American International University-Bangladesh (AIUB)

Department of Computer Science

Faculty of Science &Technology

(FST) Spring 20 21 Bright Tuition

Software Requirement Engineering

Sec: **A**

Project submitted

By

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The project will be evaluated for the following Course Outcomes

1. PROBLEM DOMAIN

1.1 Background to the Problem

Nowadays finding the right teacher according to a student's need is quite a challenging job. Finding a suitable teacher for children is a tough job. There has been a report that students change multiple teachers to find the right one. Even parents get frustrated while finding tutors traditional way. The most common way to find a tutor is word of mouth. But as time is changing everything is getting digitized. So, we need to find an easier and modern way to solve this issue where students can get matched with a tutor who is suitable for their way of study.

1.2 Solution to the Problem

As we are trying to find the solution for the problem of finding a tutor based on a student’s needs. We are trying to find a more digitized and easier and automatic way to solve the issue.

This software is targeted for learners of various learning categories. It can be used by middle schoolers to learn the water cycle, high schoolers to learn linear algebra, undergraduates to learn computational thinking or a receptionist to learn graphic arts and so on. It would select the proper tutor for the learners based on their requirements and provide a communication platform between learners and the tutor. The learners access these facilities with a monthly membership fee to take part in at most three different groups at a time, each month.

The scope of this project is to define a means for the learners to describe their needs and to choose a tutor for them accordingly as well as provide a basic communication ground for them to interact, for example a chat box. More enhanced communication facilities and advanced tutor selection techniques may be addressed in future scopes.

The objective of this project is to address student needs in an effective way as different students have different strengths and weaknesses and traditional classes are rarely sufficient to meet all their needs. This software provides a platform where students can communicate their specific needs and receive guidance from their respective tutors provided by the software features described.

This solution is feasible to meet the business objective as the tutors will register to this software and they'll need to pay up one time registration fee. Also for each new tuition they will be obligated to give 30% of the first month salary which will be charged as a fee.Also from the student side. The student will also need to give a registration fee.

There are plenty of educational resources that can be found on the internet. However, what makes this software different is that it immediately responds to the needs of the student which may not be the same for everyone. Courses and explanations found over the internet are made for the general crowd without focusing much on individual strengths and weaknesses. This software provides a direct communication platform to address these needs by using "groups". This feature of the software makes it unique from other solutions available. Although there are many other resources out there to combat learning hindrances, like Coursera, Udemy, Khan Academy, YouTube channels and discussion panels and forums, all of these have different concepts by which they operate and at the same time, all of these have vast amounts of audiences or users.

2. SOLUTION DESCRIPTION

2.1 System Features

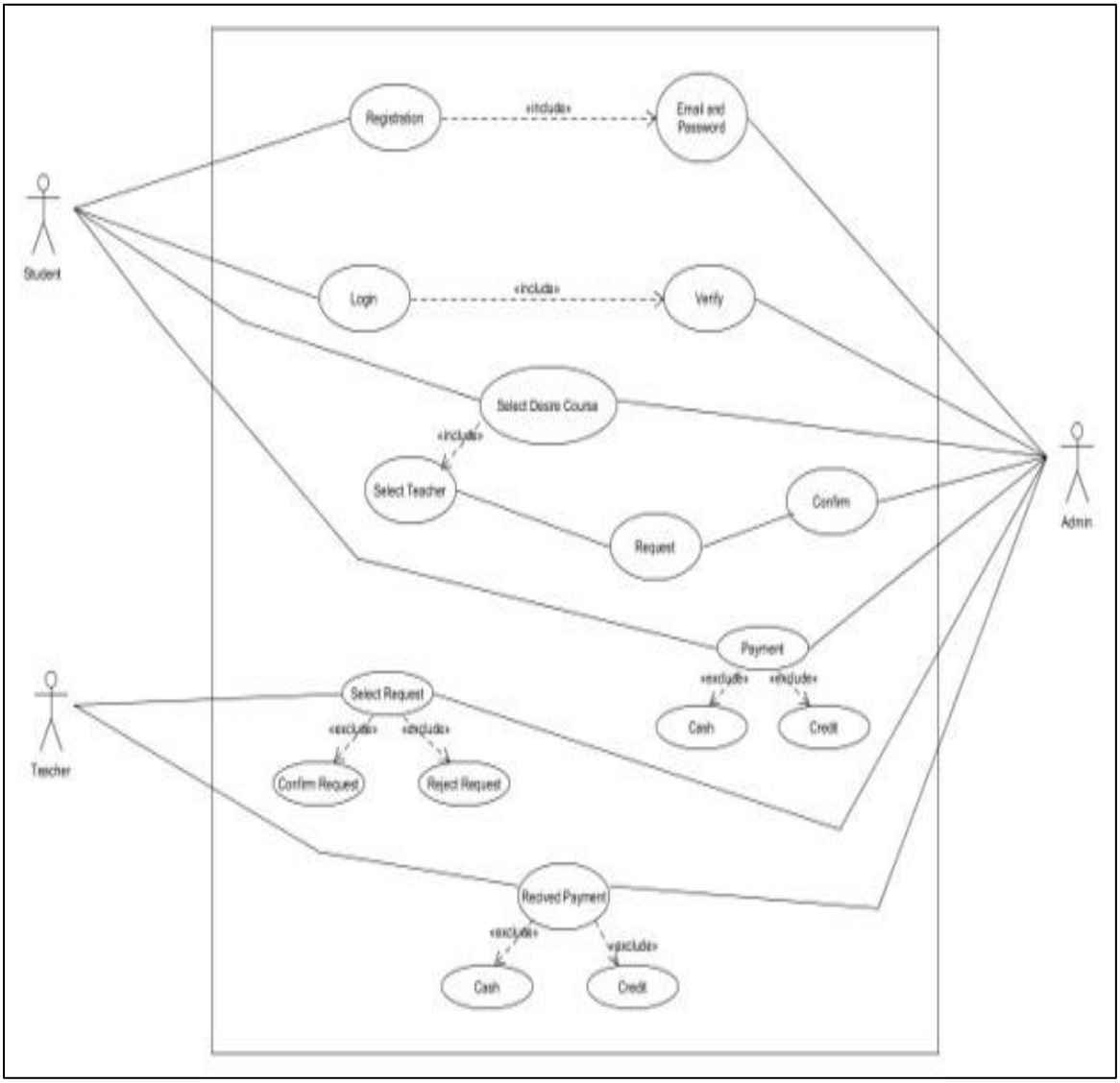
Some System features of our projects are given below:

- As a student, signing up and logging into the website (H)
- As a student, making groups (H)
- As a student, sending request to other members (H)
- As a student, accepting requests from other students to join groups (H)
- As a student, filling up requirements information in requirements form (H)
- As a student, defining the learning goals of the group (H)
- As a student, voting on other member goals inside the group (M)
- As a student, leaving a group (H)
- As a student, interacting inside a group using chat, status posting and commenting. (H)

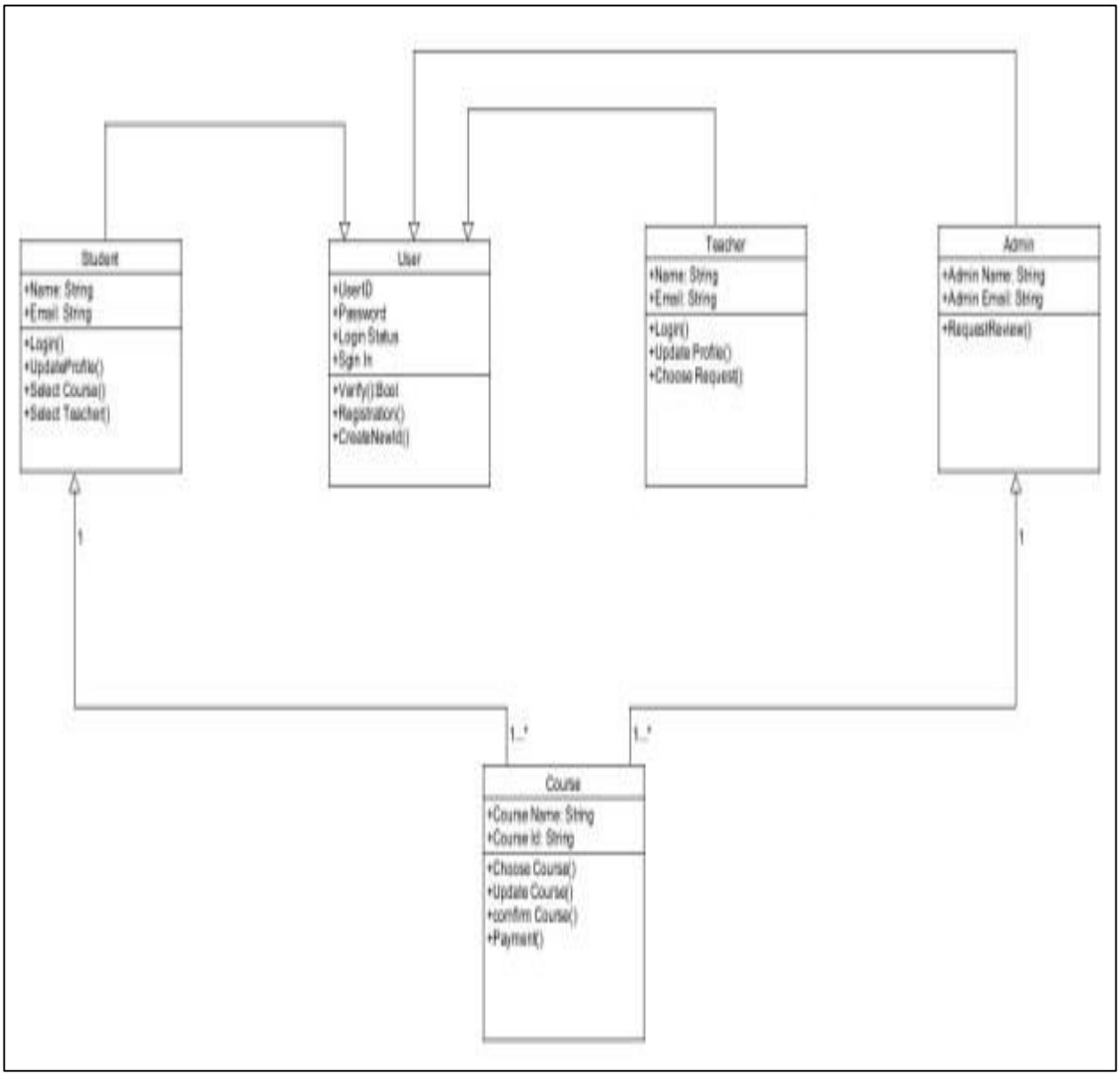
- As a student, categorizing comments and statuses as questions, suggestions, guidance or help-needed (M)
- As a student, specifying if group goals were met in the end (L)
- As a student, paying online with security standards maintained(H)
- As a teacher, logging into the website (H)
- As a teacher, selecting/canceling groups from offered groups, if multiple options present (M)
- As a teacher, making final comments on the success of the group in achieving results (M)
- As a student or as a teacher, starting a video conference through the software (L)
- As a student or as a teacher, making calls inside groups through the software (L) ● As a student, receive the proper tutor selected for group based on requirements and it gives accurate results (H)
- The user interface has to be pleasing and friendly and easy to use. (H)
- The frontend features have to maintain recent standards of user expectations

2.2 UML Diagrams

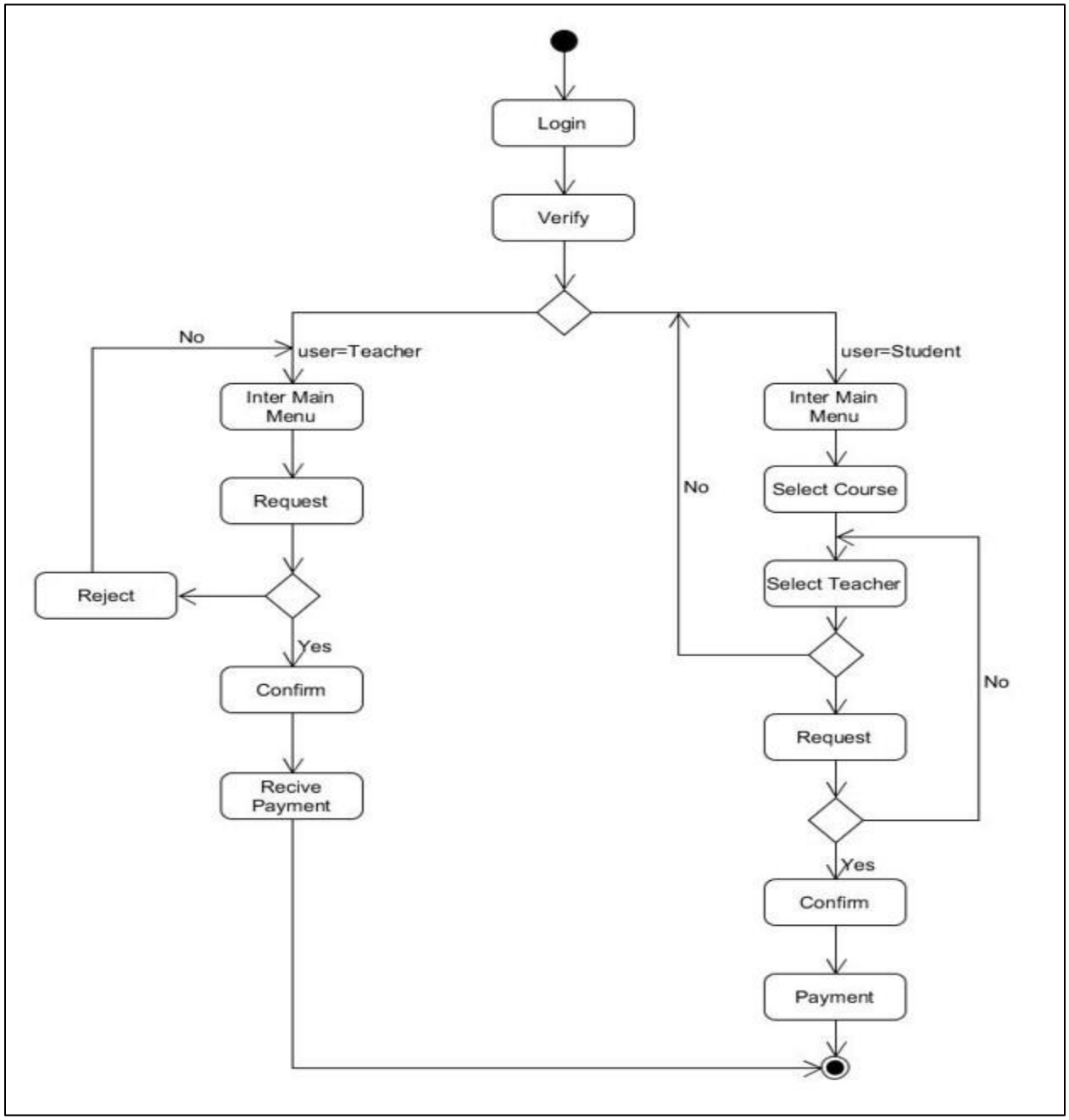
Use Case Diagram



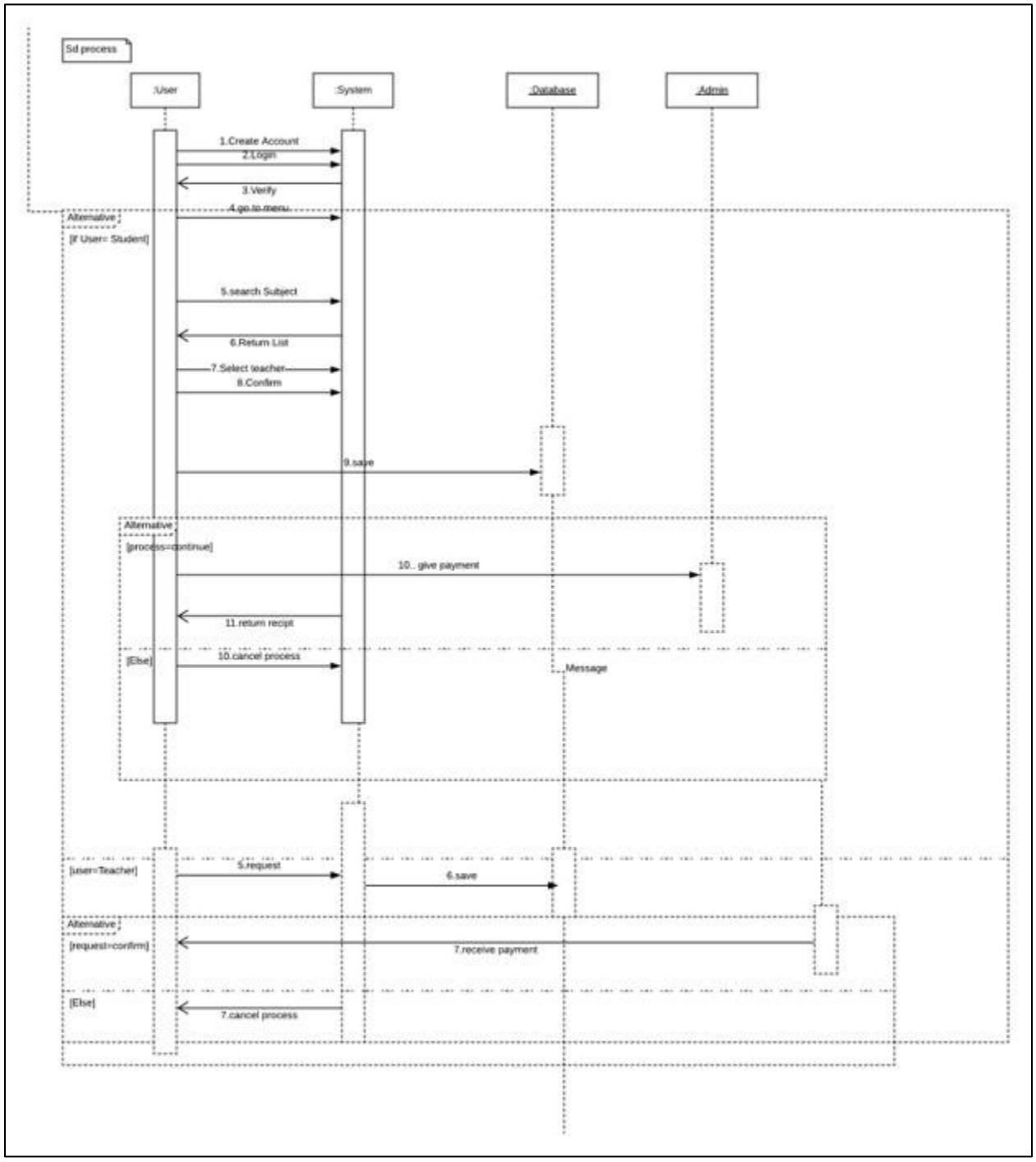
Class Diagram



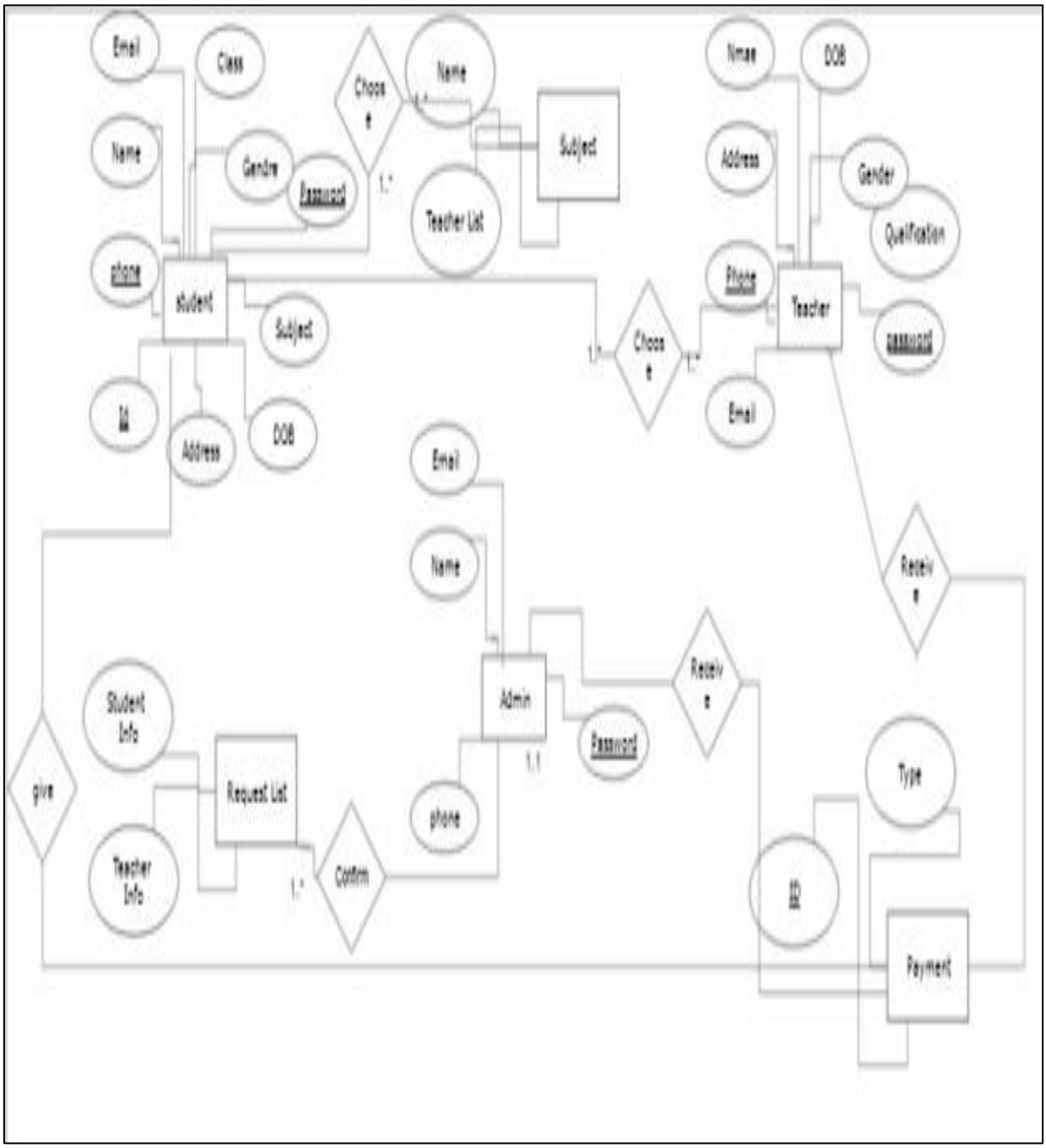
Sequence Diagram



Activity Diagram



ER Diagram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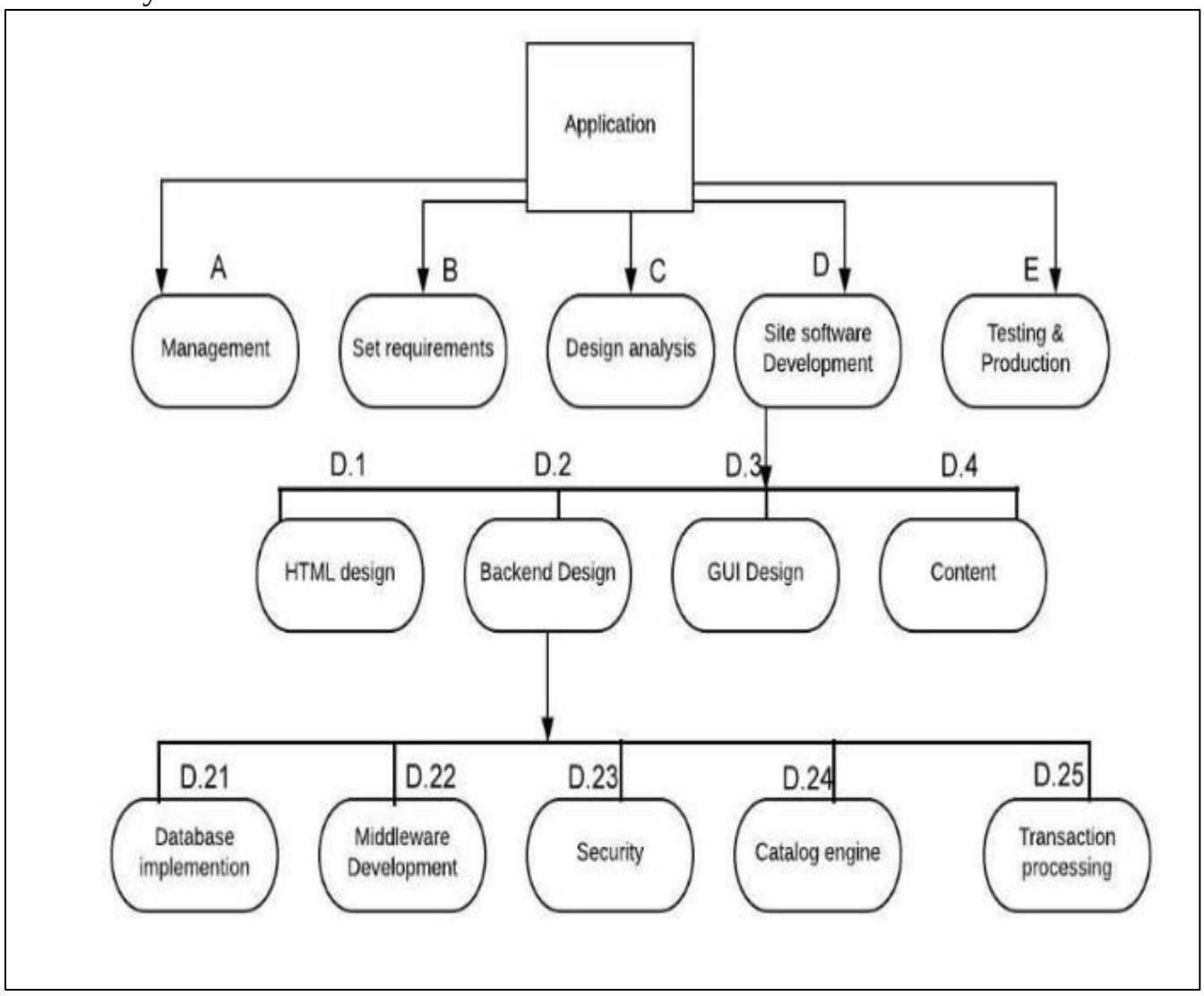
3. Social Impact

Our project is based on improving education quality with potential teachers and staff. Due to the CoronaVirus pandemic, all the institutions are closed and it hampers students' regular studies and works. With the benefit of our project, we are making a platform where students can get their tuition and it is also a great opportunity for teachers because many potential people have already lost their job. We are creating more and more job opportunities. Mainly, students don’t need to worry about going to coaching or other educational institutes, they can get qualified teachers by paying affordable fees. Also, we are considering some scholarship option For need-based students who's family is suffering financial crisis due to covid 19 pandemic. We are also contributing to help people who are financially lost or broke and also poor people from our profit because some percentages will go for donations.

4. Development Plan

It's a method for estimating the most realistic amount of effort needed to create or maintain software based on incomplete, unclear, and noisy data. Project plans, iteration plans, budgets, development analysis, purchasing processes, and bidding rounds may all benefit from effort estimates.



Effort Allocation :

Front-end activities (40-50%)

- Customer communication
- Analysis
- Design
- Review and modification

Construction activities (15-20%)

- Coding or code generation

Testing and installation (30-40%)

- Unit testing, integration
- White-box, Black box
- Regression

Once the WBS is ready and the size and effort estimates are known, you are ready for scheduling the tasks. While scheduling the tasks, certain things should be taken into account –

- **Precedence:** A task that must occur before another is said to have precedence of the other.

- **Concurrence:** Concurrent tasks are those that can occur at the same time (in parallel).

- **Critical Path:** Specific set of sequential tasks upon which the project completion date depends.

- All projects have a critical path.
- Accelerating non-critical tasks do not directly shorten the schedule.

Sl. No.	Items	Total(Working days)	Dependencies
1	Registration Wizard	3	
2	User Access Management - with role management	9	1
3	Forum & Discussion module	6	
4	Task manufacturing	33	
5	Database management system	14	
6	Messaging system	17	2,4,5
7	Exam or Testing module	11	4
8	Advertisement	29	3,4,7
9	Reporting	16	2,3,4,7,8

Total days for development: 138 working days

Total time for development: 8 months

5. Marketing Plan

As for marketing plan, We, are going to pre-launch the software where there will be a exclusive deal to attract more customers such as – 50% off on registration fee for the first 100 people. We are targeting to reach at least 5000 people through social media. Regularly boosting the advertisement in social media will help us. Also, the marketing department will also be on a lookout for the current trend through which we're hoping to attract the customers. Also, the user feedback as well as doing survey by customer every three months will help us to know more about them and what they want.

Reaching out to social media influencers is a big thing at this moment. So, we might try that marketing plan too. As well as trying to reach out to respective teachers of different schools and ask them to do a free sessions with the students on a particular subject might help reaching out to more users.

6. Cost and Profit Analysis

Items	Daily Cost (BDT)	No. of Days	Total Cost (BDT)
Front-end Developer	650	96	62,400
Back-end Developer	750	88	66,000
Business Engineering	400	25	10,000
Total Development Cost			BDT 138,400
Overhead Cost (20%)			27,680
Safety net for Spillover			11,072
Cloud Server			260,000
Marketing Cost			20,000

Profit Analysis:

Almost 138 days have been appointed to complete the software. By summing up all the cost, it becomes 457,152 (BDT)

The tutor needs to pay 10% for the new tuition.
There are many courses with different payment range from 1000-5,000 (BDT) each. Let us take the average 2,000 (BDT)

For each tuition, the tutor will have to pay 10% of a course for the first month. So, for one course from one tutor, we get = 200 (BDT)

Because of marketing and advertisements, the software is expected to reach about 1000 teachers and 2000 students in a day for two months.

Among 1000 teachers, almost 800 of them are expected to use the software. And among 2000 students, 200 students are expected to search for teachers there in the app.

So, in average, the students will pay, 200*2000 = 400,000 (BDT)
And teachers will pay us, 10% of 400,000 = 40,000 (BDT)

So, if, in a day we get 60,000 (BDT) then in a month we get, 40,000*30 = 1,200,000 (BDT)

If the total cost is deducted from the first month's profit then, the profit for the month is: 1,200,000 - 457,152 = 742,848 (BDT)

Then by next month, the profit is: (2*1,200,000)+742,848 = 3,142,848 (BDT)