.4 for the implementation of our software.
2. jQuery – A JavaScript library that simplifies the JavaScript usage with respect to front end tasks.

We have utilized the following features from the jQuery library:

- HTML/DOM manipulation
- CSS manipulation
- Event handling
- Effects and animations
- AJAX (Asynchronous JavaScript And XML) - Make HTTP requests to the server without reloading the page, receive and work with data coming from the server. JSON objects are used to exchange data with the server.

#### 5.1.2 Backend (Server-side development)

The back-end of this software is implemented using vanilla PHP: a fast, flexible and pragmatic general purpose scripting language that is especially suited to web development. XAMPP is used as the most popular PHP development environment (not meant for production). As part of XAMPP, Apache HTTP Server is used. Apache is an HTTP, cross-platform web server, used worldwide for delivering web content. The remote server of Apache delivers the requested files, images, and other documents to the user.

To access the database from the backend, the PDO abstraction layer is used. It offers unified interface to access many different databases.

Benefits of PDO:

- security (prepared statements achieve protection from SQL injections)
- usability (many helper functions to automate routine operations)
- reusability (unified API to access multitude of databases, from SQLite to Oracle)

### 5.1.3 Database

The database used for this software is MySQL, a relational database management system (more specifically the open source MariaDB as part of XAMPP, a fork of MySQL). Using standard structured query language, being fast, reliable, compliable on a number of platforms, and easy to work with, it was the best choice for this kind of project.

### 5.1.4 MVC architecture

Our approach to utilizing an MVC folder structure for this implementation is as follows:

- **Model:** the model classes have the single responsibility of communicating directly with the database. Inside each model, the respective functions that prepare the query statements are constructed. These functions return the results of database operations to the controllers. For example a Patient object will retrieve the patient information from the database, manipulate it and update its data back to the database.
- **View:** The views form the front-end of our application. These are basic html files with UI components that incorporate JavaScript for an interactive experience. In the view, different UI components fire actions for the controllers to handle.
- **Controller:** The controller acts as an interface between the Model and View Component to process all the incoming requests, perform business logic, manipulate data by using the Model and render the output into the views.

## 5.2 Installation Manual

In order to make use of our software there are a few steps to be followed.

1. Make sure to have XAMPP installed On your computer. If not, follow this link to download: XAMPP
2. Clone the GitHub repository from this URL: [Professional-Practice-Management-System](https://github.com/Professional-Practice-Management-System), or directly download the project files.
3. Make sure to clone/move inside the htdocs folder under the XAMPP directory structure.

4. Open XAMPP and start MySQL and Apache server. When running, they will be listening on specific ports.
5. Go to localhost/phpMyAdmin or any database design tool (such as MySQL Workbench if already installed), and run the SQL dump that can be found under the Professional-Practice-Management-System folder. The database, together with all the tables and inserted records will be created.

### 5.3 Configuration Manual

Before accessing the system, some development variables need to be configured based on your environment.

The file for the database configuration can be found under '\_\_\_\_\_' directory and is named db\_conn.php. Inside this file, these constants are defined to acquire the connection:

HOST – \_\_\_\_\_

USER – \_\_\_\_\_

PASS – \_\_\_\_\_

DB – \_\_\_\_\_

If the database schema name provided was not modified, change only the USER and the PASS fields, providing your MariaDB's credentials.

After completing the above installation and configuration steps, you should be able to run the system by entering this link on the browser: \_\_\_\_\_

### 5.4 User Manual

This system is intended to be used by the following types of users: Administrator, Student, PP Professor, University, Business, Career Office. To enter the system as one of the users, you can use the following credentials:

1. Admin – username: \_\_\_\_\_, password: \_\_\_\_\_
2. Student– username: \_\_\_\_\_, password: \_\_\_\_\_
3. PP Professor– username: \_\_\_\_\_, password: \_\_\_\_\_
4. University– username: \_\_\_\_\_, password: \_\_\_\_\_
5. Business – username: \_\_\_\_\_, password: \_\_\_\_\_
6. Career Office – username: \_\_\_\_\_, password: \_\_\_\_\_

You can also enter the system as a guest and you will have access only to the public pages.

## **5.5 Software Screenshots**