Software Requirements Specification

Student-Teacher Interaction Portal

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1. Introduction

This section gives a scope description and overview of everything included in this SRS document. Also, the purpose for this document is described and a list of abbreviations and definitions is provided.

1.1 Purpose

The purpose of this document is to give a detailed description of the requirements for the student-teacher interaction portal. This document gives the various functionalities of the web application and necessary details regarding it's development process.It will also explain system constraints and interface. This document is intended for review by the users of this web application as well as the developers for approval as well as to accommodate for further possible modifications.This document also serves as a reference for developing the first version of the software.

1.2 Scope

Our "Student-teacher interaction portal" is web application which helps students to connect with their professors regarding their doubts and their works in particular courses.The web application should be free to use for all it's users.

Students can use this web-portal by providing their details like roll number,current semester etc.Teacher's can also use this portal by specifying the courses he/she wants to teach and in which semester he/she wants to teach.

1.3 Definitions, acronyms, and abbreviations

Term	Definition
User	Someone who interact with the web application

Student	Student in college who wants to be a part of the web application
Teacher	Teacher of different courses who wants to be a part of the web application
Web-portal	A web application which allows students to connect with teacher
FR	Functional requirements
Login	A procedure to access the system
Database	Collection of all the information regarding the system

1.4 References

[1] IEEE Software Engineering Standards Committee, "IEEE Std 830-1998, IEEE Recommended Practice for Software Requirements Specifications", October 20, 1998.

[2]How to write the SRS documentation, following "IEEE Std. 830. ISM 4331, J.Zalewski", September 2003

[3] Software Requirement Specification - Amazing Lunch Indicator -used as a reference for writing functional requirements under users.

[4] Writing Requirements by Steven J Zeil for basic information

1.5 Overview

The remainder of this document includes two more sections.The second section provides an overview of the system functionality and system

interaction with other systems. Further, this chapter also mentions the system constraints and assumptions about the product.

The third chapter provides the requirements specification in detailed terms and a description of the different system interfaces. Different specification techniques are used in order to specify the requirements more precisely for different audiences. This chapter contains a detailed description of all functional requirements of student and teacher.

2. Overall Description

This section will give an overview of the whole system. The system will be explained in its context to show how the system interacts with other systems and introduce the basic functionality of it. At last, the constraints and assumptions for the system will be presented.

2.1 Product Perspective

The software application will be web based product.The web application will be used by the students to connect with their teachers, to ask their doubts regarding the course,to check assignments [if any] and to do fees payment and to also check general notices.The web application will provide a medium for teachers to answer student's queries,to upload assignment and to view the submissions of students assignments.

The front-end part of the web application will provide the user interface so as to access the web application. The backend part of the it, will be used to handle the http requests and to manage the database from where data will be stored or retrieved.

The Web Application Software should be able to check authentication of the user. The Web Application Software should be able to fetch the required information from the database and also to store in it.The web application will also need an active internet for any user to use.

2.2 Product Functions

Our web application will allow the student to login into the system with their registered email-id and password.After login we will provide students a forum where they can ask their doubts regarding specific course and they can also answer any question on forum.We will also provide students a fee-payment gateway through which student can pay his/her college fee through online only.We will also allow a student to give feedback to teachers anonymously. The web-application will also provide a functionality for students to maintain their profile.

Teacher's can also use our web application by providing their registered email-id and password. Our web-application will allow teachers to answer the student's queries,to upload assignment [if any] regarding to their course and to put general notices.

2.3 User characteristics

There are two types of users that interact with the web application: student and teacher. Each of these two types of users has different use of the system so each of them has their own requirements.

All users can interact with the system only through the web portal. As all the data is stored in a remote server all user data needs to be secured. Hence there will be a requirement to login, to ensure that it's an authorised user.

Students use the web application to check if there are any assignment related to any course they have taken,they can also ask their doubts on forum.Teacher's can use this web application to post their course assignment and to check student's submissions of those assignments.

2.4 Constraints

Internet connection is a constraint for the web application. Since the updation of data in the database happens over internet, the presence of an internet connection is required for the software to run.

The software is constrained by the capacity of the database. If the memory of the database becomes full then no further data can be updated to the database until the administrator adds more memory or deletes some old data.

2.5 Assumptions and dependencies

It is assumed that all users have access to internet and are computer literate. Without internet the application would not be able to provide any functionality.It is assumed that the student would ask only course related doubts only in the forum.

2.6 Apportioning of requirements

In the case that the project is delayed, there are some requirements that could be transferred to the next version of the application.

3. Specific requirements

This section contains all of the functional and quality requirements of the system. It gives a detailed description of the system and all its features.The requirements mentioned here pertain to the system as a whole, which means that the specifications mentioned cover all aspects of the software, and provide necessary facilities to each of it's unique user.The requirements cover all perspectives of the software, i.e the teachers, the students and the administrator.

3.1 External interface Requirements

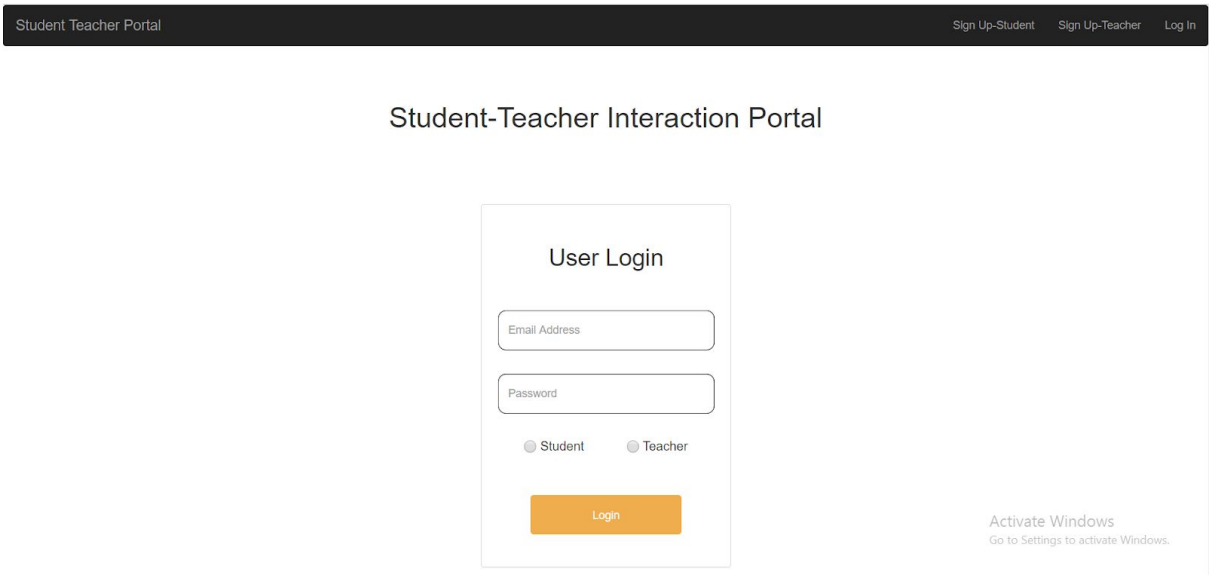
This section provides a detailed description of all inputs into and outputs from the system. It also gives a description of the hardware, software

and communication interfaces and provides basic prototypes of the user interface.

3.1.1 User interfaces

A first time user will have to create a user profile. For this there will be a signup page, one for a teacher and one for the student profile. This will collect all the details from the student or the teacher and maintain it in the database.

If the user is not a first time user then he/she can click on the login link present on the navbar and fill up the login details to enter into their account.



Student Signup

Name

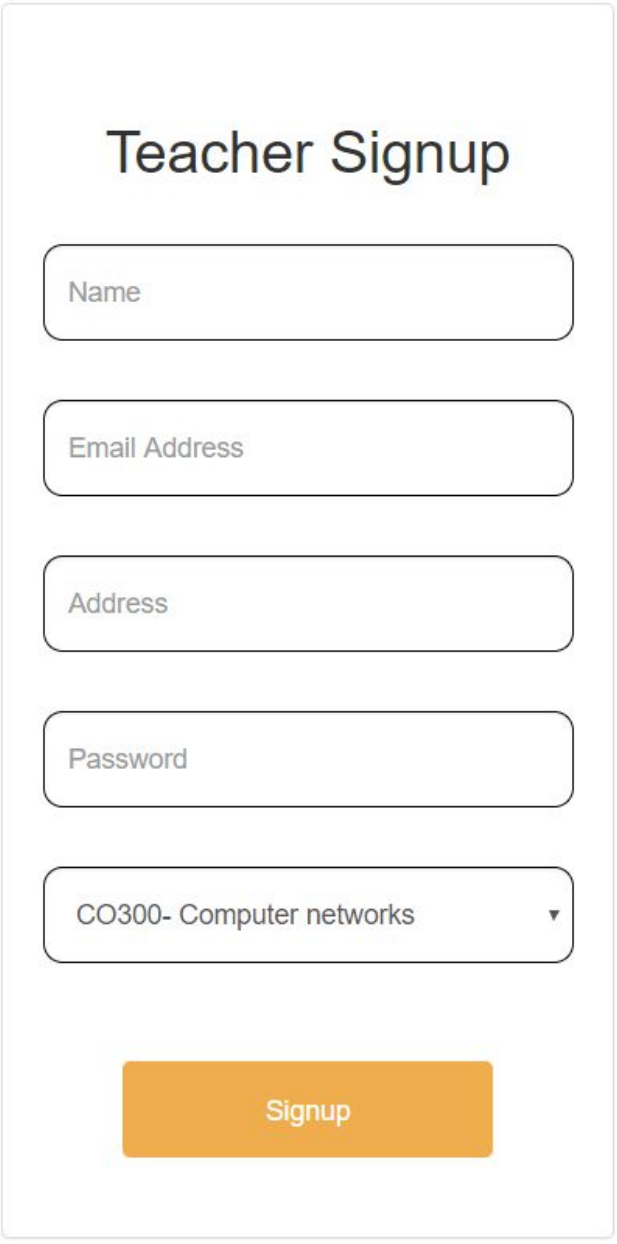
Email Address

Address

Semester

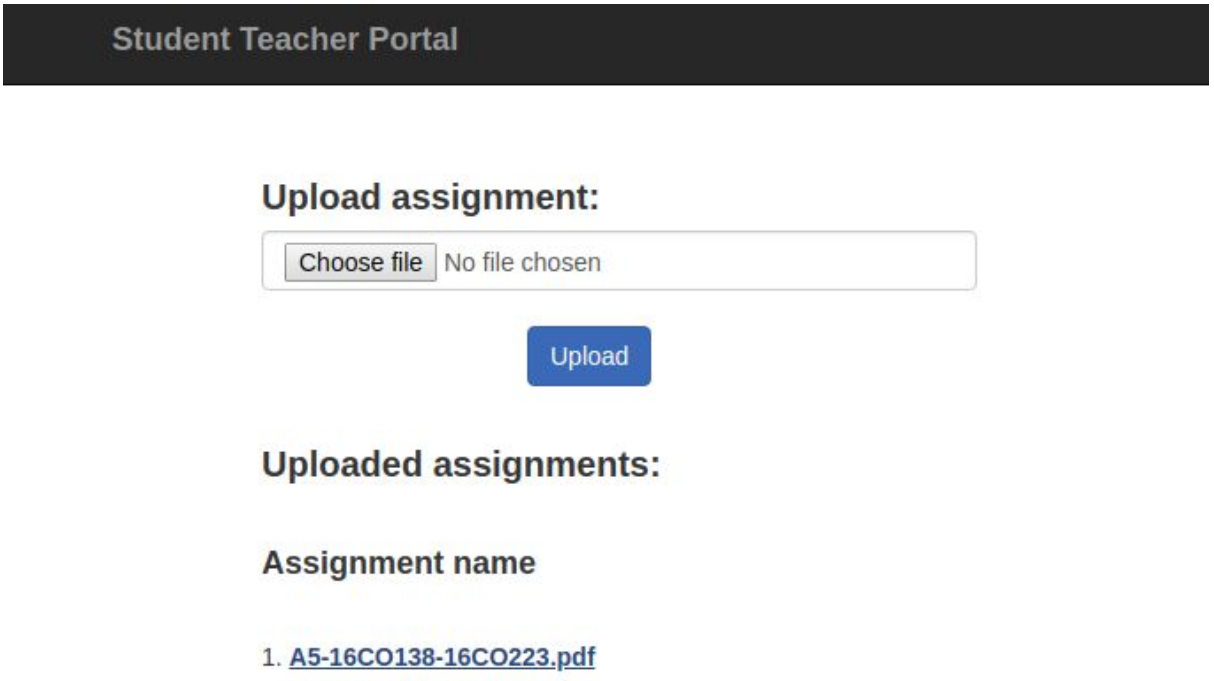
Password

Signup

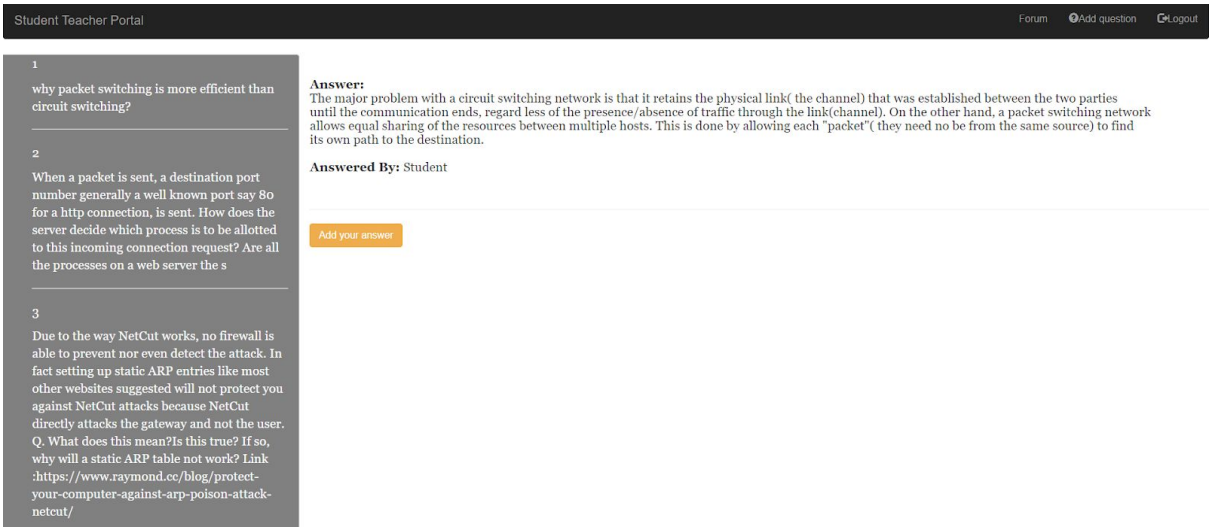


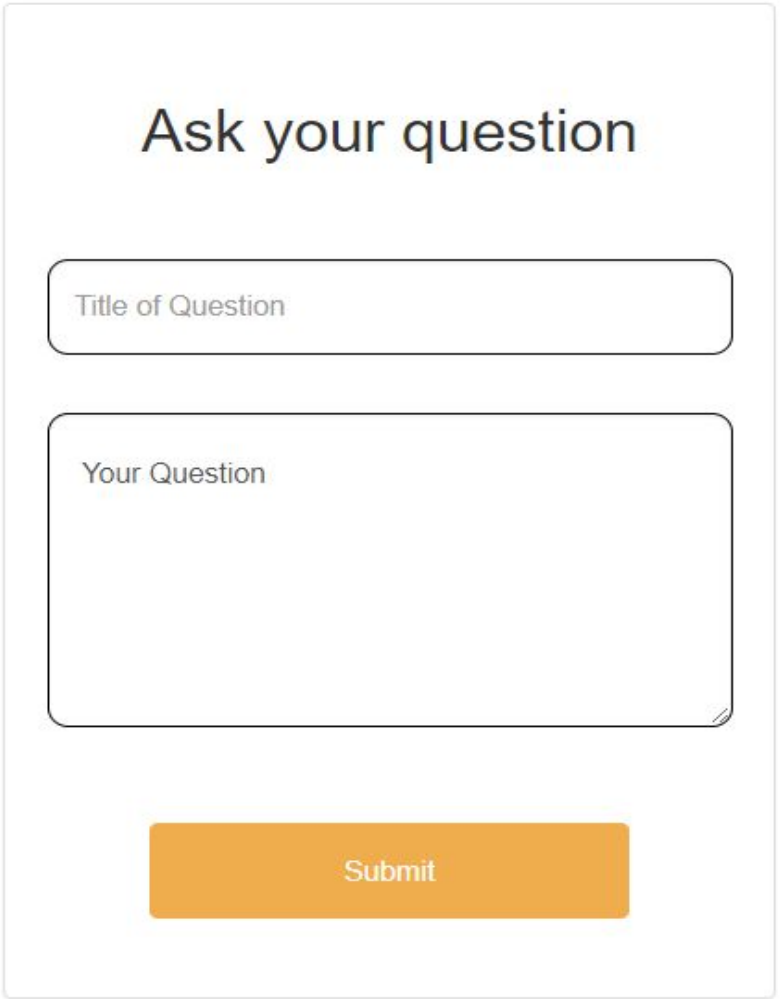
Then there is page for uploading the assignments, there is a button to choose the file, clicking it allows the student to browse for his/her assignments from their systems and upload them to the server. They can then be viewed by the teacher on her system.
Similarly the teacher can also upload any notices which she wants to inform to the class.

Also from the upload page itself the user can view the documents that he had uploaded. Clicking on them will allow him to download them on his system.



There is also a forum page where the user can view the questions and answers. Each question is represented as a button, clicking on it will show all the answers to that question. There is a button to add answers, clicking this opens up a form in which the user has to enter the question number and the answer.
There exists a page from which the user can ask questions. He has to provide the course id and then enter the question in the text area.


Student Teacher Portal
Forum
Add question
Logout
1
why packet switching is more efficient than circuit switching?
2
When a packet is sent, a destination port number generally a well known port say 80 for a http connection, is sent. How does the server decide which process is to be allotted to this incoming connection request? Are all the processes on a web server the s
3
Due to the way NetCut works, no firewall is able to prevent nor even detect the attack. In fact setting up static ARP entries like most other websites suggested will not protect you against NetCut attacks because NetCut directly attacks the gateway and not the user. Q. What does this mean?Is this true? If so, why will a static ARP table not work? Link :https://www.raymond.cc/blog/protect-your-computer-against-arp-poison-attack-netcut/
Answer:
The major problem with a circuit switching network is that it retains the physical link(the channel) that was established between the two parties until the communication ends, regard less of the presence/absence of traffic through the link(channel). On the other hand, a packet switching network allows equal sharing of the resources between multiple hosts. This is done by allowing each "packet"(they need no be from the same source) to find its own path to the destination.
Answered By: Student
Add your answer


Ask your question
Title of Question
Your Question
Submit

The student can do course registration from the portal. For this the user depending on his semester will be shown a choice of courses to choose from. The student can choose his course by clicking on the checkboxes, the respective teachers will then get a list of the students who have opted for their course. The teacher then has to approve their choice. After this the student gets enrolled into the course.

The portal will allow for fee payment. It will give the user the choice to choose his preferred method of payment. Following this he will be asked for the required details like debit card number, etc. After these details are verified by the system OTP will be generated. After the user enters the OTP the transaction will be approved and a receipt will be generated.

3.1.2 Hardware interfaces

Since the web portal does not have any designated hardware, it does not have any direct hardware interfaces.
The hardware connection to the database server is managed by the underlying operating system on the web server.
The user would only require a computer system and access to the internet to make use of the software.

3.1.3 Software interfaces

The communication between the database and the web portal consists of operation concerning both reading and modifying the data. Both the actors i.e, the students and the teachers access the software from different perspective and make use of different features of the software.
The web application uses MySql database which is accessed through the backend part of the web application.The frontend part of web application is written in html,javascript and bootstrap while the backend part is written in server side language [PHP].

3.1.4 Communications interfaces

The communication between the different parts of the system is important since they depend on each other. However, in what way the communication is achieved is not important for the system and is therefore handled by the underlying operating systems for the web portal.

3.2 Functional requirements

This section includes the requirements that specify all the fundamental actions of the software system. The system as a whole serves as a medium for the students and the teachers to interact with each other, providing the necessary functionalities and facilities is the job of the software. Not only will the interaction be in the form of text message but also media and other kind of file exchange.

3.2.1 User Class 1 - Student

ID: FR1

Title: Student registration

The student after he/she arrives at the website for the first time should then be able to register themselves. Following this they will be alloted a unique user id.

ID: FR2

Title: Student login

The student should be able to login to the website after he/she has finished registration. The login is done by the student entering his/her email-id and password which is then verified by the system. If it matches with the database then the student gets logged in.

ID: FR3

Title: Student profile

The student can see their profile page and edit their personal information on it. They can also see the list of marks awarded to them and their attendance.

ID: FR4
Title: Upload assignments
Students can upload assignments. These assignments will then get stored on the server. They can then be accessed by the teacher in charge. These assignments will get stored according to the course for which they were allotted.

ID: FR5
Title: Download assignments
After the student has uploaded any assignment, he/she can see it immediately on the web page in the form of a link. On clicking the link the uploaded assignment will get downloaded.

ID: FR6
Title: Ask questions
The student can ask any questions, related to the course content. These questions will get displayed on the forum page and the user can expect either the faculty or his fellow classmates to answer them.

ID: FR7
Title: Forum
The forum is the place where student can see a list of all the questions which were asked and the answers which they got. The student can also add a new answer to any question.

ID: FR8
Title: Course registration
The student can register for the courses available for him to opt in that semester. The teacher has to approve the student and after this the student gets enrolled for the course.

ID: FR9
Title: Fee Payment
The student can pay their college fees through the portal. After successful payment a receipt gets generated.

ID: FR10
Title: Download study material
The student can view the study material made available by the teacher and use it for his reference.

3.2.2 User Class 2 - Teacher

ID: FR1
Title: Teacher registration
The teacher after he/she arrives at the website for the first time should then be able to register themselves. Following this they will be alloted a unique user id.

ID: FR2
Title: Teacher login
The teacher should be able to login to the website after he/she has finished registration. The login is done by the user entering his/her email- id and password which is then verified by the system. If it matches with the database then the user gets logged in.

ID: FR3
Title: Teacher profile
The teacher can see their profile page and edit their personal information on it.

ID: FR4
Title: Upload assignment questions
The teacher can upload assignments. These assignments will then get stored on the server. They can then be accessed by the students.

ID: FR5
Title: Download assignments

After the student has uploaded any assignment, the teacher can see it immediately on the web page in the form of a link. On clicking the link the uploaded assignment will get downloaded.

ID: FR6
Title: Upload notices
The teacher can upload any notices regarding any new information which has to be conveyed to the class.

ID: FR7
Title: Study Material
The teacher can post the study material from the regular lectures for the students to refer to.

3.3 Performance requirements

The requirements in this section provide a detailed specification of the user interaction with the software and measurements placed on the system performance.The aim is to enhance user experience and increase ease and convenience of user experience. The performance of the system plays a vital role in making sure that the user has a pleasant experience with the software and deems it to be an asset rather than a liability.

3.3.1 Usage of uploading content

It should be easy for the user to understand how to upload the file. They should be able to browse and select the required file.The user must be able to search any required file and should be able to upload as quickly as possible.The uploaded files must be displayed as contents on the web page and the changes made must reflect immediately onto the software.

3.3.2 Download content

The user should be able to locate the download link easily and the download should be initiated immediately, also the file type should not get modified after downloading.The user must be able to download any available file and must be able to view it almost immediately.

3.3.3 Edit profile

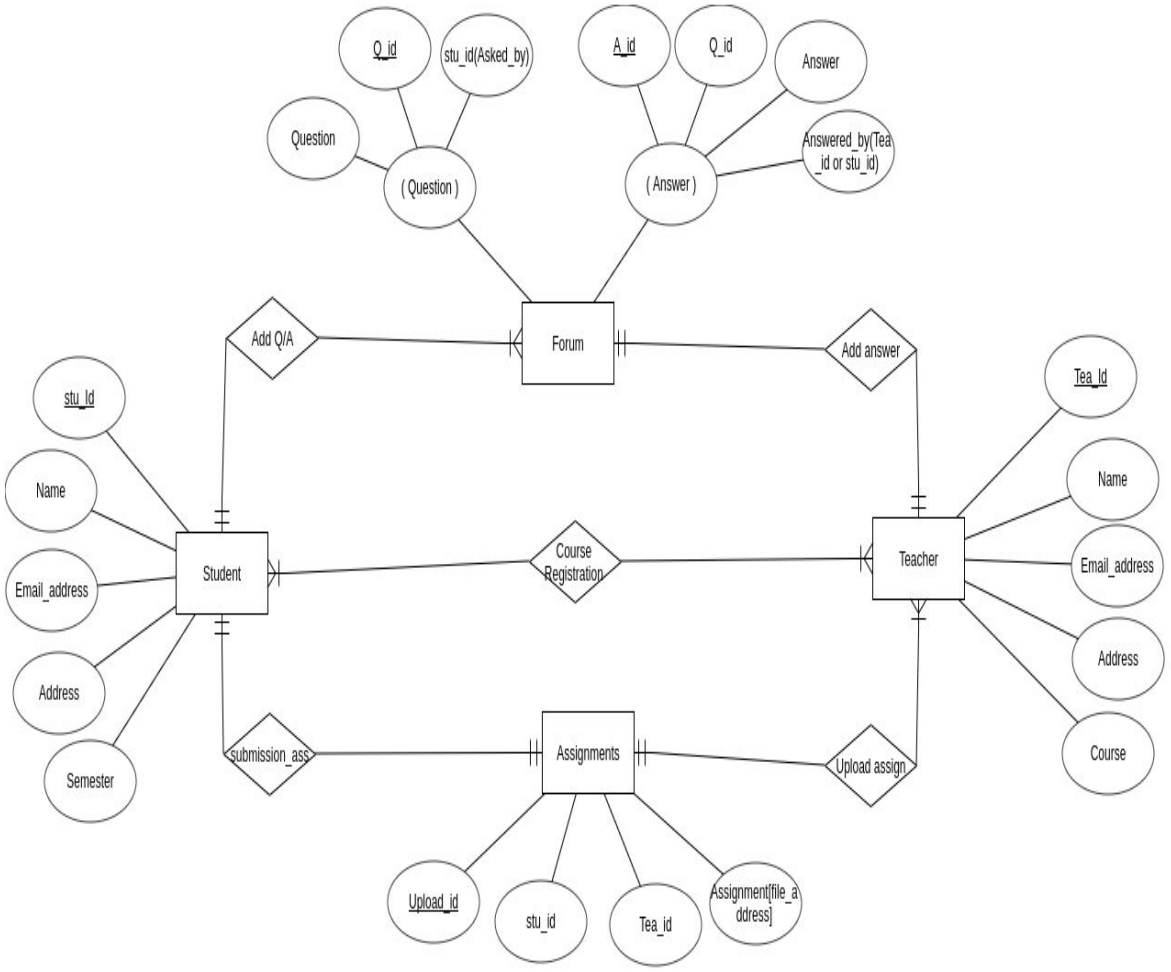
The edit link should be prominent and clicking it should open up a form asking for the new details. The user should then be able to submit and update their information and it should reflect on their profile.

3.4 Design Constraints

This is a web application so it takes no further space on drive. This will have constraints dependent on the web browser. The Web browser take takes the hard drive space so it depends on the web browser one use.

4 Appendix

4.1 ER Diagram



4.2 Class Diagram