

Title of the Project: Tutor Management System

System Description

Now a days, humans are too busy and in big cities they barely know each other. In the context of our country, we can see cities like Dhaka is highly populated. In this case, finding a good tutor for students is very difficult. We can see it depends on other's perspective to say a good tutor or a bad one as we tend to contact with our friends or colleagues or school teachers for the tuition. On the other hand there are so many good potential tutors are available but due to lack of connectivity they do not get the chance. Thinking of this issue, we were thinking to connect them and got inspired by the idea of tutor management system. Moreover, if successfully we can connect, not only the student and the tutor will get benefitted but also we can have small percentage of the payment and benefit ourselves which even motivated us to work on this project. In addition to that, we are thinking this as an opportunity to contribute on GDP with our business as this is a huge industry as there is an estimate in 2018 showing 29% of education goes for private tutor in Dhaka. If we can successfully provide our service, it will be a solid start for us. Furthermore, people don't have to go to ask a person for tutor and choose based on some good qualities rather they can now choose the best for them, and everything staying in one platform.

Thinking above circumstances, we get motivated and planned to start the project.

Requirements: For this project we need

- One project manager
- Developers to implement the system
- Initially cloud based database to store data and maintain it
- Buy few APIs
- A work force (support team, sys admin)
- An office space
- Logistics
- Advertisement costs
- IT support

System request

Project Sponsor: Humaira Mir Prothoma.

Business need: To make learning easier to students & find tutors easily. Requires no paperwork and help parents and students to manage tutors from one platform and helps tutors to find their student. No need to go to relatives, colleagues, or to others for asking if there is any tutor, yet choosing the desired tutor from a dedicated third party and decide based on needs. Professionally handles security issues and authenticate properly both tutors and students so that safety can be ensured.

Business Requirement: Using the web tutors and students will be able search each other by filtering each other's requirements. There will be provided a profile of the tutor. The tutor will be able to see the info of the student. If there are any changes in the student info or tutor profile it can be updated. A help desk will be provided to help people if they face any difficulties. The functionality the system should have:

- Student info
- Location of the student.
- Update info
- Tutor educational background/Tutor profile.
- Help desk
- Forgot password

Business Value:

We expect to improve service so that student's complaints reduce primarily and tutor selection should satisfy the student's needs.

- \$50000 from new customer
- \$20000 from existing customer
- Expense of the employees - \$10000

Special issues or constraints:

- For now the services are limited in Dhaka. After getting enough funds we will be able to expand throughout the country.
- Calibration of security measures, for example, the provided security papers need to be authenticated and justified from proper authority.
- Proper load balance of the software's server and database and providing top level scalability.
- Finding best tutors for quality service and customer satisfaction.

Requirement analysis

Functional Requirements

1. Register & login

- 1.1 The system will allow new tutors to register by creating an account
- 1.2 The system will verify the tutors information by NID
- 1.3 The system will also allow parents & students to open an account
- 1.4 This system will allow user to create maximum one account per person

2. Search & Communicate

- 2.1 The students and tutors can search for a tuition by their preferences
- 2.2 The system will let user communicate with each other for better negotiation
- 2.3 The system will provide assistance through text and FAQ panel

3. Rating System

- 3.1 The students and guardians can rate a tutor based on the performance
- 3.2 All the users can rate our system
- 3.3 The system will update rating into their profile after someone rates them

4. Records

- 4.1 The system will keep track of reviews of the users
- 4.2 The system will sort the tutors by their experience and quality (from high to low)
- 4.3 The system will recommend the tutors by their reviews to students

Non-Functional Requirements

1. Operational

- 1.1 The system should run on smart phones, tabs and PC.
- 1.2 The system should be able to connect to internet
- 1.3 The system should be able to run on any operating system

2. Performance

- 2.1 There should not be any faulty information
- 2.2 The help desk has to be active
- 2.3 The system should refresh after every 30 seconds
- 2.4 The system should be able to show the information within 5 seconds after requesting
- 2.5 The database should be able to update automatically

3. Security

- 3.1 The system will not let a user to view information of other user

- 3.2 The system will let the user login if the information is correct
- 3.3 The system will not let to create any fake accounts

4. Culture and Political

- 4.1 The system will ensure that the users are from various places of Dhaka

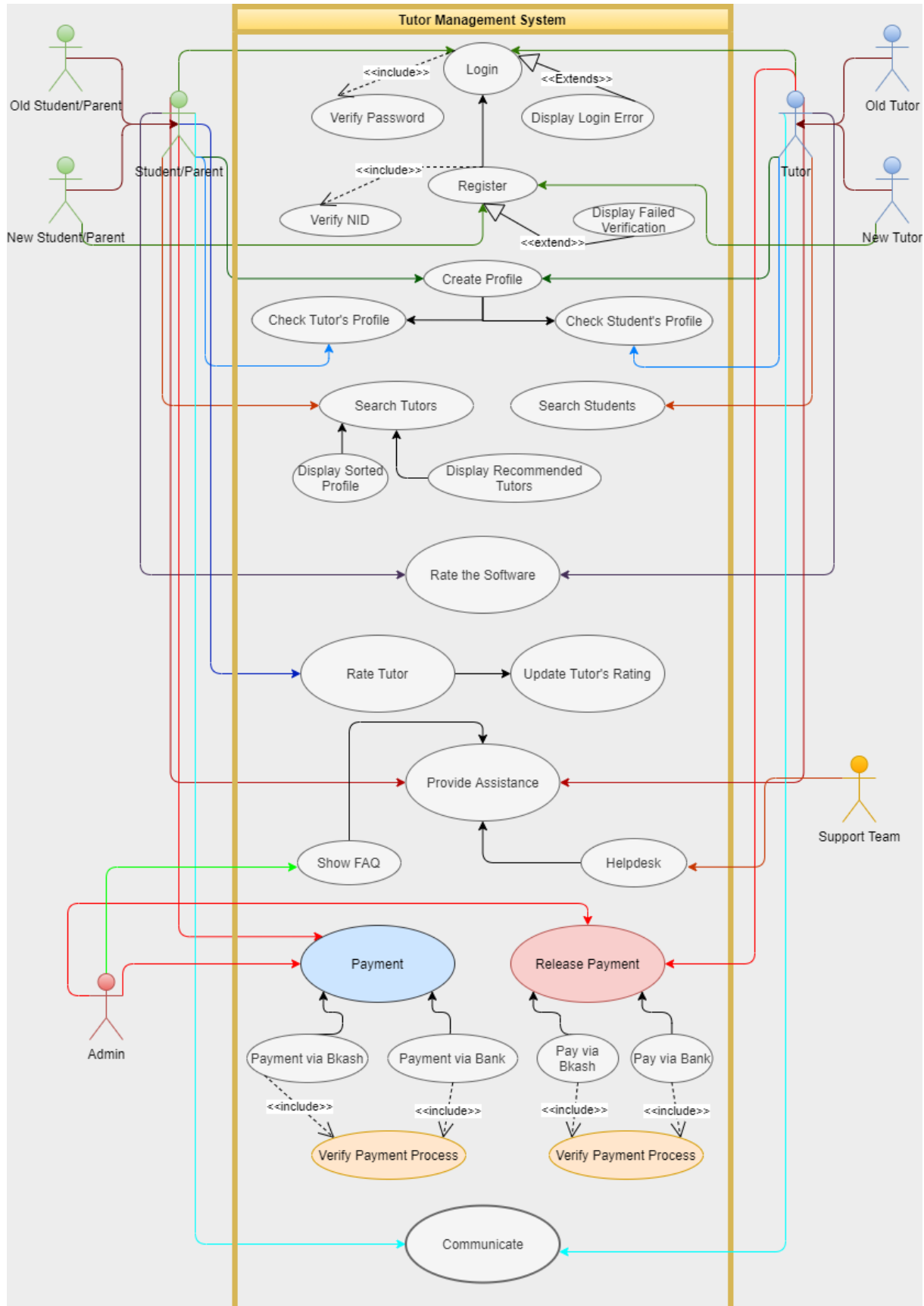
Use Case Diagram

For this use case, there is an actor as Student/Parent. Student/Parent has two related actor. One is old Student and another is new Student. Student/Parent will login through login panel and the password will be verified and if any error occurs it will show the login failure prompts. The new Student/parent can register through the register panel and it will verify the NID and if any error occurs it will prompt the register failure. Student can create their profile and check the tutor's profile to find if he is right for them or not. After creating profile as student/parent, it will take them to tutor's profile to find best match. Student/Parent can search the tutor from search panel and it will list the tutor in a sorted manner from high experience and rating to low. The search option will have an option for recommended tutor list where it will automatically generate the best match for the student based on location, expertise and rating. Student/Parent can rate the software and give feedback for improvements and they can rate tutors and it will update the tutor's rating. Student/Parent can seek for support where they will be prompted for FAQs and for help desk support. They can choose any of them. When best match will be found, they can communicate with the tutor. Finally, they can pay for their tutors and choose various payment methods for the process and the payment method will be verified after choosing them.

There is another actor as Tutor. Similar to Student/Parent it has two related actor. The old one and the new one. Old tutor can login and their password will be verified and if any problem occurs, the login failure will be prompted. The new tutor can register and their NID will be verified and upon any error the failure message will be prompted. Tutor can create their profile and after selecting as a tutor the system will take them to check student's profile to find best match. Tutors can also search for the students. Tutor can rate the software and give feedback for improvements. Tutor can seek for any kind of support likewise students/parents and the will be prompted to choose FAQs and help desk support as a similar fashion. Upon finding the students, they can communicate with each other. Finally, Tutors can collect their payments when it will be deposited by Parents/Students and can choose various methods of payment process and their payment method will be verified after choosing one.

There is an actor as Admin who will process the payment and collect the payments from Student/Parent actor and deliver to Tutor actor. Admin will handle and update the FAQs.

Another actor is Support Team, who will work for help desk and provide support to any necessary assistance.

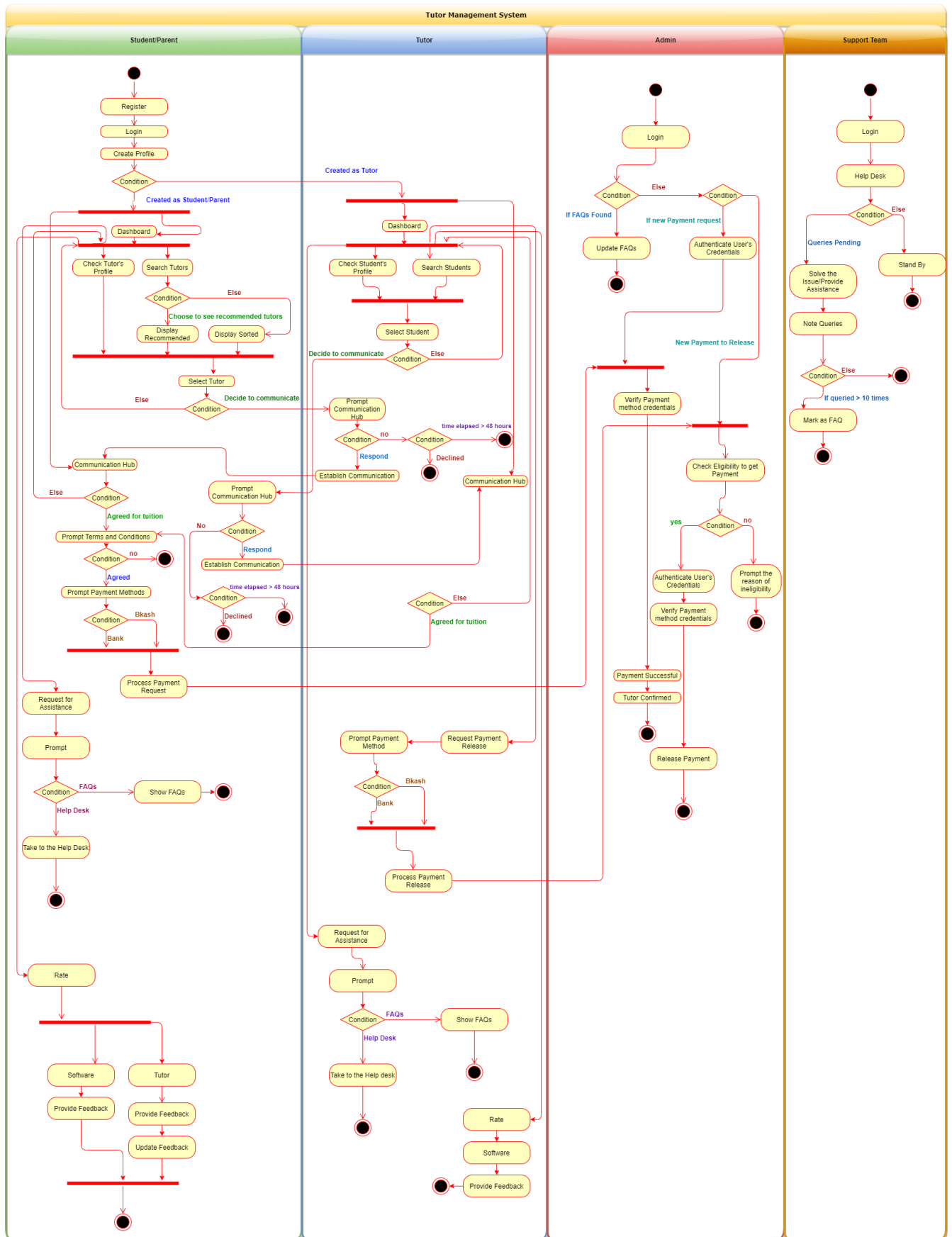


Activity Diagram

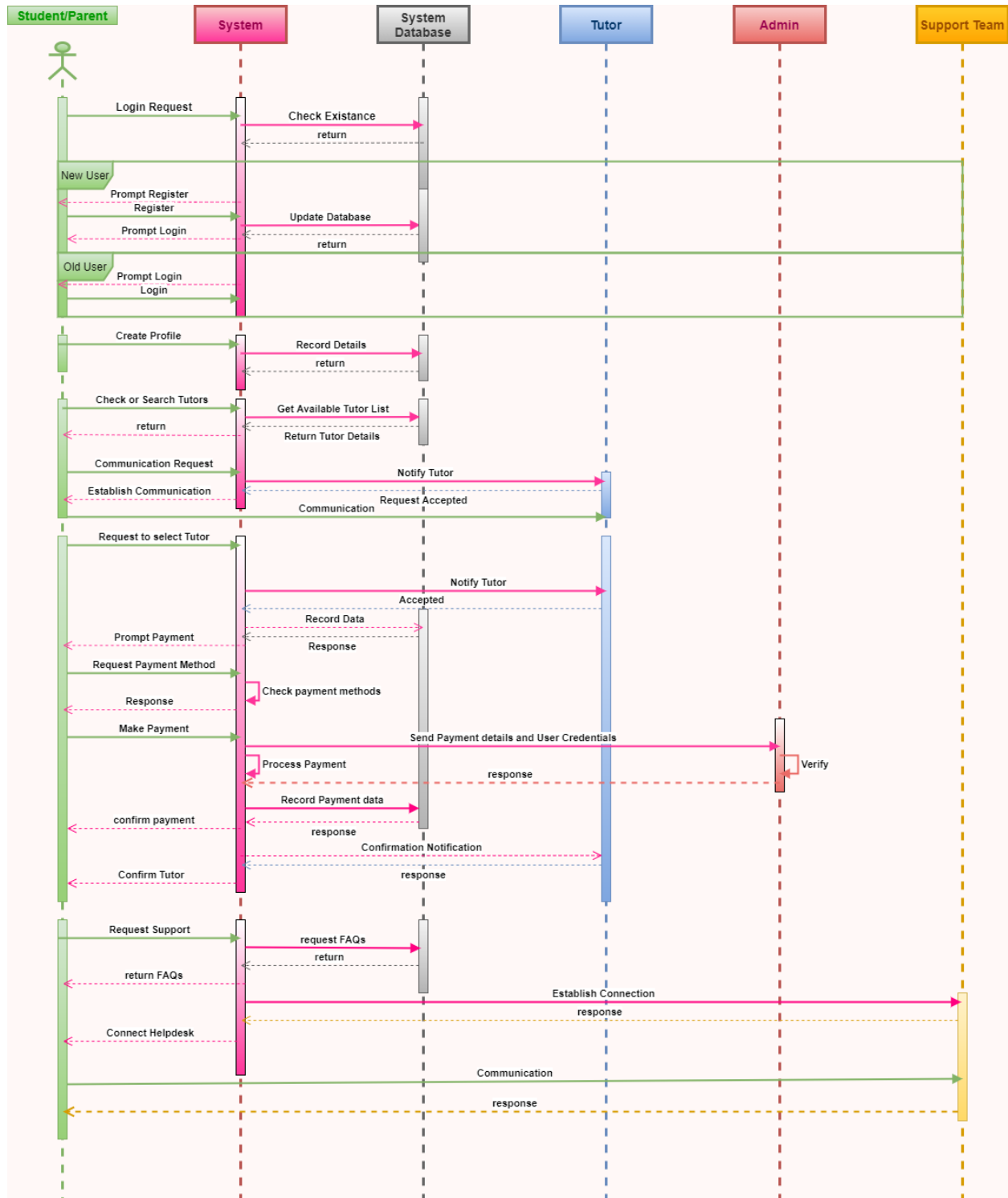
In this activity diagram, after register and login the user will create profile. They will choose one as a student or as a tutor. Then they will go to the dashboard. Here they will choose to check the user profile or search for each other. Student can search for recommended tutors or if not selected they will see the sorted list of tutors by default. Then any user can select other and start communication. In this activity, one will be notified before establishing connection. If both party agree then the communication will start. If not agreed it will terminate the communication hub and redirect to search option. If they do not response till 48 hours it will be discarded. Then they can finalize the tuition. If finalized by the both party, the system will prompt the payment request for the students and tutors can request for payment release. Both user can ask for support and the system will let them decide to choose to see FAQs or go for the helpdesk. If helpdesk is chosen then it will redirect them to support team.

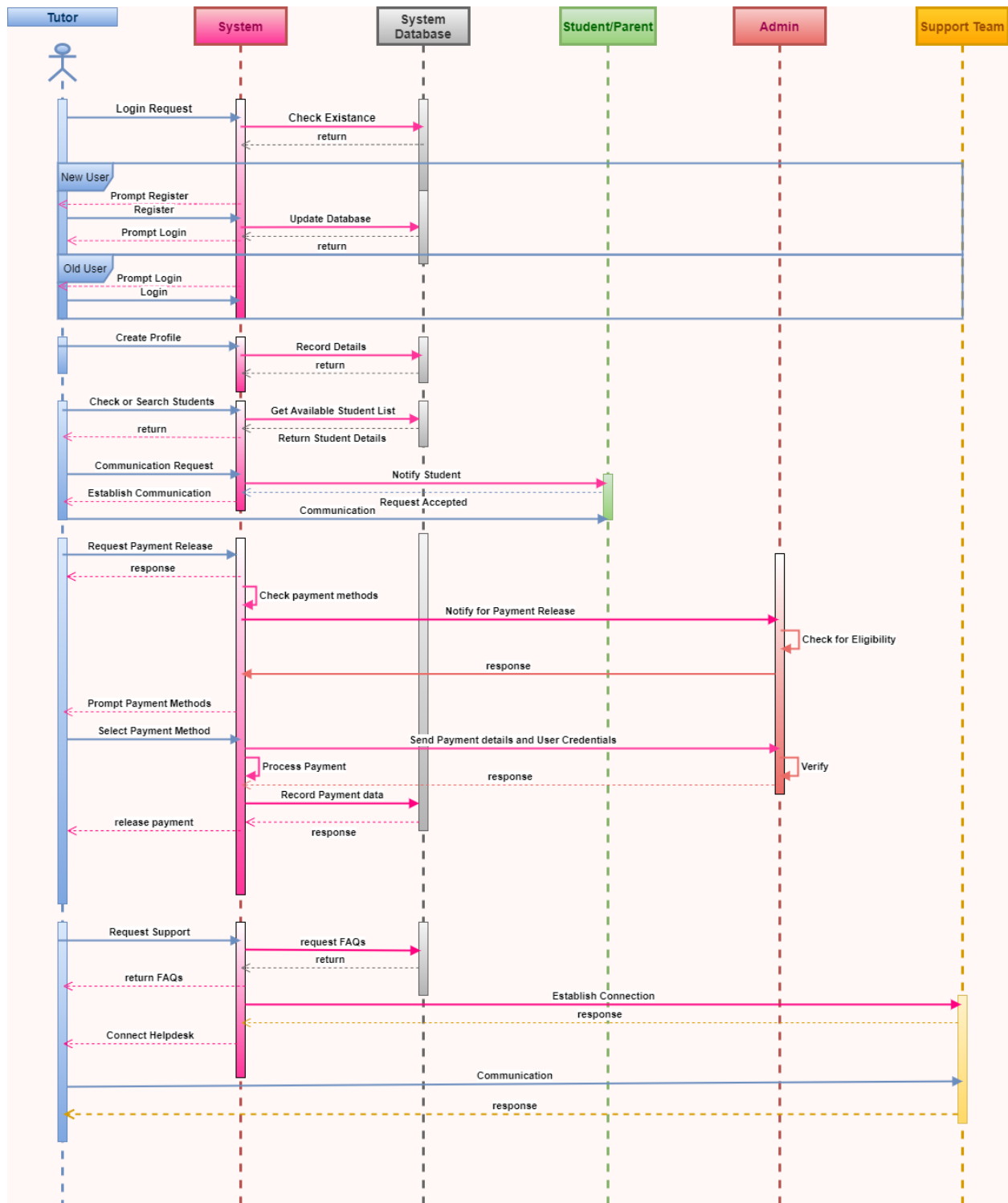
The admin, in this activity, will verify all payment process and release payments to tutor. Admin will also check the available FAQ list marked by the support and update to the database. Admin will check the eligibility of the tutor before releasing payment and verify payment method and user credential for both party. If payment become successful admin will confirm the tutor.

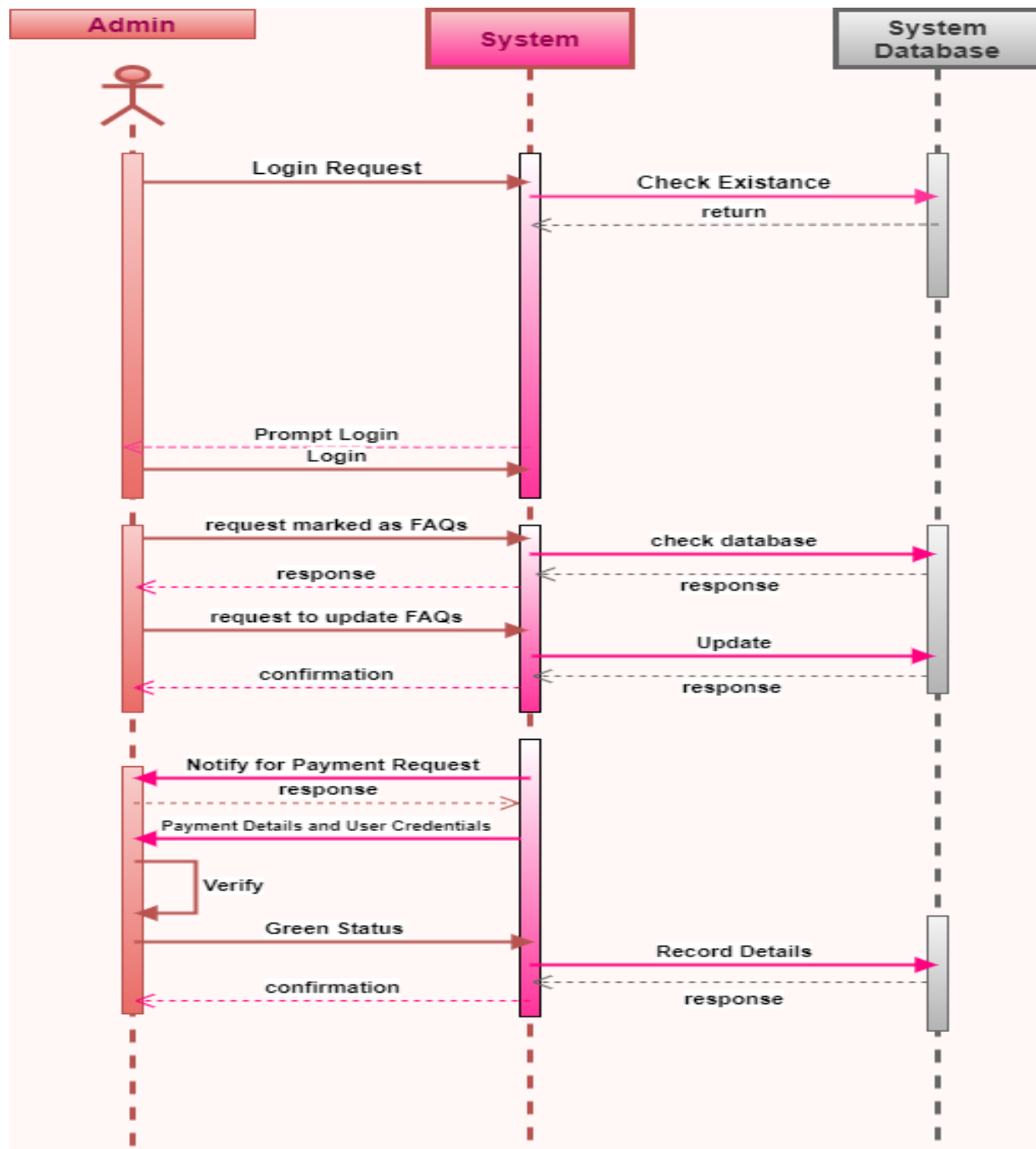
The support team will operate help desk. If any support requested they will provide the support and count if the question has asked more than 10 times or not. If it is more than 10 times they will mark it as FAQ. If not they will keep counting. If there is no request they will stand by.

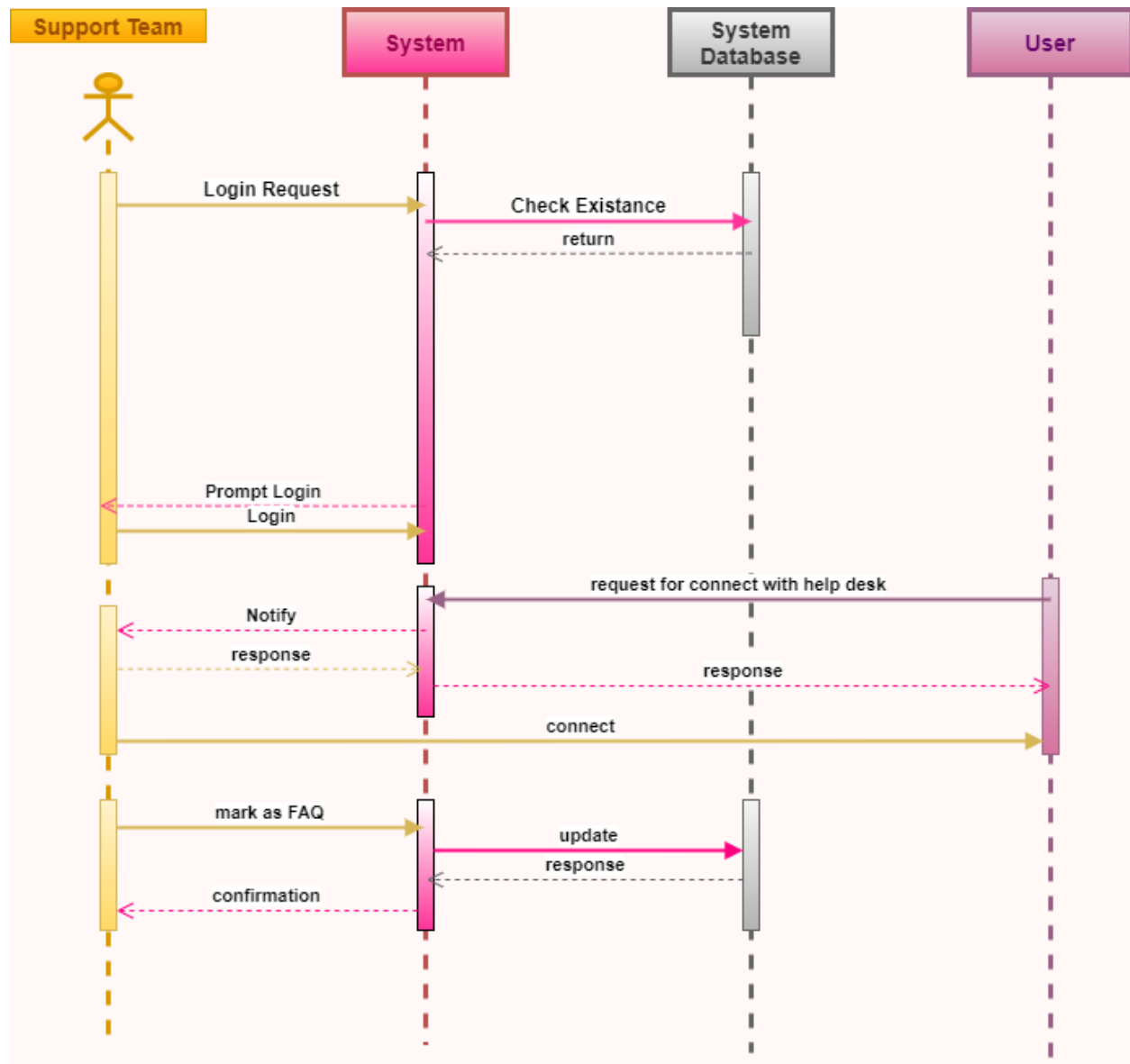


Sequence Diagram

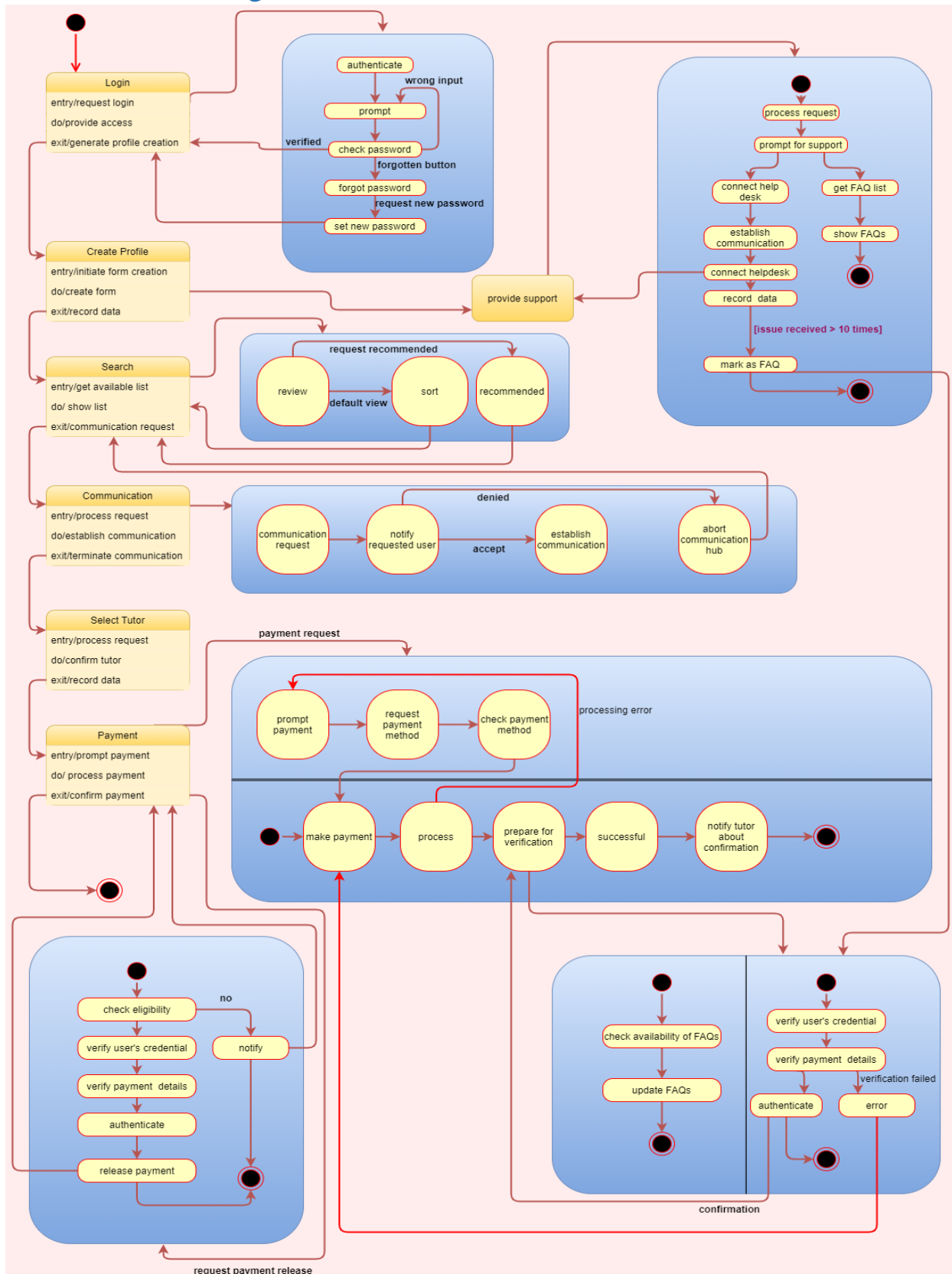




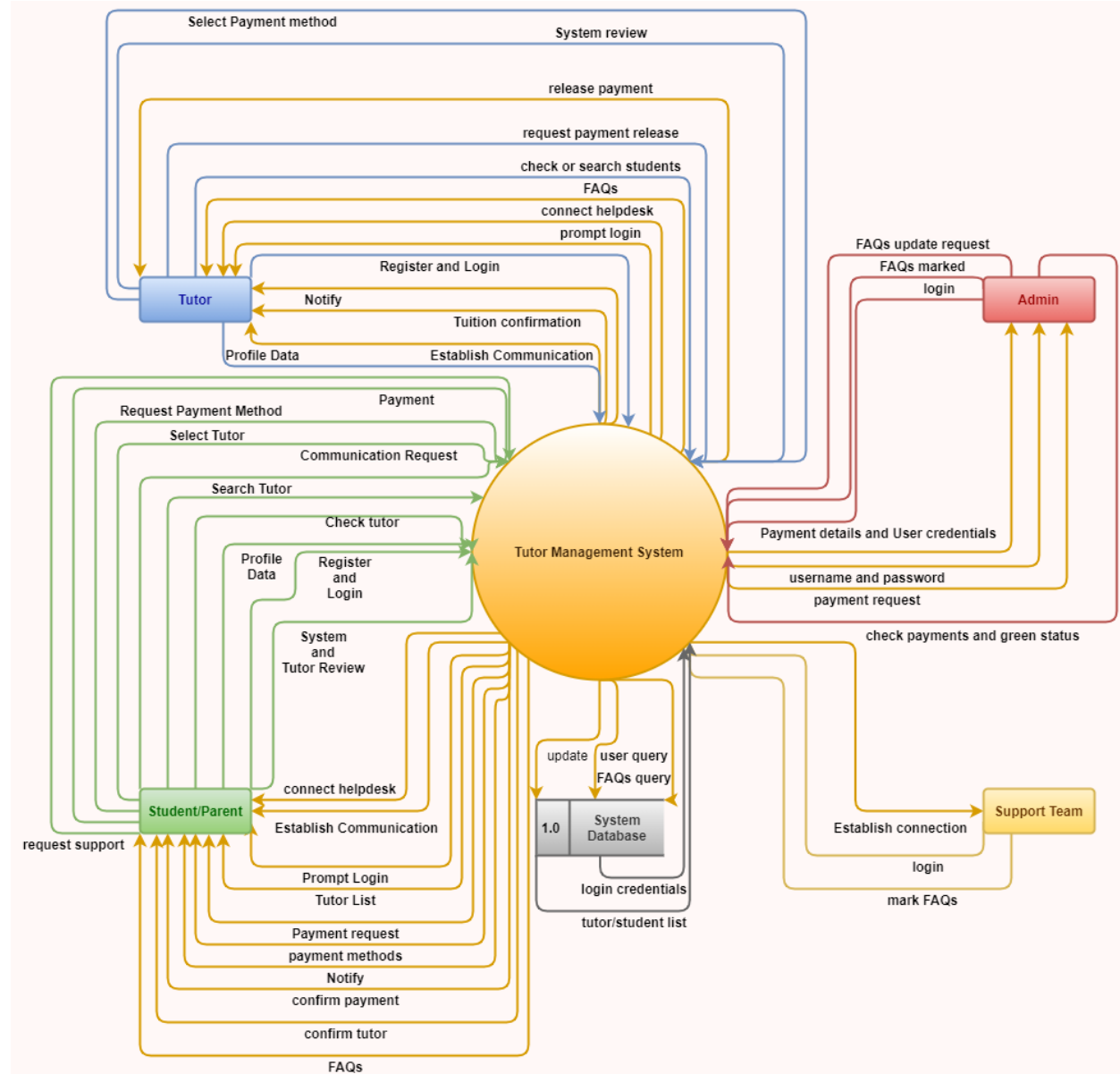




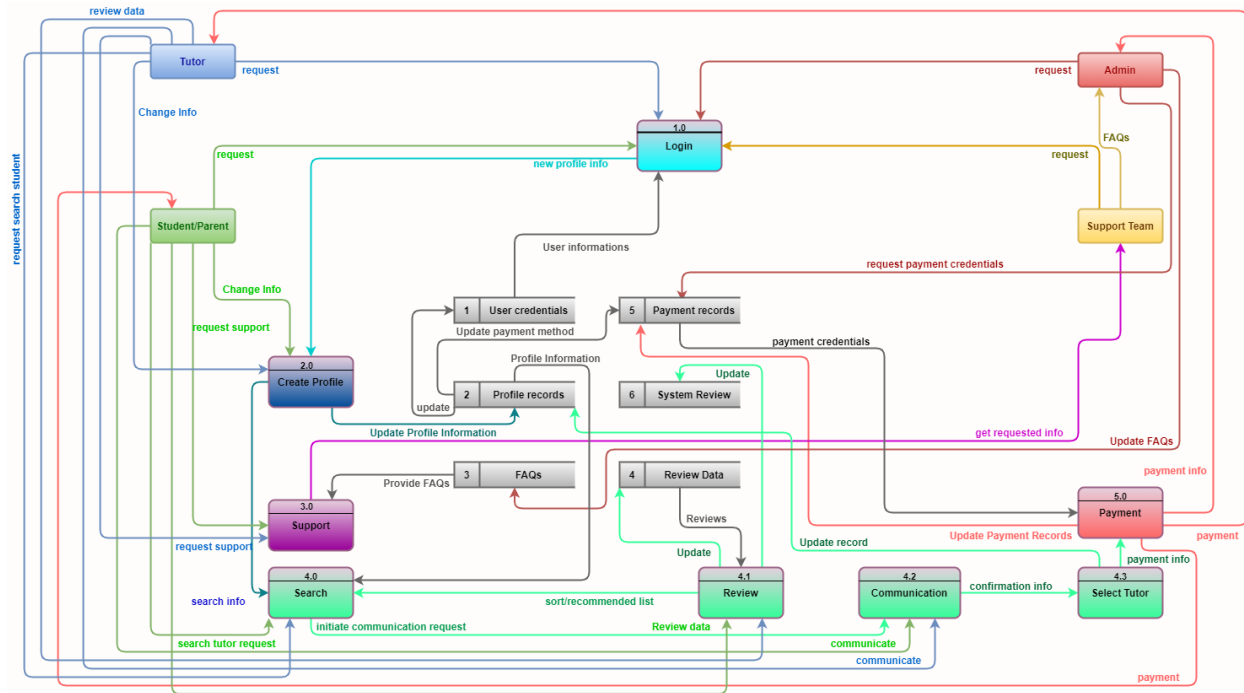
State Machine Diagram



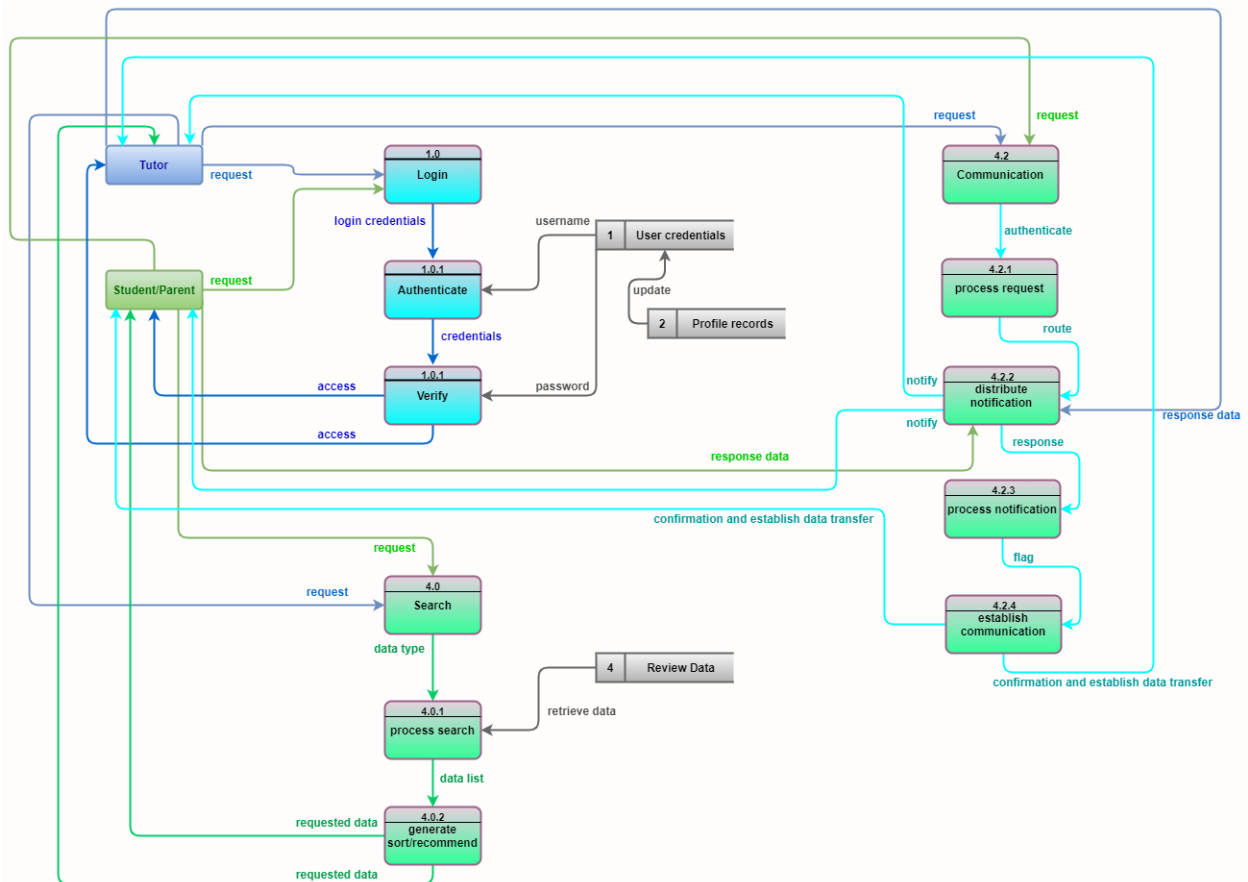
Data Flow Diagram



Context Data Flow Diagram

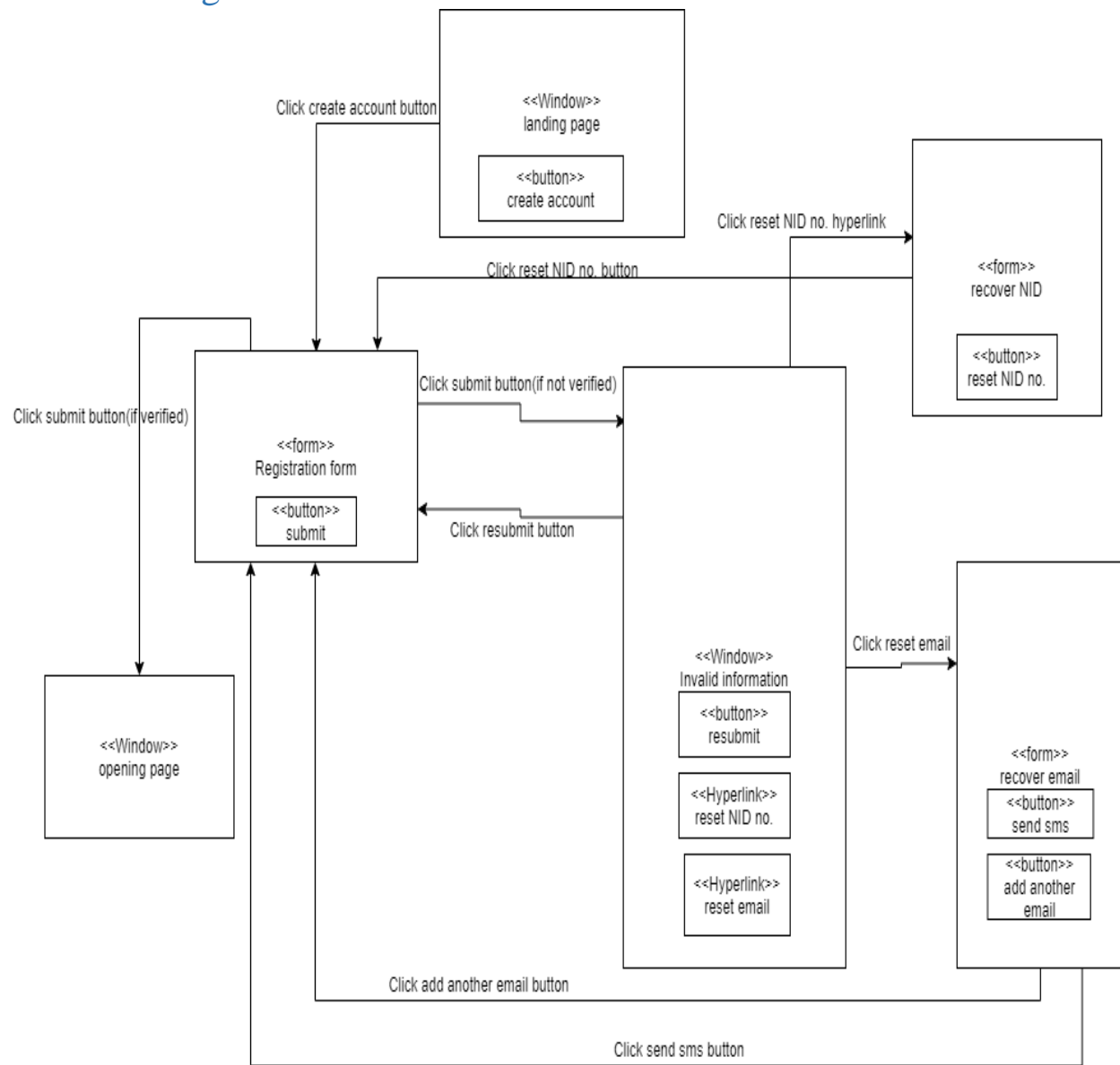


Level 1 Data Flow Diagram

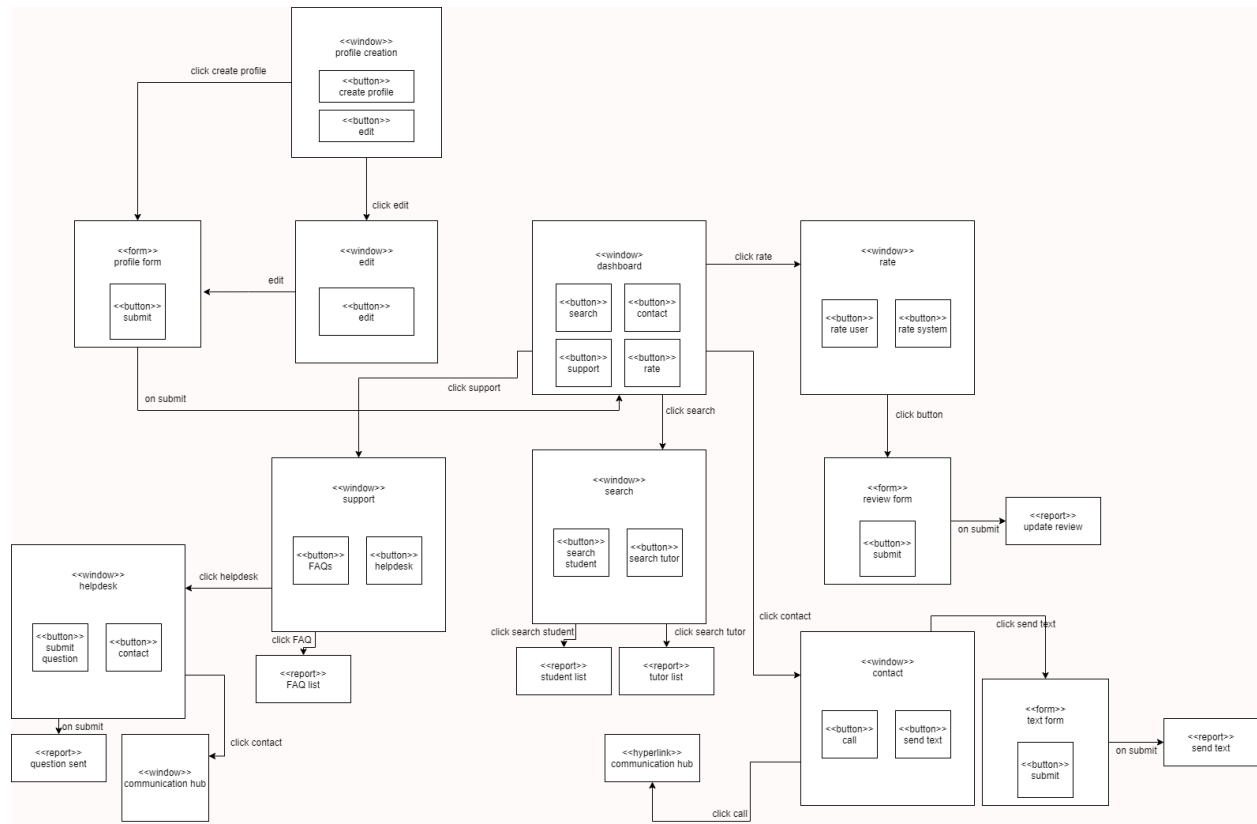


Level 2 Data Flow Diagram

Window Diagram



Login window



User window

In this report, firstly we talk about system request where we want to state the business needs, business requirements, business value and special constraints. After that, we add requirement analysis where we talk about functional requirement and non-functional requirements of the project. Then we provided the use case diagram showing the functionality of the users. Next we added activity diagram for our project with detailed views of use case diagram. Then we added sequence diagram to show the system interact with the actors. In addition to that, we added state machine diagram to show the process of the sequence diagram. After that, we created data flow diagram where we discussed up to level 2 of the dataflow diagram. Finally, we designed window navigation diagram to show the user interface actions.