



System Requirements Specification (SRS) Project

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Project Specification

Project Proposal

Purpose and business need:

Giving everyone, whether they are a student or not, a chance to learn in their own setting as well as unifying and simplifying the overall online experience for universities.

Customers/Users:

Schools and public sector who are looking for an easy adoption educational e-Learning platform. Students that may literally 'attend' classes and complete coursework at any time, from anywhere.

Goals and objectives:

Enhance the quality of learning and teaching. Meet the learning style or needs of students. Improve the efficiency and effectiveness. Improve user-accessibility and time flexibility to engage learners in the learning process.

Business requirements:

Main functionalities include staff adding courses to the platform, universities adding their own courses for their students and implementing video conferencing and chat for live online lectures.

Constraints and special issues:

Possible constraints are the lack of time for completing the project as well as the cost of the project going over the project's estimated budget.

Risks and obstacles to success:

Possible problems are the lack of interested universities as well as finding professional staff for courses on our platform.

Feature details

Functional Requirements

Feature name: Registration

Role(s): Student, Academic staff, University

Feature description/steps:

1. The user will be given required and optional fields to fill out.
2. The user will be given option to register as Student, Academic staff, or University.
3. The user enters first and last name/University name, email address, password, repeat password.
4. The user will need to verify registration via confirmation link that will be sent to the provided email address.

....

Dependencies/constraints: All required fields must be filled out with valid information. Registration must be confirmed in order to continue.

Feature name: Login

Role(s): Student, Academic staff

Feature description/steps:

1. The user will be given email and password fields to fill out.
2. If users credentials are not valid display error message and ask the user to try again.
3. After entering correct information user can access the system.

Dependencies/constraints:

Users must be registered in order to login.

Feature name: Upload CV

Role(s): Academic staff

Feature description/steps:

1. In the staff's profile page there will be an option to upload a CV file. 2. The file can be changed and removed.
3. The CV must be reviewed by our own staff in order for the employee to become verified.

Dependencies/constraints:

Users must be registered as an Employee. File must be a pdf file.

Feature Name: Add course

Role(s): Academic staff

Feature description/steps:

1. In the Academic staff's profile page there will be an option to add a course.
2. The Academic staff will upload a course details file providing details about the course.
3. The Academic staff will upload course materials for students.
4. The Academic staff will upload the lecture schedule.

Dependencies/constraints:

The Academic staff must be a verified staff member by the university(if enrolled via university) in order to add courses to the system. The course details file must be a pdf file.

Feature Name: Enroll course

Role(s): Student

Feature description/steps:

1. Student will be able to enroll a course from the browse page by using course enrollment credits.
2. Enrolling in a course will give the student access to learning materials provided by the academic staff, course lectures and feedback from the staff.

Dependencies/constraints:

Student must have available course enrollment credits.

Feature Name: Browse courses

Role(s): Any user, registered or not

Feature description/steps:

Users will be able to browse courses on the browse page. Here they can find a variety of recommended courses as well as search for a course. Each course has a brief overview explaining what the course is about (in text or video form).

Dependencies/constraints:

User must be registered to see recommended courses.

Feature name: Video conferencing

Role(s): Student, Academic Staff

Feature description/steps:

1. Academic staff should be able to create video chat for meetings or lessons. 2. The video chat can be temporary or permanent.
3. Video chat for exams will be automatically created and deleted after the exam.

Dependencies/constraints:

The video chat can have a maximum of 200 participants per call.

Feature name: Chat

Role(s): Student, Academic Staff

Feature description/steps:

1. Students can message each other in course group chat
2. Students can message other students from the same university.
2. Students can message other students by adding them using their student tag.
4. Chat for lectures will be automatically created and deleted after the lecture.
5. Students can message academic Staff.

Feature name: Subscription selection

Role(s): Student, University

Feature description/steps:

Students can select from various subscription packages giving them access to a certain number of course enrollment credits(prices vary) which they can later use for course enrollment. Universities can also select a subscription plan for the university, giving access to the creation of a certain number of courses depending on the package as well as additional options in the form of the number of registered students

Dependencies/constraints:

Users must have valid payment info entered in the system to subscribe.

Feature name: Admin login

Role(s): Administrator

Feature description/steps:

1. Admin of LSM have a separate login form and from that position he can manage all users and their information easily.
2. If certain problems occur, the administrator can easily delete or immediately disable the work of a particular university, professor or student.

Dependencies/constraints:

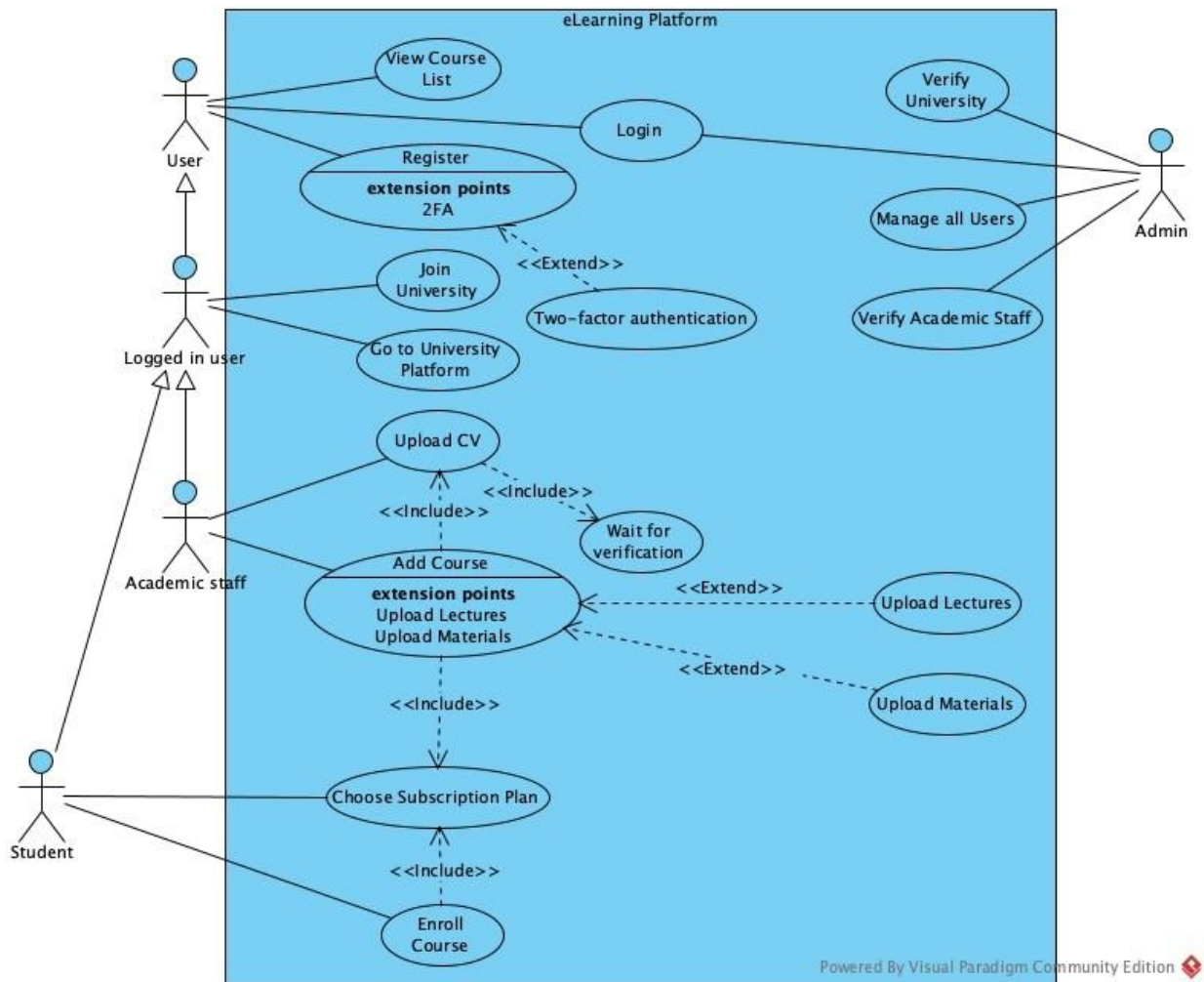
The admin data is entered directly into the database by the project owner, so no register is required.

Nonfunctional requirements

- Web-app must load completely in less than 3 seconds.
- The system should have a mobile app letting users access the system remotely.
- The video conferencing functionality must support up to 200 users in the same video call.
- Users will be able to customize the web-apps theme as well as the size of web app elements.
- After an update the database is up and going within 2 seconds.

Use Case diagrams

eLearning Platform diagram



eLearning Platform description

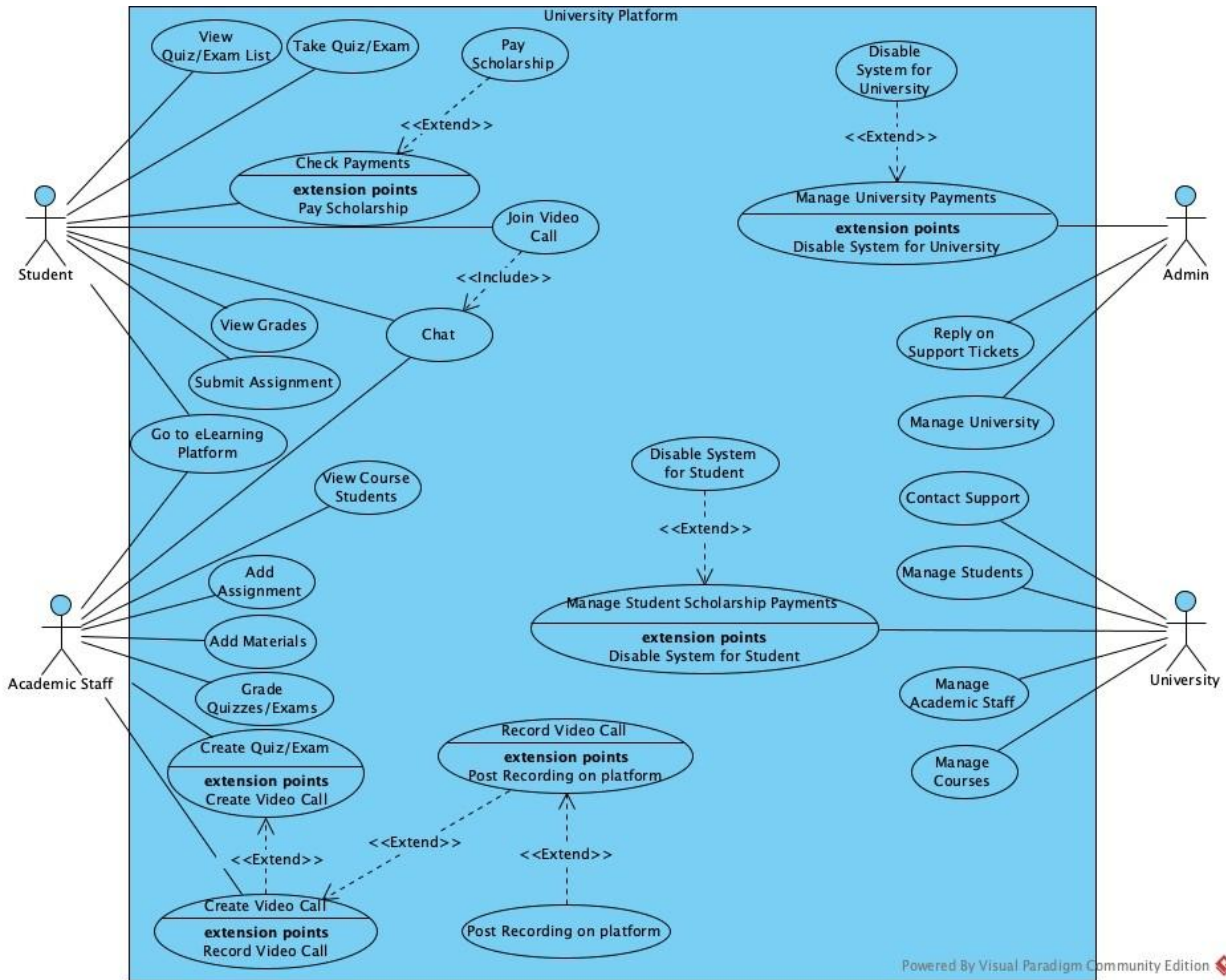
For our use case diagrams we went with two, one for the universal eLearning platform and one for the university system side of our website.

This is a use case diagram showing the available options for users and admins.

In the eLearning diagram we have users as actors divided into students and academic staff. We also have an admin that can verify academic staff and universities as well as manage all users. All users can view the course list, register and users that aren't logged in including admins can login. All logged in users can join universities or switch to the university platform. If academic staff upload a CV, they have to wait for verification. They can also add a course and if they do they need to choose a subscription plan and

they can upload lectures and materials optionally. Students can choose a subscription plan or they can enroll in a course and then they need to choose a plan.

University Platform diagram



University Platform description

This is a use case diagram showing the available options for students, academic staff, admin and university.

Academic staff have the options to go to eLearning platform, chat, view course students, add assignment, add materials, grade quizzes/exams, create a quiz/exam and if they create a video call they can record the call and post it to the platform.

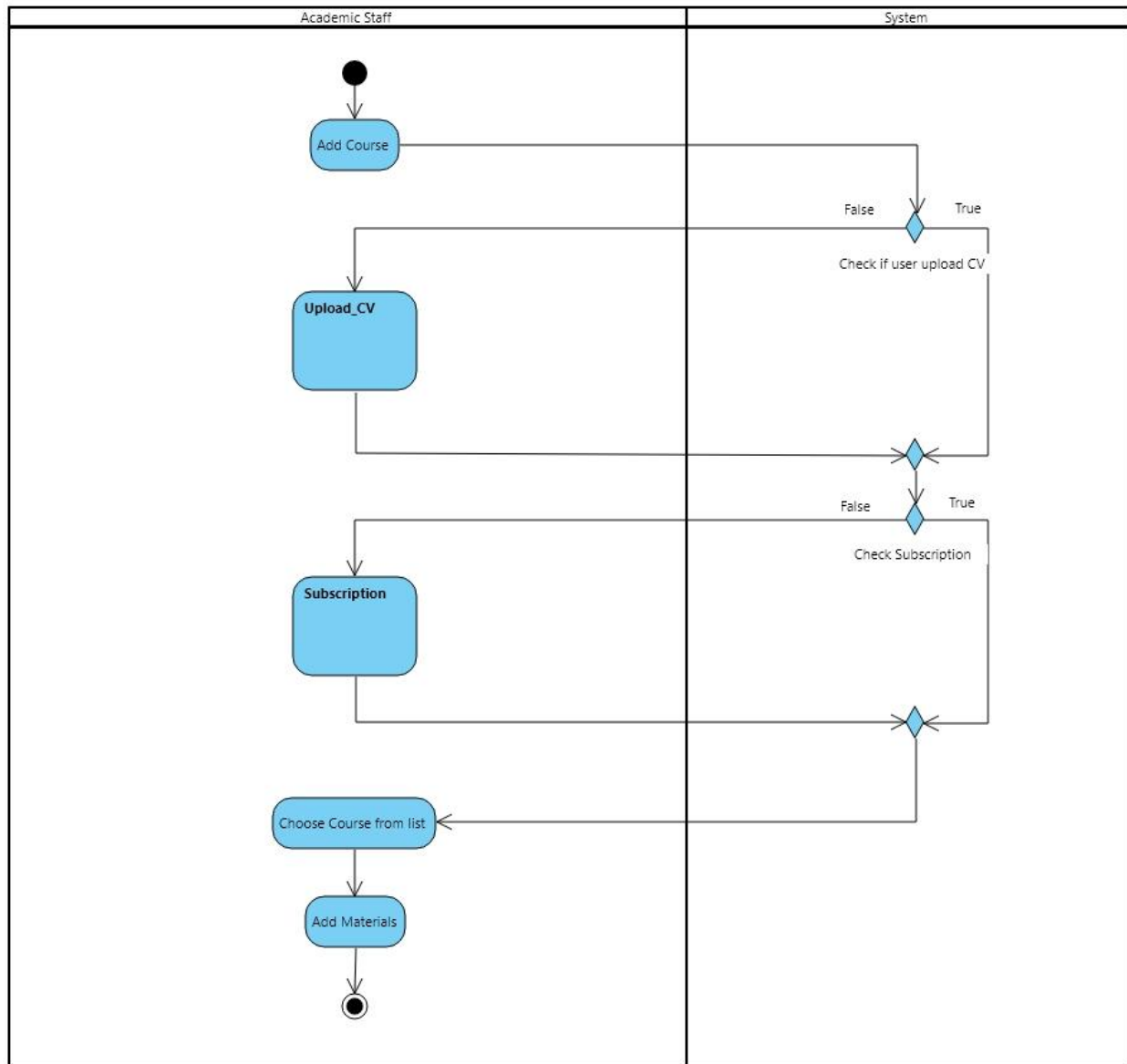
Students can go to the eLearning platform, view quiz/exam list, take quiz/exam, check payments with the option to pay scholarship, they can join video call that automatically creates a chat for the call. Students can also view grades and submit assignments.

Admins have the ability to manage universities, reply to support tickets and manage payments including the ability to disable the system for universities in case the payment hasn't been made.

Universities can manage courses, manage academic staff and students, contact support as well as manage student scholarship payments with the option to disable the system for students in case the payment hasn't been made.

Activity diagrams

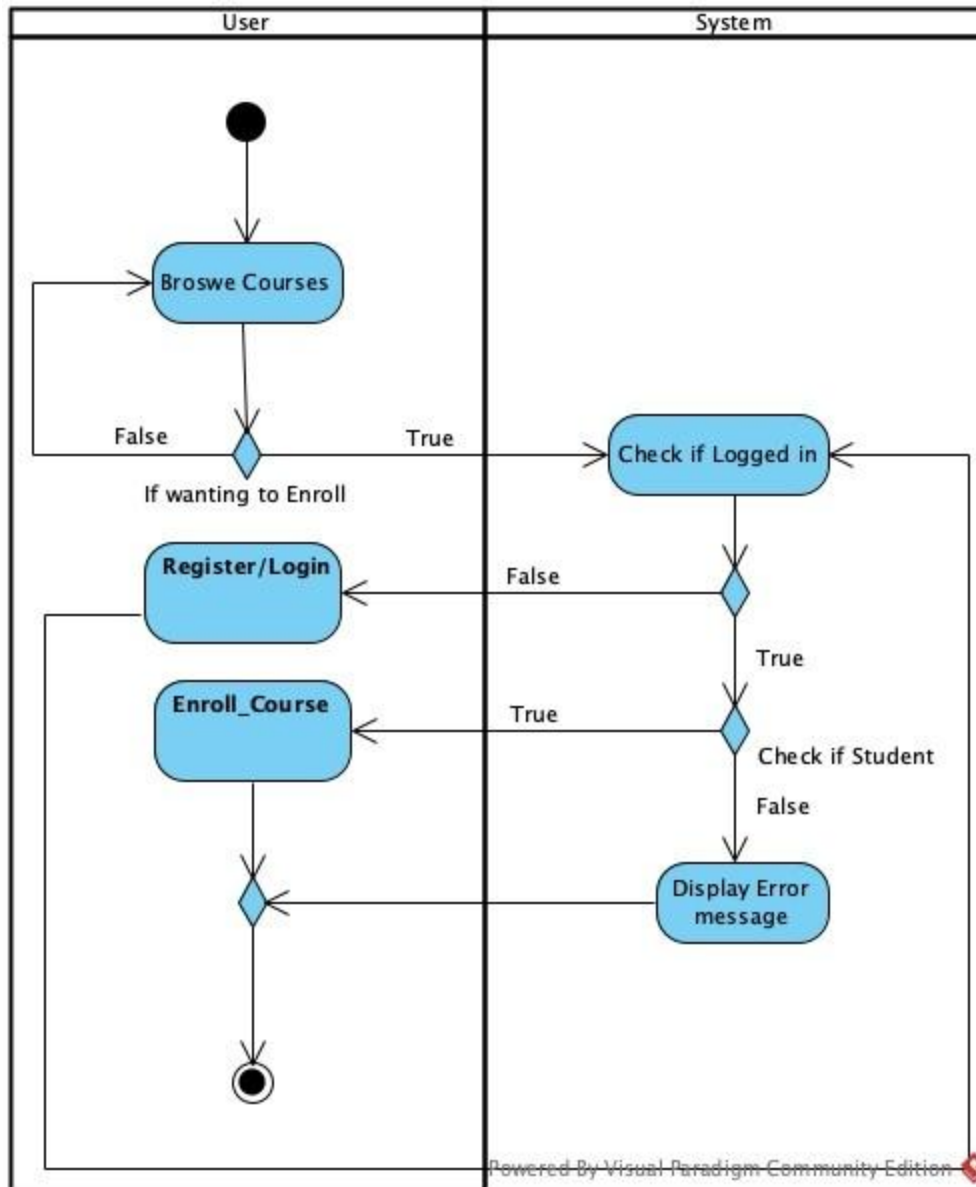
Add course diagram



Add course description

Academic staff have the option to add course. First it is checked whether the staff has a CV uploaded, if not they are prompted to upload it, if yes then the staffs subscription is checked. Again, if they do not have a subscription they are prompted to subscribe, if they do they can then choose a course from the course list and add materials for the course.

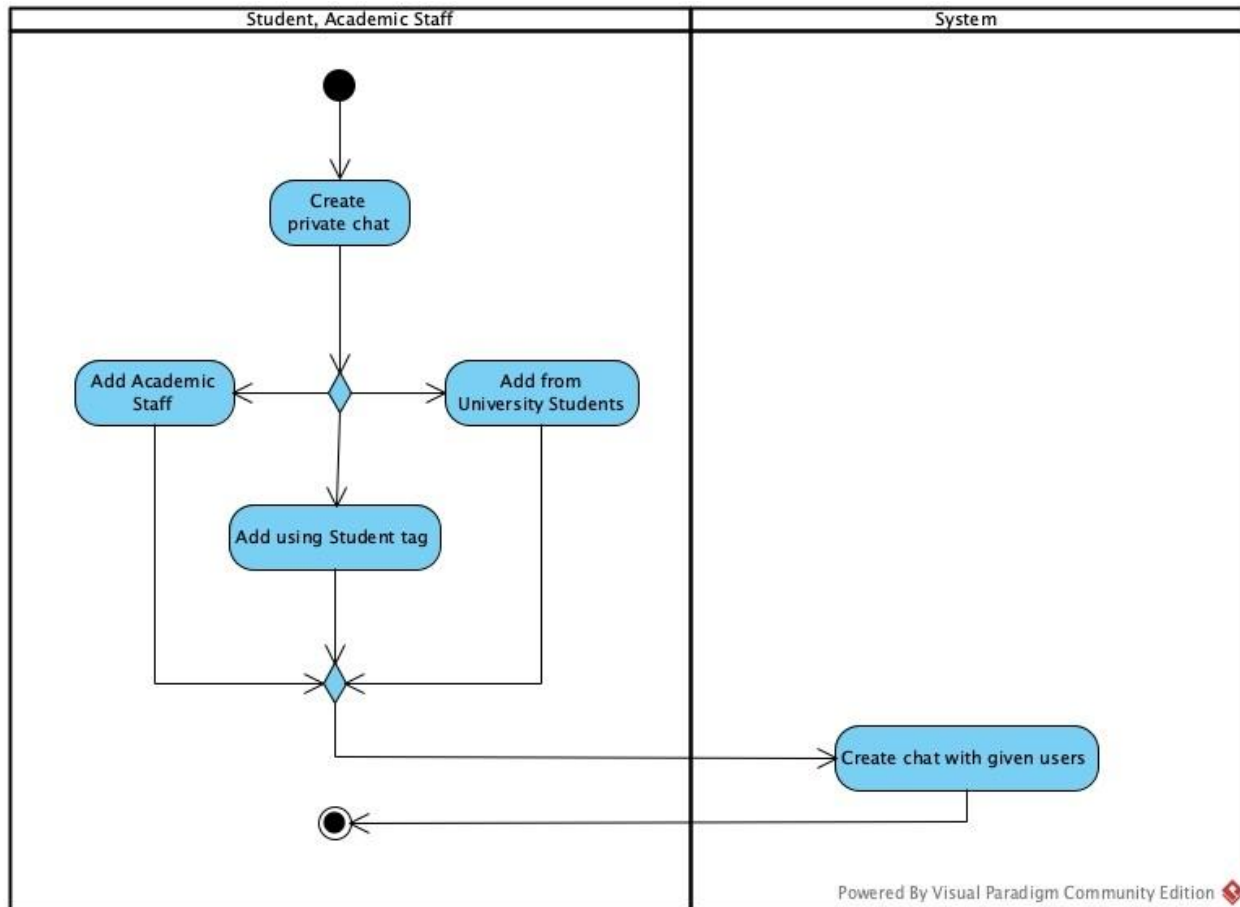
Browse courses diagram



Browse course description

When users are browsing for courses they have to option to enroll the course. If they wish to enroll they system first checks if the user is logged in, if not they can register or login and then go back to browsing, if they are the system checks if the user is a student. If they are a student they can then enroll the course and if they are not they get an error message.

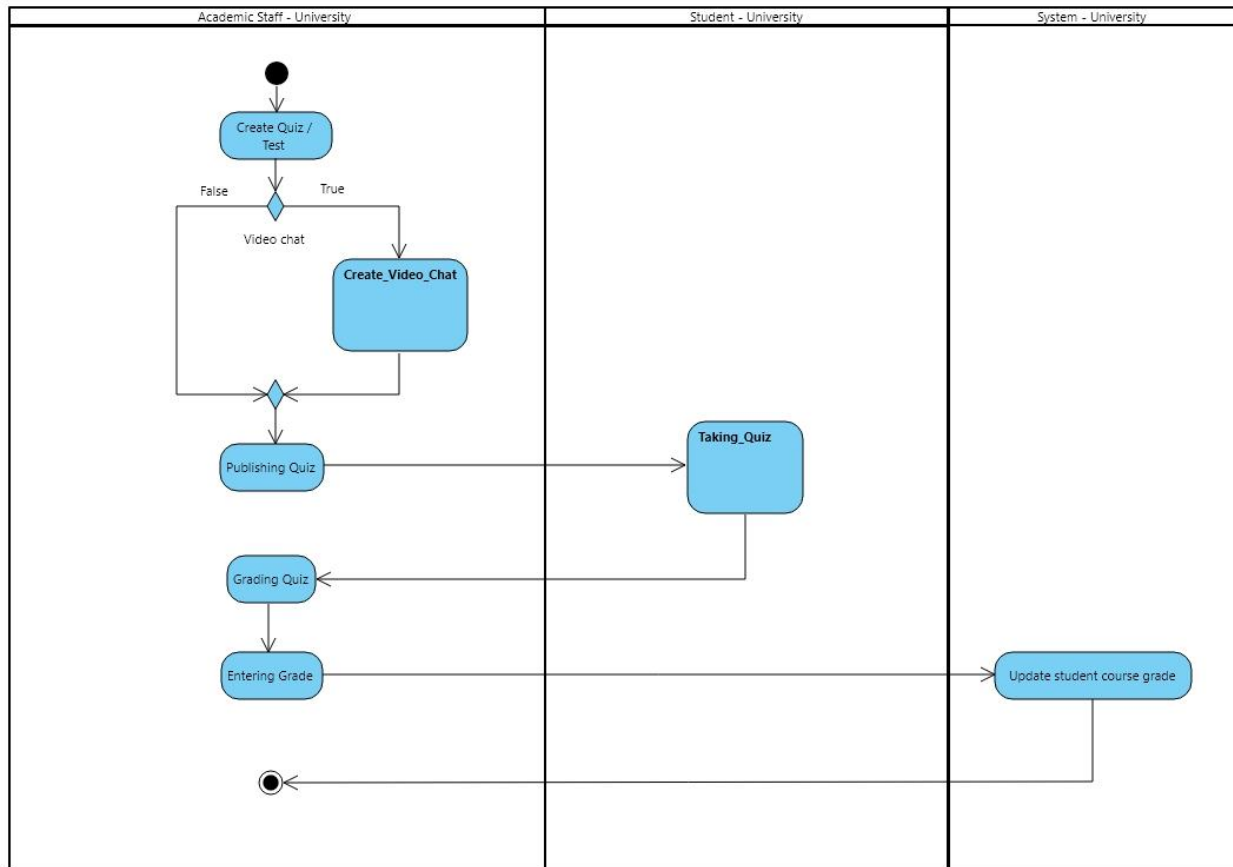
Create Chat diagram



Create Chat description

In this diagram students and academic staff can create a private chat by adding another member from the chat from the academic staff or the university students list. They can also add using student tags. After they choose members the system creates a chat with given members

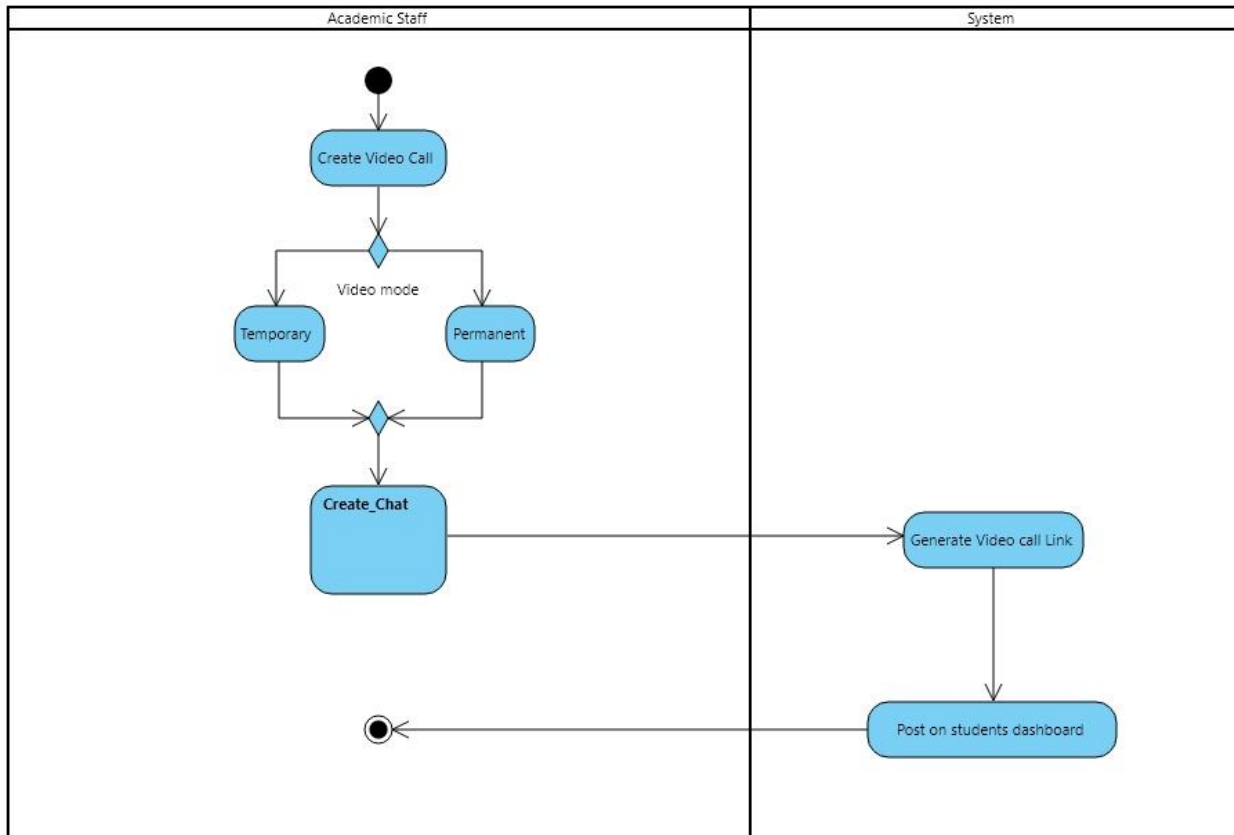
Create Quiz diagram



Create Quiz description

In this diagram the academic staff from universities can create a quiz/exam with the option to create a video call for the exam. The staff publishes the quiz and the student takes it. After the student is done the staff can grade it and enter the grade. The system then updates the student course grade

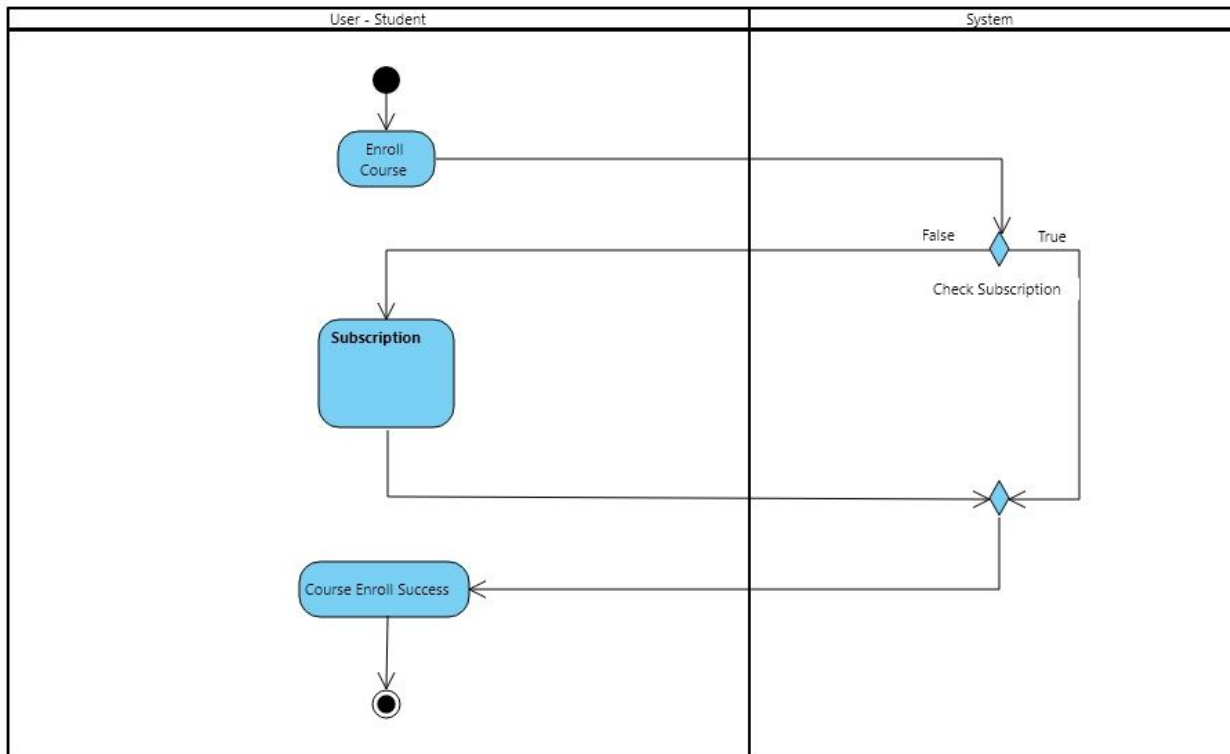
Create video call diagram



Create video call description

The academic staff can create a video call and when doing so they can select if they want the call to be temporary or permanent. The system then generates a link for the call and posts it to students dashboards.

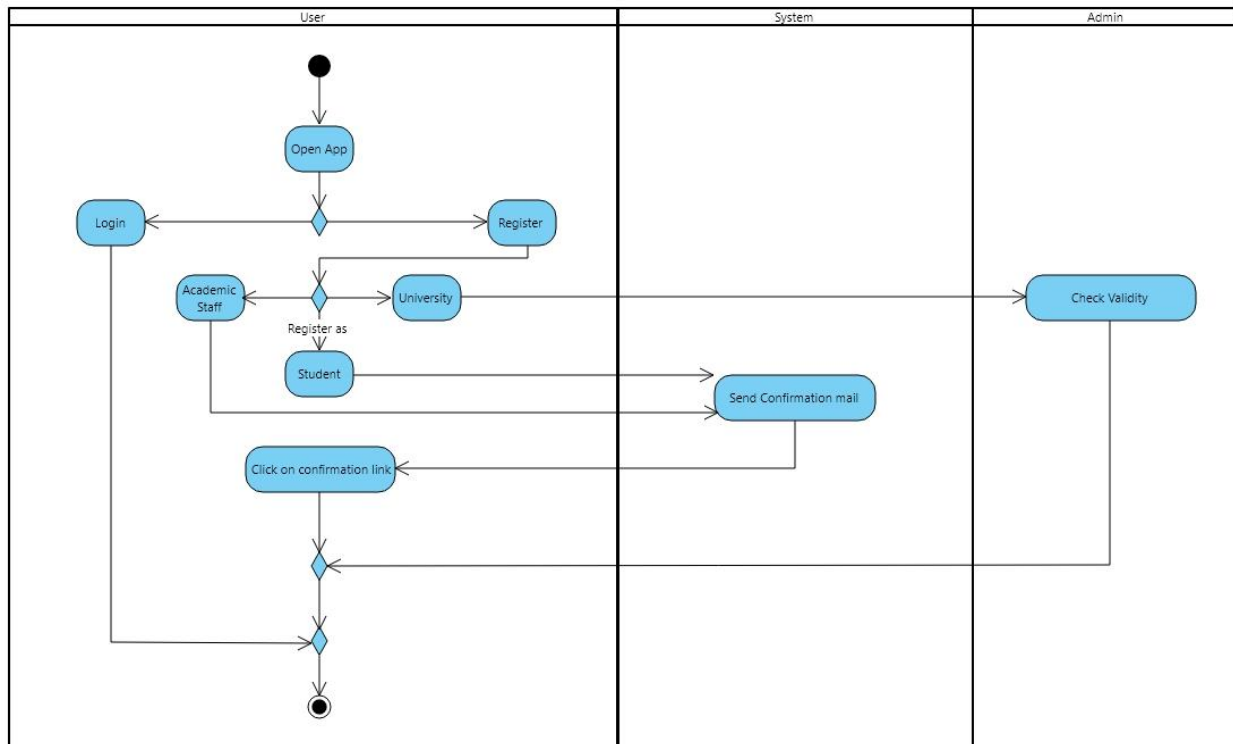
Enroll course diagram



Enroll course diagram

In this diagram students can enroll a course, the system checks if the student has a subscription, if they don't they are prompted to subscribe, if they do they have successfully enrolled to the course.

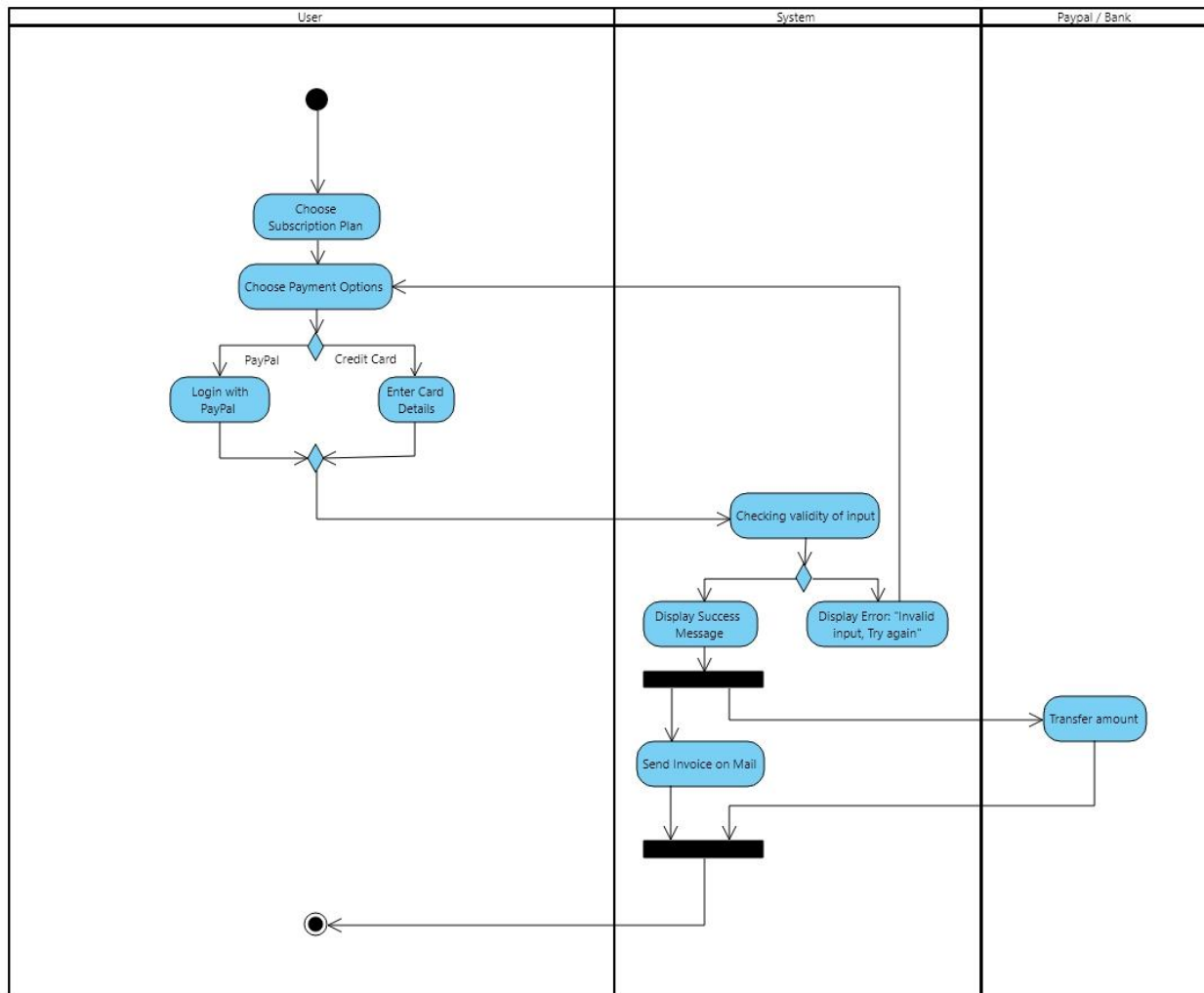
Register/Login diagram



Register/Login description

In this diagram the user has the option to register or login, if they select register they can choose if they are registering as academic staff, student or as a university. Each of these then goes through some sort of verification by the system or administrator.

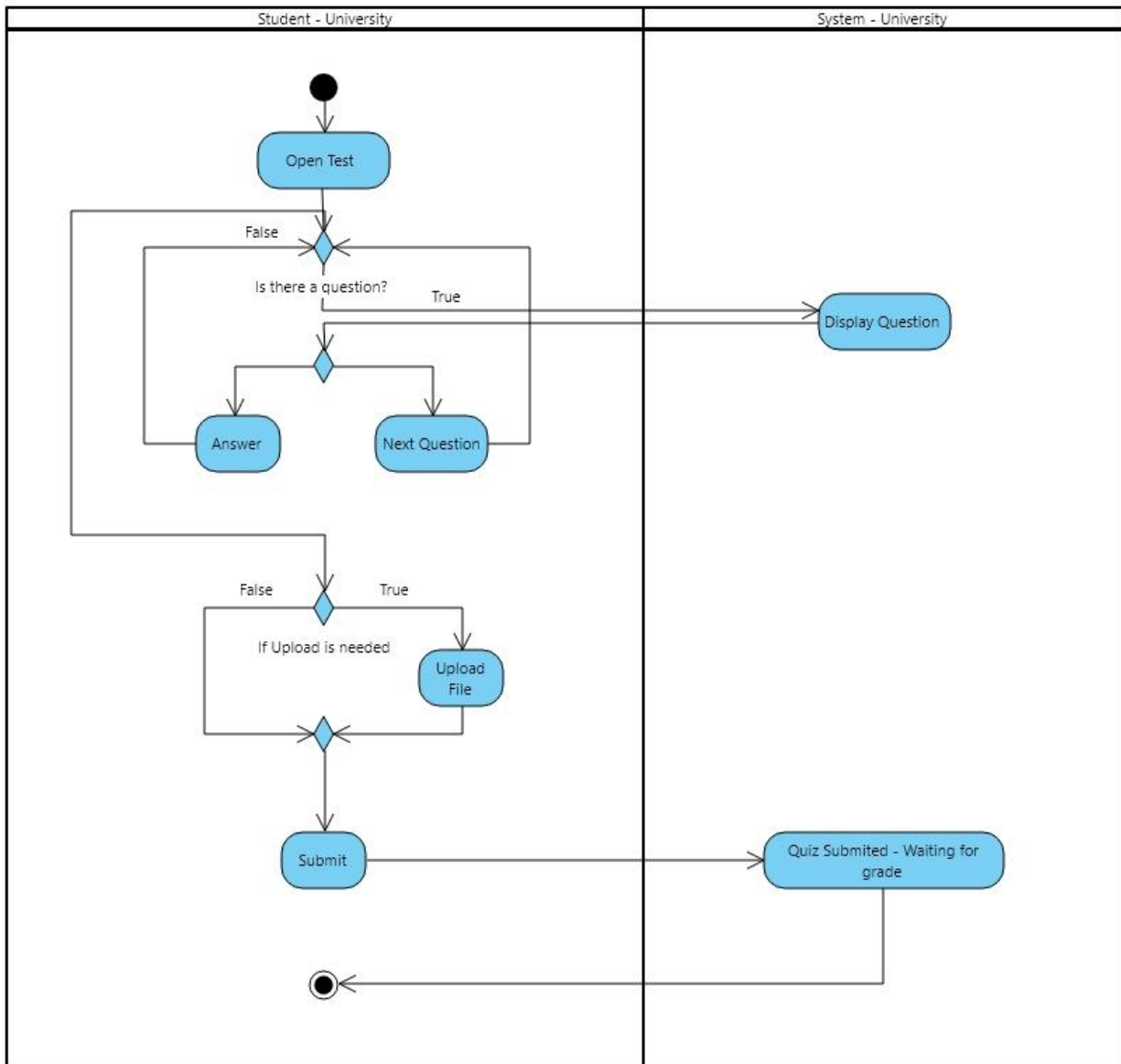
Subscription diagram



Subscription description

In this diagram the user selects and subscription plan after which they choose a payment option and enter payment details. The system checks the validity of the users input and depending on the outcome displays a success or error message. In case of success the payment option transfers the amount while the system sends invoice via mail.

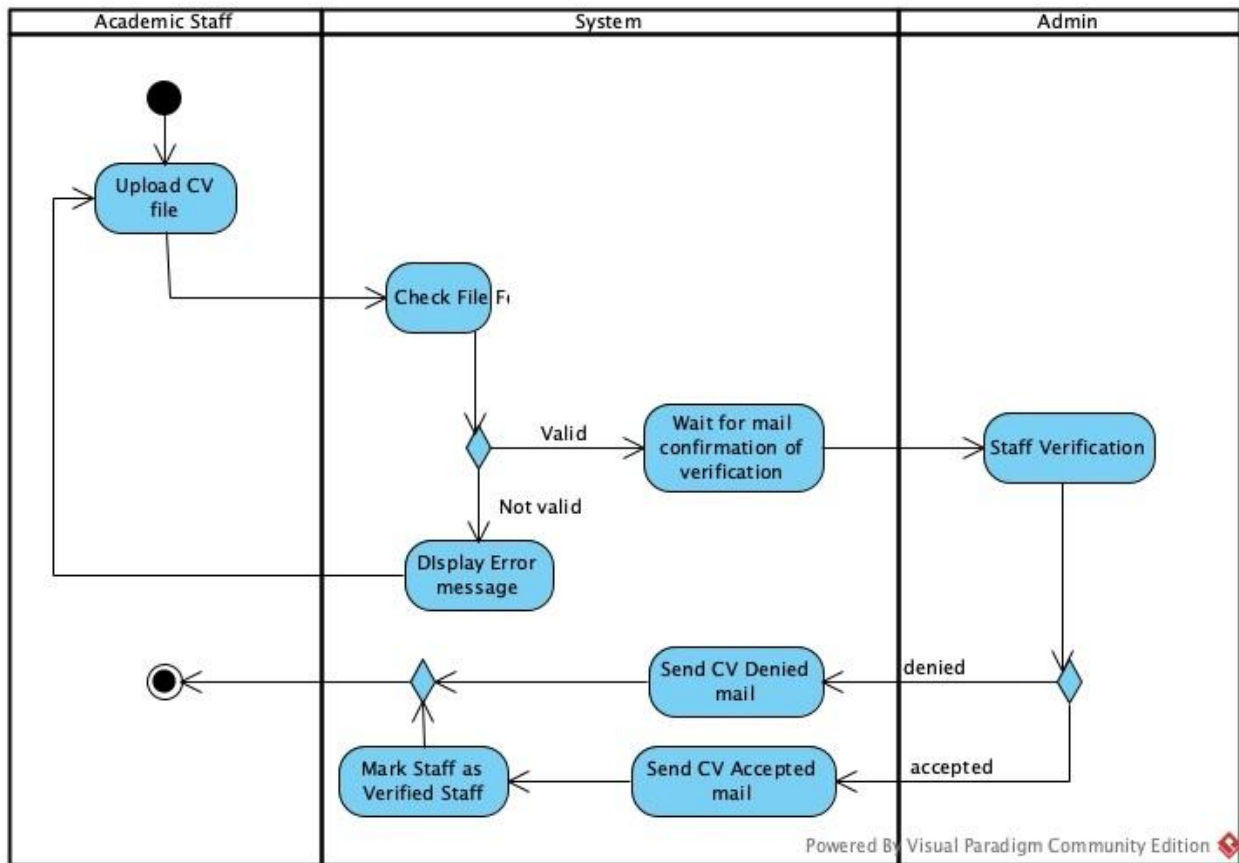
Taking quiz diagram



Taking quiz description

In this diagram a university student opens the exam and the diagram takes us through the student taking the quiz. After this the student can upload a file if needed and then submit the exam.

Upload CV diagram

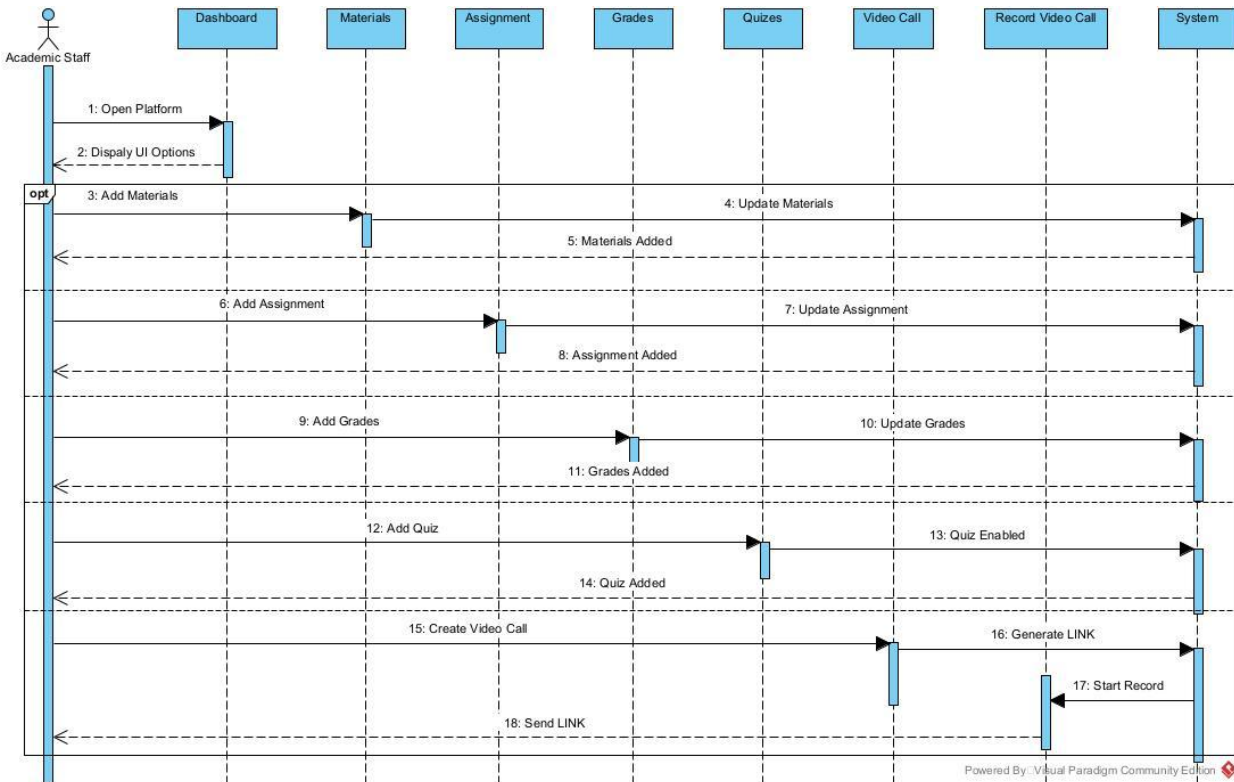


Upload CV description

In this diagram the academic staff can upload a CV. The system checks the file type and if it is valid the admin needs to accept or deny the CV. The system then displays an error or success message based on the admin's assessment.

Sequence diagrams

Academic dashboard diagram



Academic dashboard description

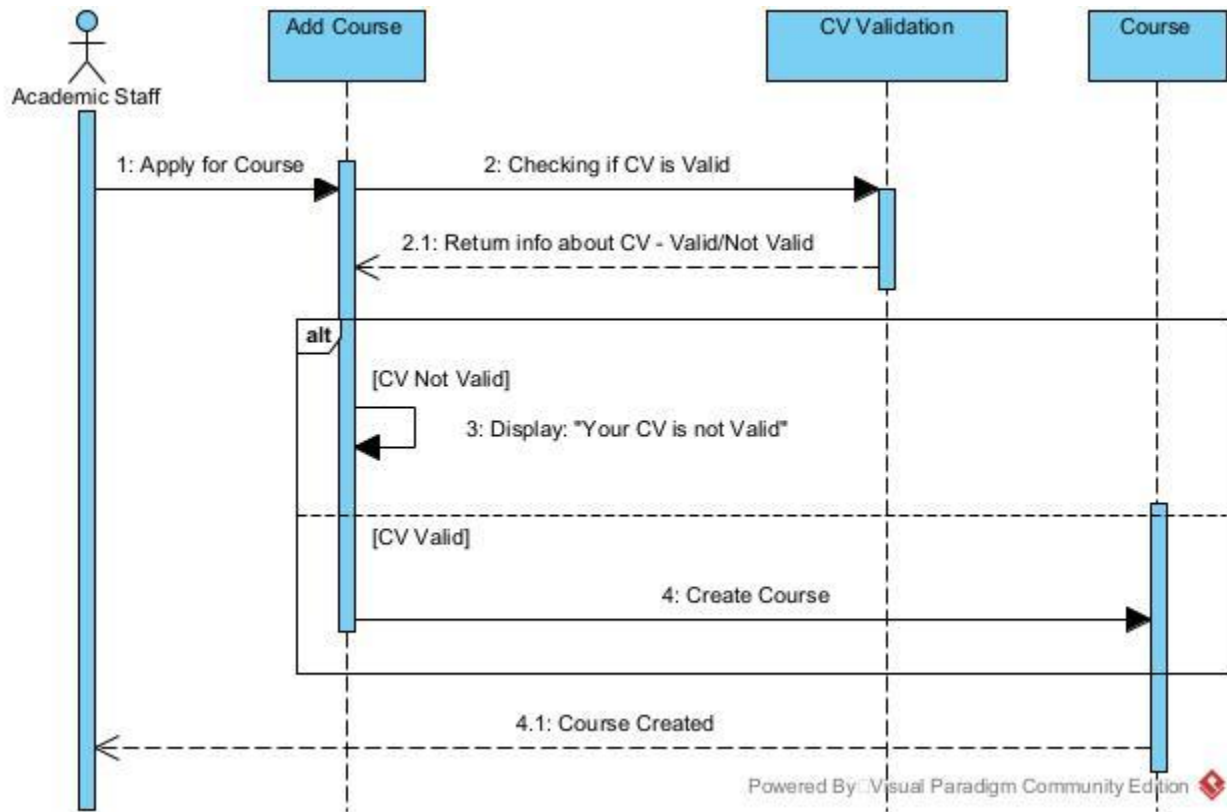
Academic staff have several options in the dashboard. He can choose to add materials, assignments, grades, quizzes or create a video call.

The user selects one of these options.

The only option that is fundamentally different from the others is creating a video call where the user creates a call, a link is generated, the call starts to be recorded and the link is sent back to the user.

Each other option is based on the user adding materials, assignments, grades or quizzes, the system updates them in the database and returns a message to the user that it has been successfully completed.

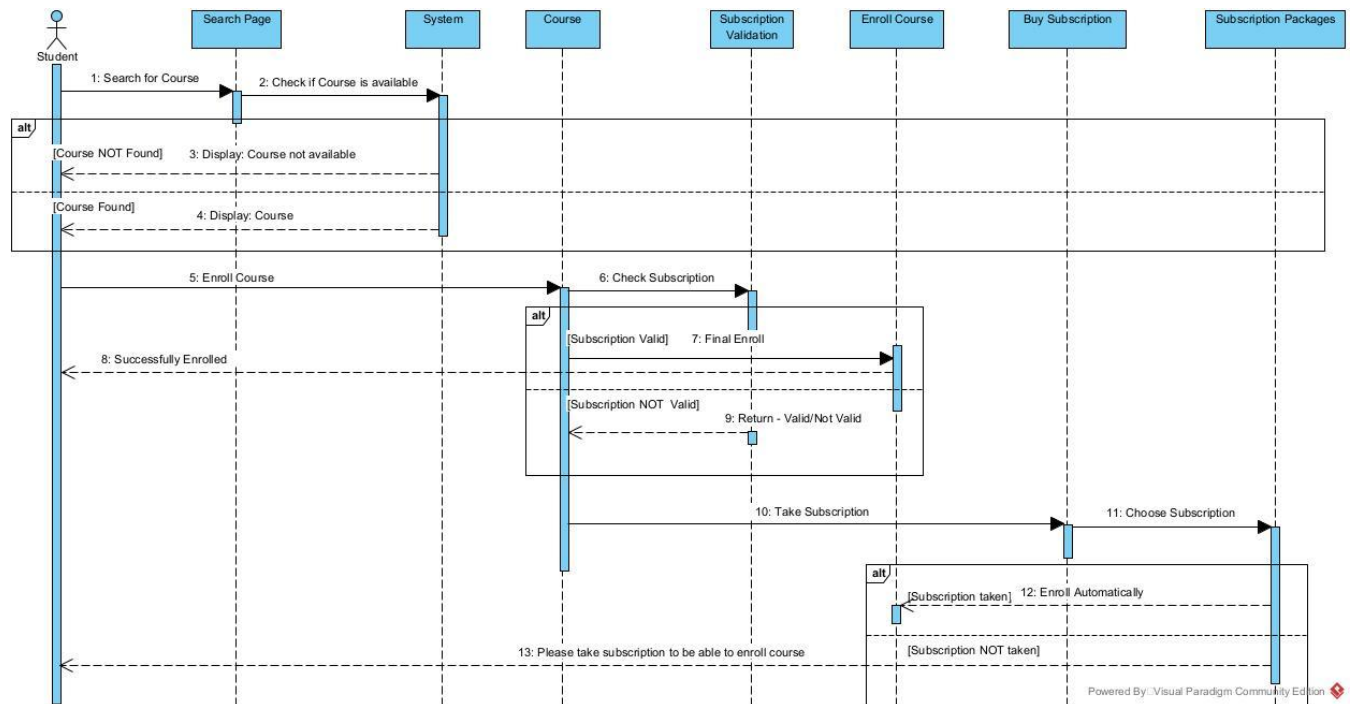
Add Course diagram



Add Course description

If the user(Academic Staff) wants to Add Course first System check his CV. If the CV is not Valid, the user gets a message "Your CV is not Valid", if the CV is Valid, Course is created and Course notification is sent to the user.

Enroll Course diagram



Enroll Course description

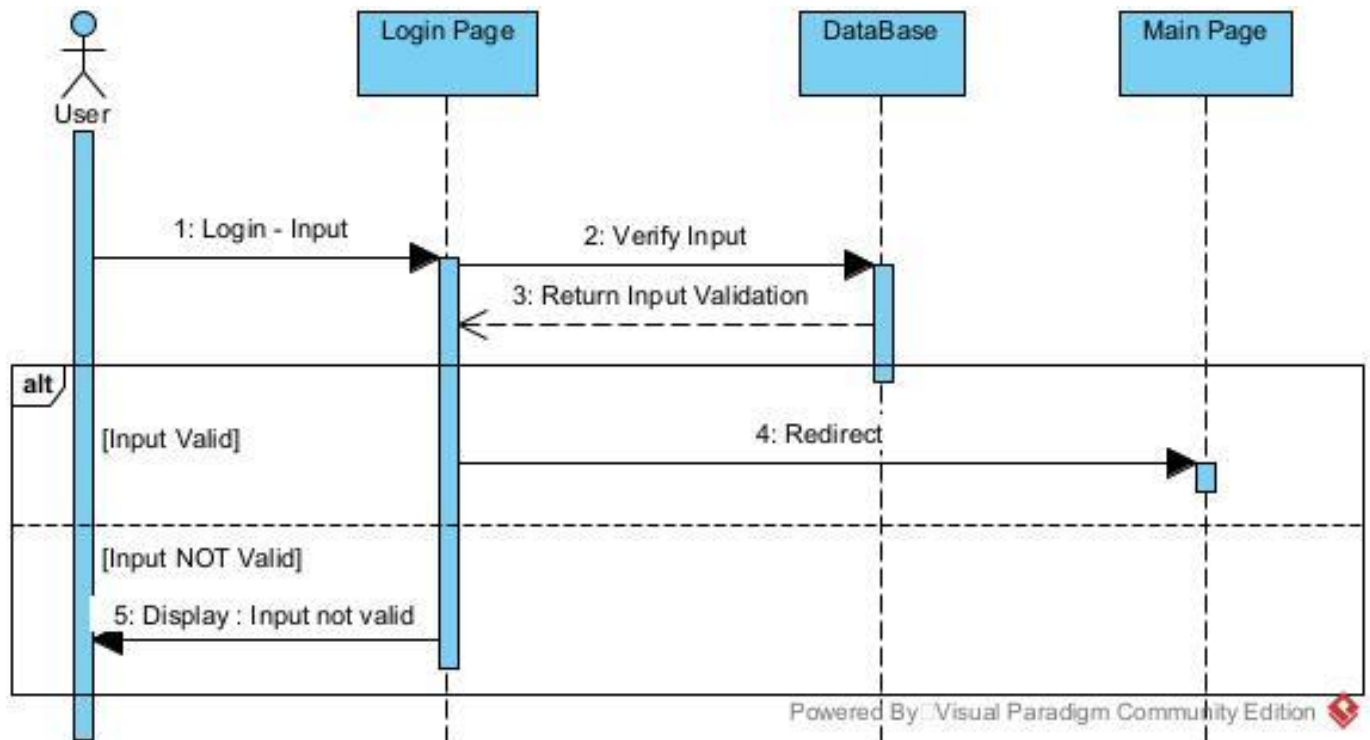
Here is shown the process of Enroll Course activity.

User first Search for desired Course.

After that Search Algorithm checks if the course is there.

If it is, it displays Course to User. Users choose to Enroll Course and then we check if User Subscription is valid. If it is User successfully enrolled in the course. If it's not, the user gets Message that Subscription is not valid and Automatically switches to Subscription Page. If a user chooses Subscription it gets automatically Enrolled, if not, User gets the message "Please take Subscription to be able to enroll in the course."

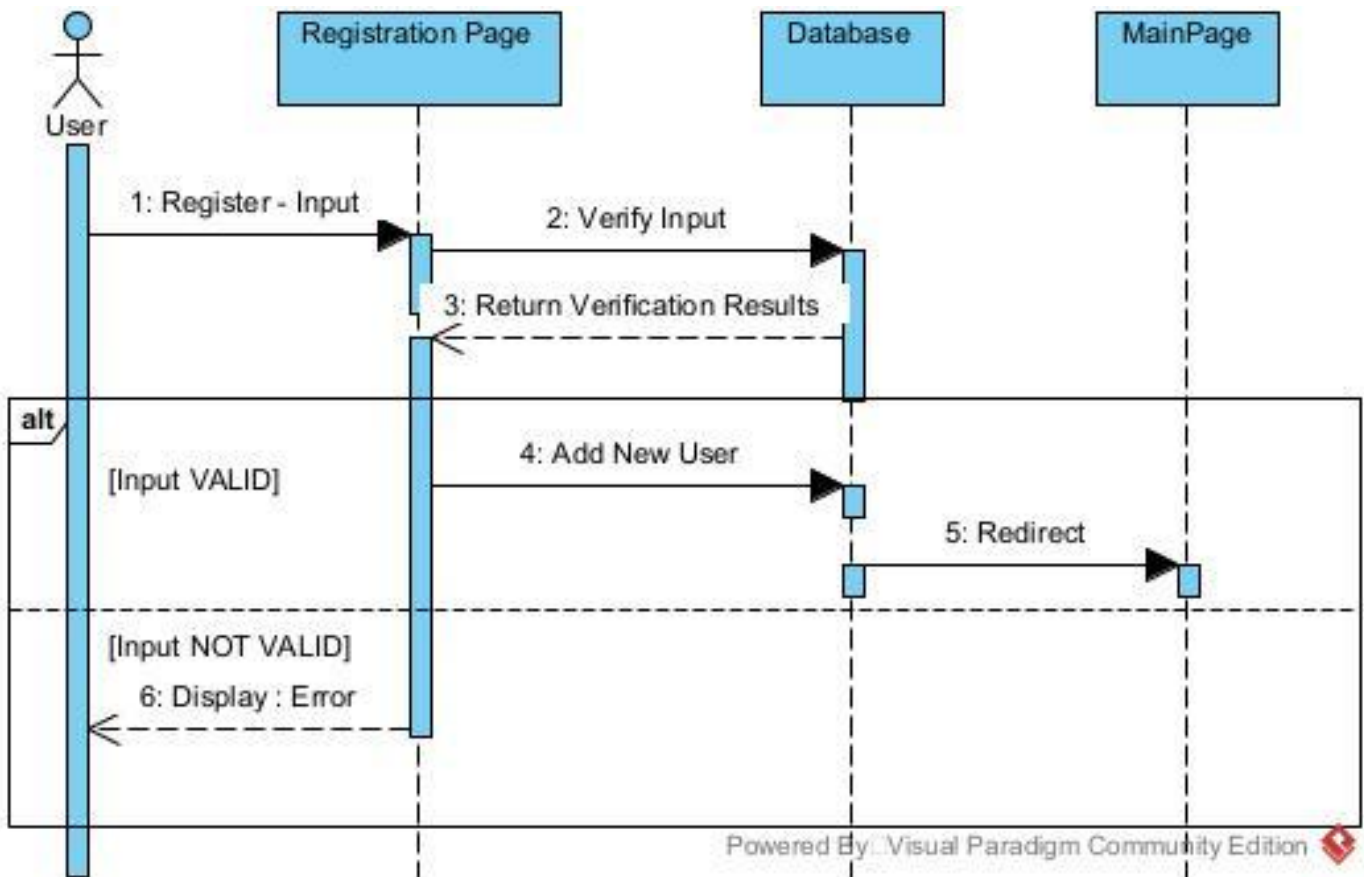
Login diagram



Login description

Same process as in Register, User enters Input, in Database we check if Input is valid, if User is logged in successfully, if not, user gets Error Message that Input is not valid.

Register diagram

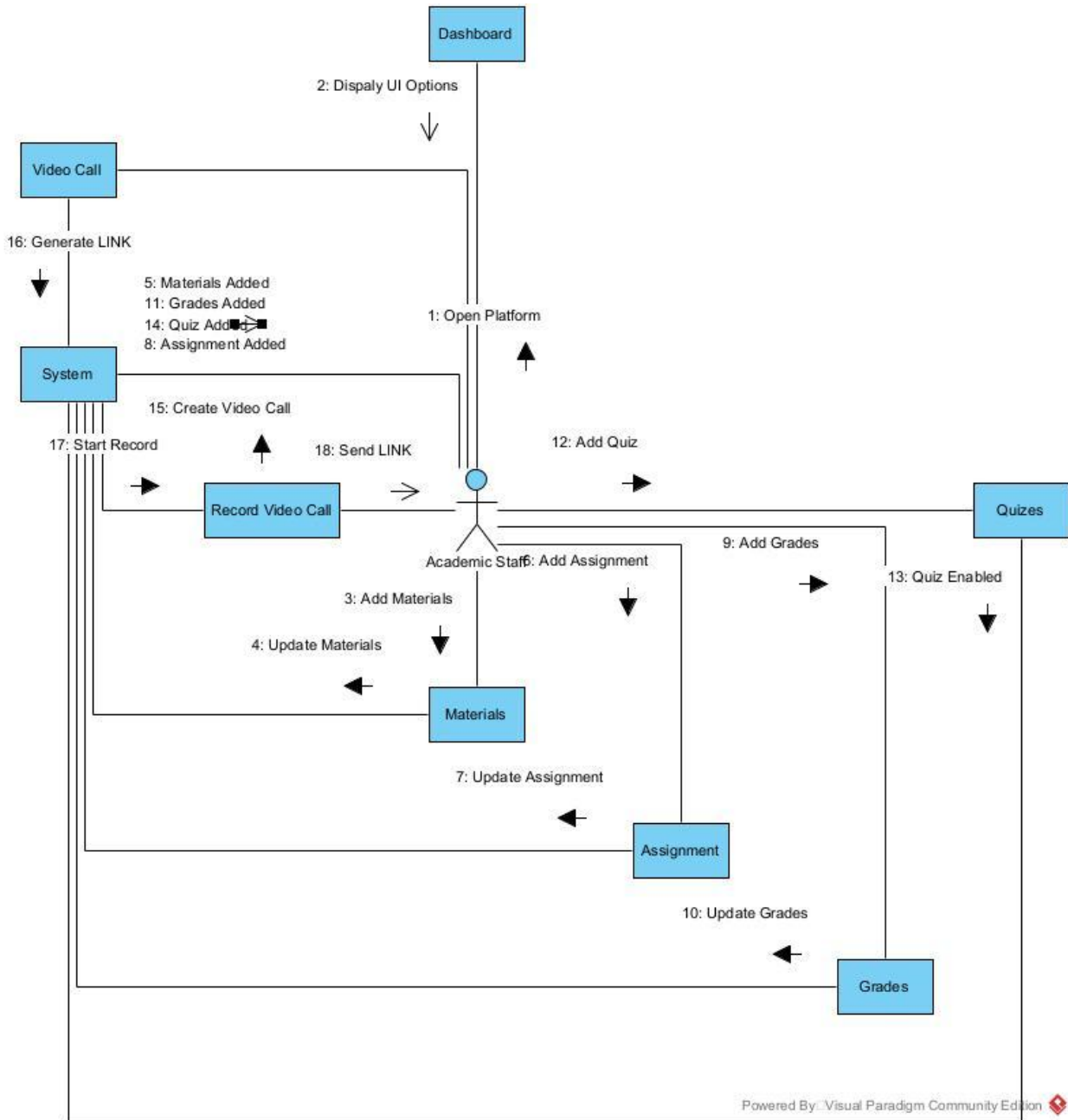


Register description

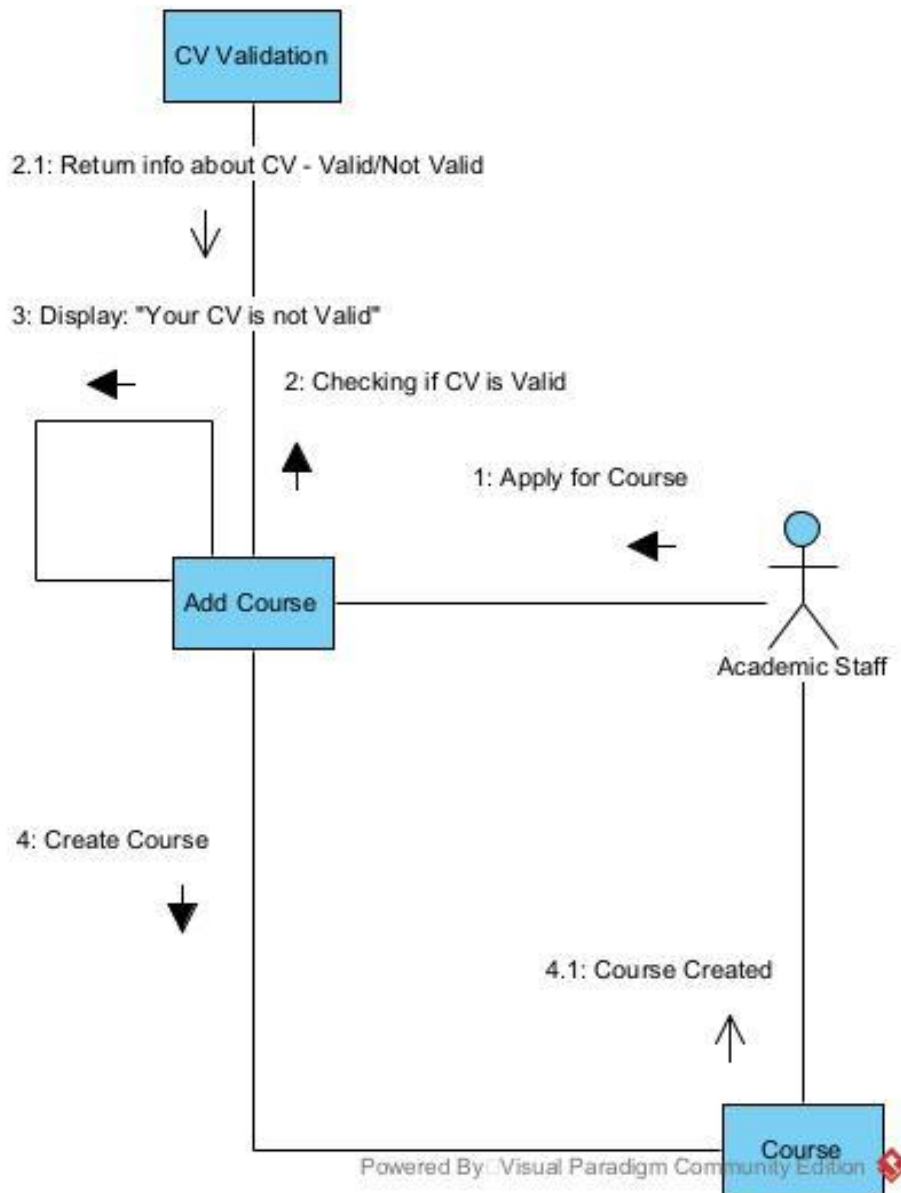
Here we have a registration process. User Input all info for Register tab, after that Input went to Database to check if everything is Valid (Ex. If Email is already registered) and return verification Results. If everything is good, the user is registered and redirected to the main Page, if it is not, User gets an Error Message.

Communication diagrams

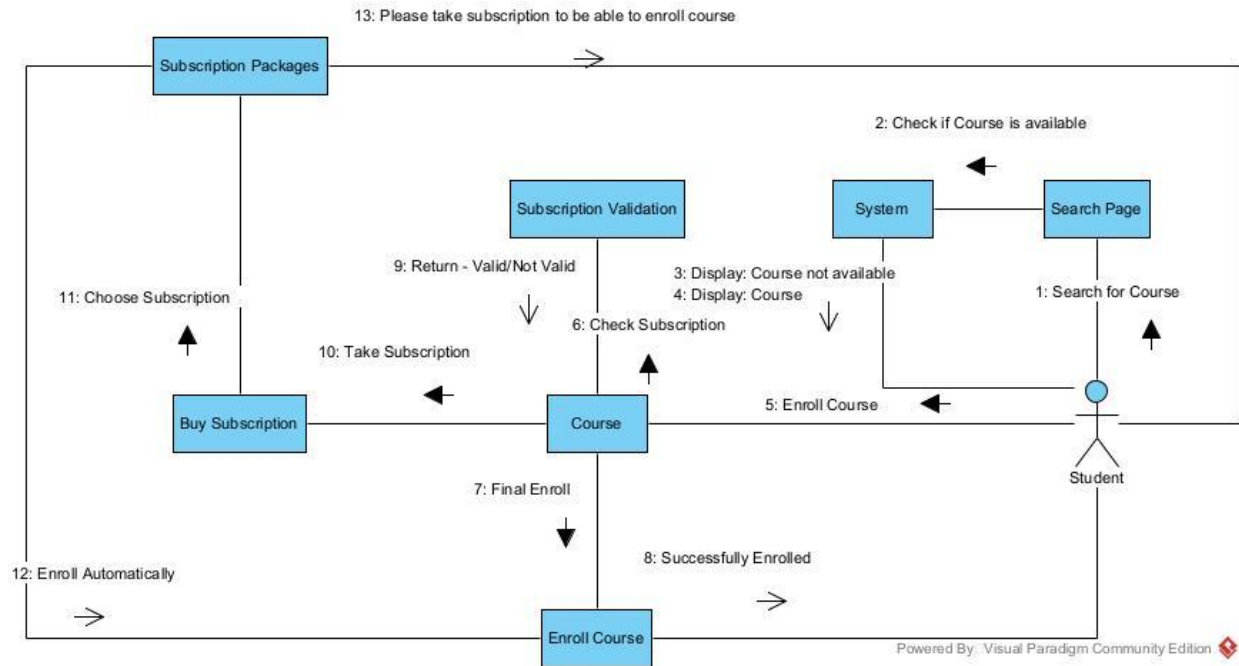
Academic dashboard diagram



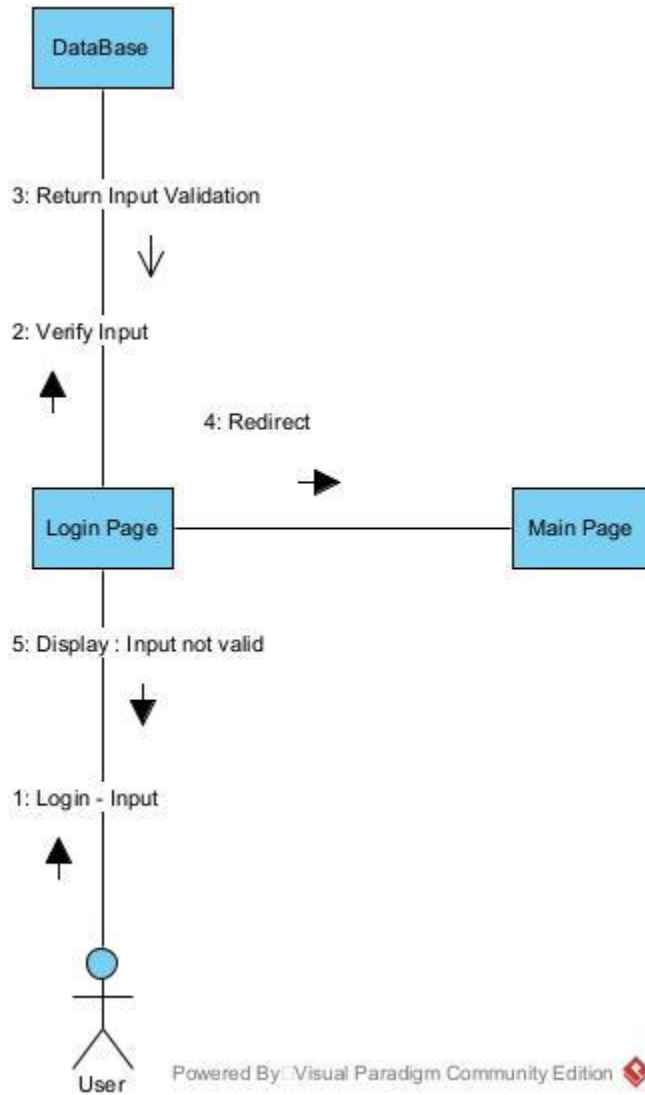
Add course diagram



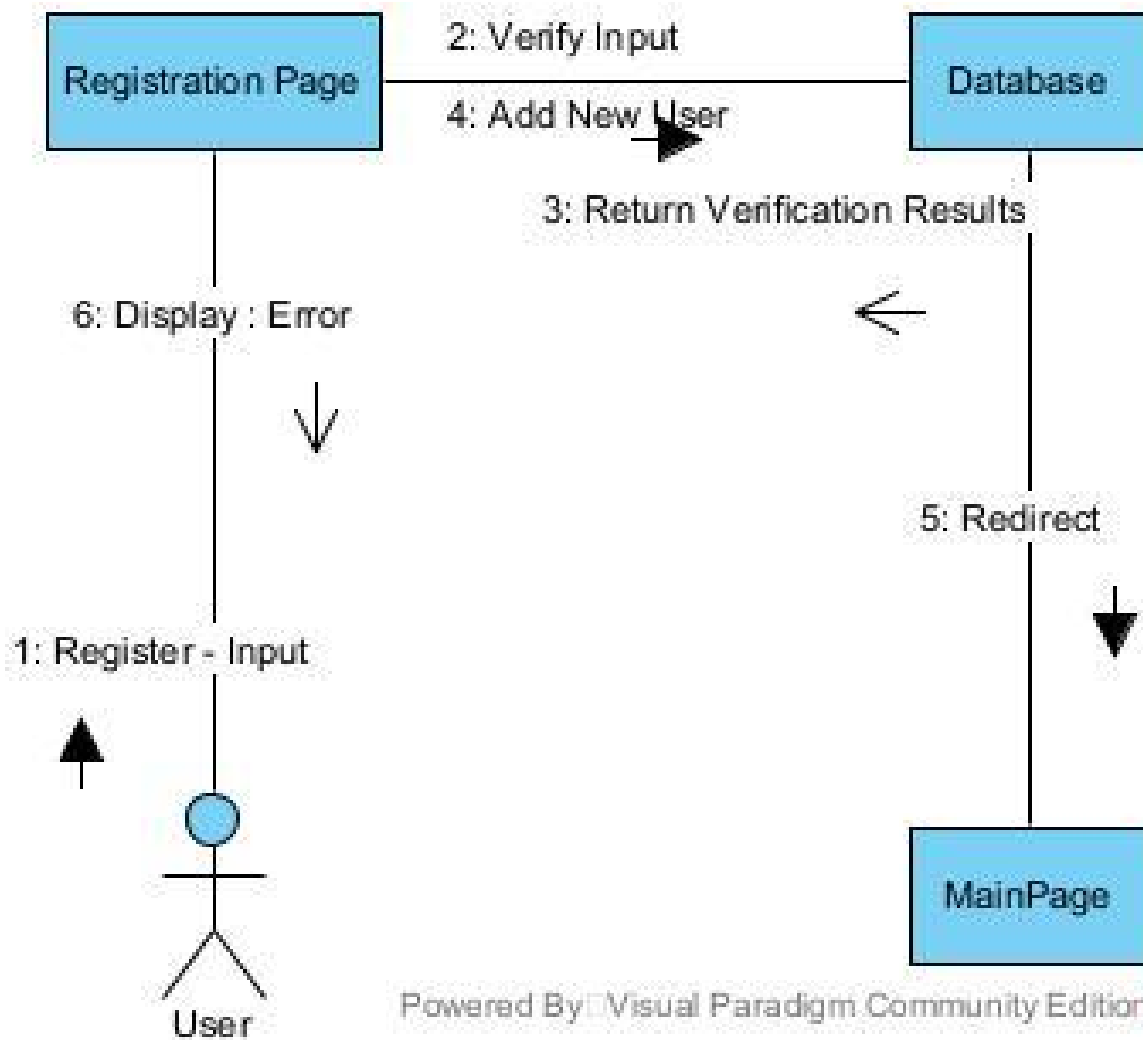
Enroll course diagram



Login diagram

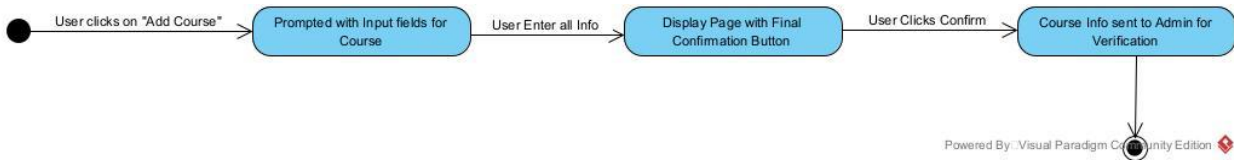


Register diagram



Behavior state diagrams

Add course diagram

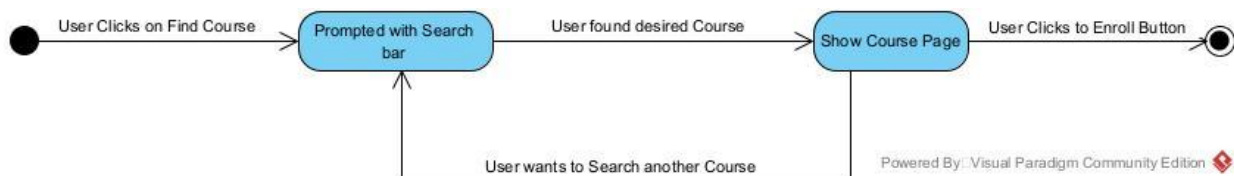


Add course description

When the user wants to add a course, in our case it is Academic Staff, after clicking Add Course he is offered fields that he must fill in related to the Course, eg Course Name, Description, Content, Price, etc.

When all entries and clicks continue, the user is shown an Overview page with all the information so he can check again before sending. After clicking Confirm, the request is sent to the administration for verification and thus the process is complete.

Enroll course diagram

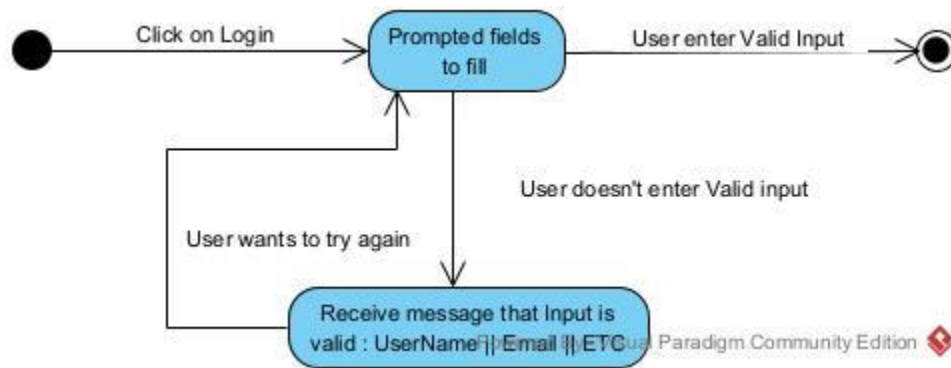


Enroll course description

If the user wants to enroll in one of the courses, he is first offered a search bar in which he enters the desired course name, if the course exists it is displayed to the user and after clicking Enroll the user successfully enrolls in the course and the process is complete.

If the enrolled course does not exist, the user has the opportunity to search for some of the courses again.

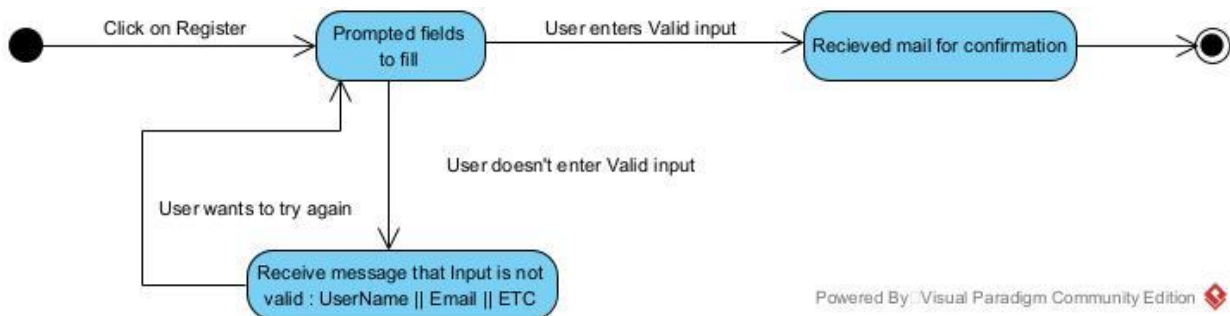
Login diagram



Login description

During the Login, the user is offered to enter the Login data, if the data is correct, the user is successfully logged in and this is the end of the process, if some of the data is incorrect, the user also has the opportunity to try again.

Register diagram



Register description

In the registration, the user is offered to fill in all the desired fields. If all fields are successfully filled in, the user receives a confirmation mail and this process is complete.

If one of the fields is filled in incorrectly, the user receives a message where the error is and has the opportunity to re-enter the data.

