Project of Sem 5 in subject of

Advanced Technology

PeerTeach

SRS Document

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1. Introduction

1.1 Purpose

The purpose of this Software Requirements Specification (SRS) document is to outline the requirements and specifications for the development of "PeerTeach," an online platform that facilitates peer-to-peer learning through video sharing and advertisement integration.

1.2 Document Conventions

- N/A (Not Applicable)

1.3 Intended Audience and Reading Suggestions

Students from various educational institutions who want to enhance their learning experience and share their knowledge with peers. Businessmen or advertisers looking to promote their products or services to a targeted student audience.

1.4 Product Scope

The PeerTeach platform aims to provide students with a collaborative learning environment where they can share educational videos, access notes, and interact with their peers. Additionally, it offers advertisement options for local businesses to promote their products or services through student-generated content.

1.5 References

- youtube.com

2. Overall Description

2.1 Product Perspective

The PeerTeach platform is a standalone system that operates independently and does not require integration with other systems. It serves as an online medium for students to upload, share, and access educational videos, notes, and advertisements.

2.2 Product Functions

The key features of the PeerTeach platform include:
- User Registration and Profile Creation for students and businessmen.
- Video Upload and Organization for students.
- Search and Filter options to find relevant videos and students.
- Views and Likes tracking to gauge video popularity and user preferences.
- Notes attachment to videos for supplementary learning materials.
- Advertisement Integration for businessmen to promote products or services.

2.3 User Classes and Characteristics

There are two primary user classes in the system:
- Students: Users who upload and share educational videos and access content from their peers.
- Businessmen: Users who advertise their products or services through student-generated videos.

2.4 Operating Environment

The PeerTeach platform will operate as a web-based application accessible through standard web browsers on desktops and mobile devices.

2.5 Design and Implementation Constraints

- The platform should support common video and image formats for uploading and display.
- The system should be responsive and compatible with major web browsers.
- Secure storage and access controls should be implemented to protect user data and videos.
- All things will be implemented in MERN stack

2.6 Assumptions and Dependencies

- Users will have stable internet connections to upload, stream, and access videos.

- Users will provide accurate information during registration.
- The platform will rely on a reliable payment gateway for advertisement payments.

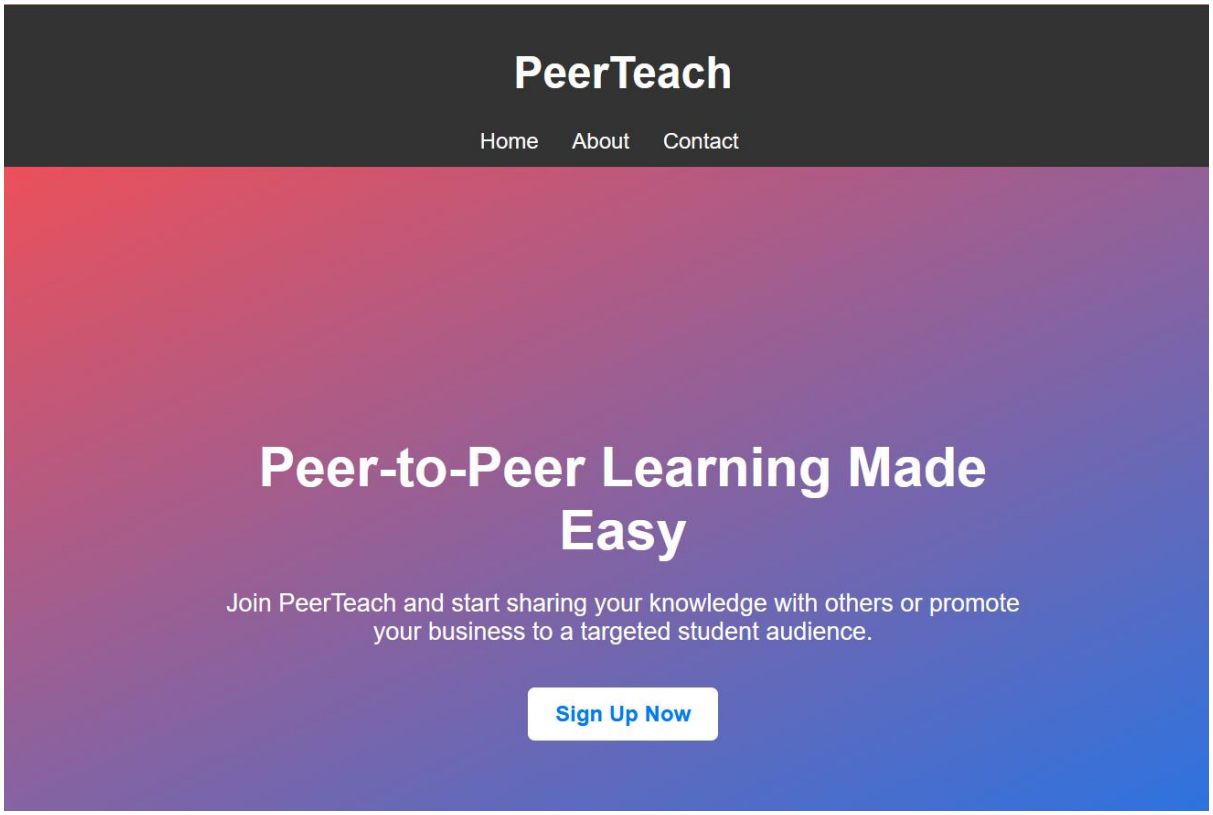
3. External Interface Requirements

3.1 User Interfaces

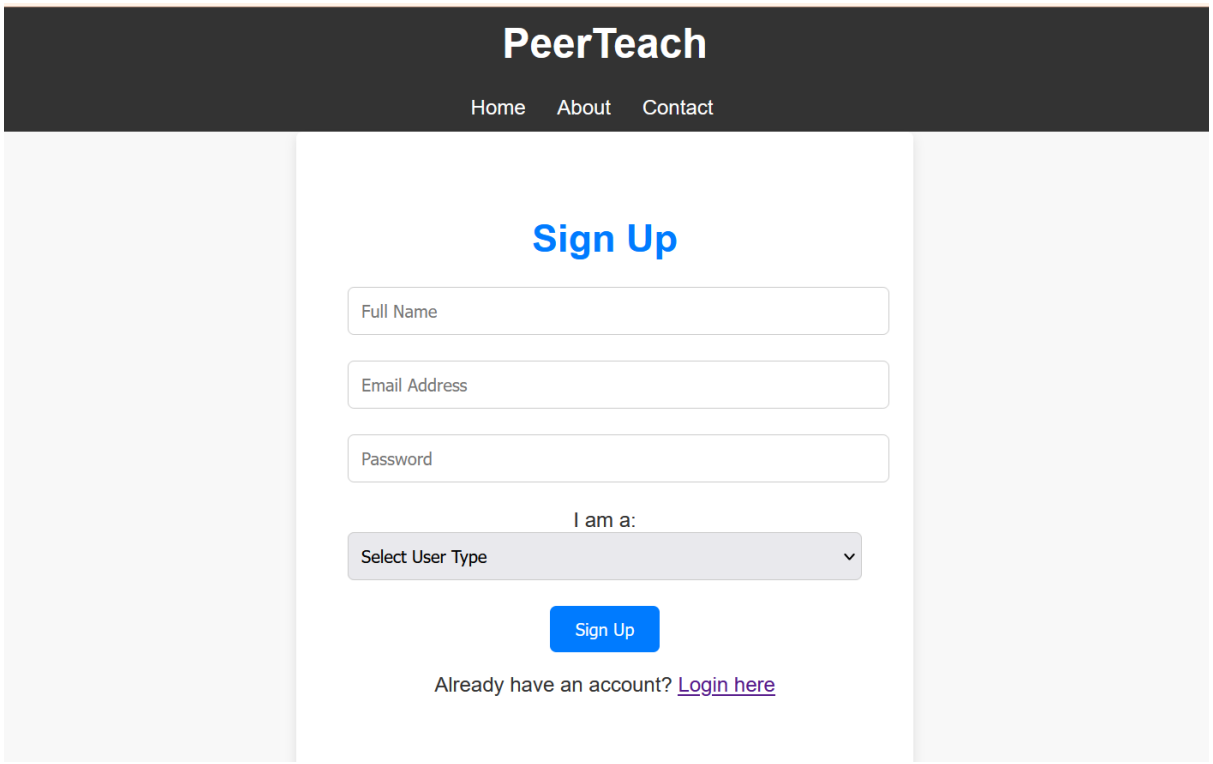
The user interfaces should be intuitive and user-friendly, featuring easy navigation and accessibility. It should include registration and login pages, video upload forms, search and filter options, profile management, and advertisement creation for businessmen.

Some basic home, sing-up and login pages will be look like as per the below:

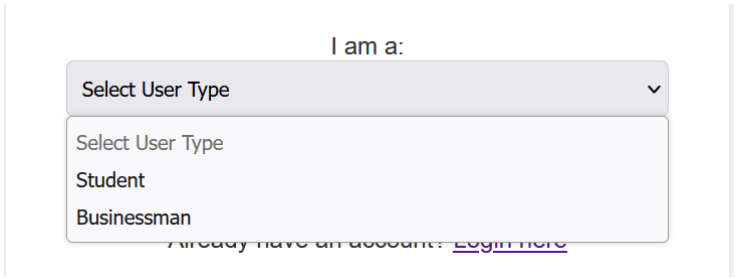
Home page:



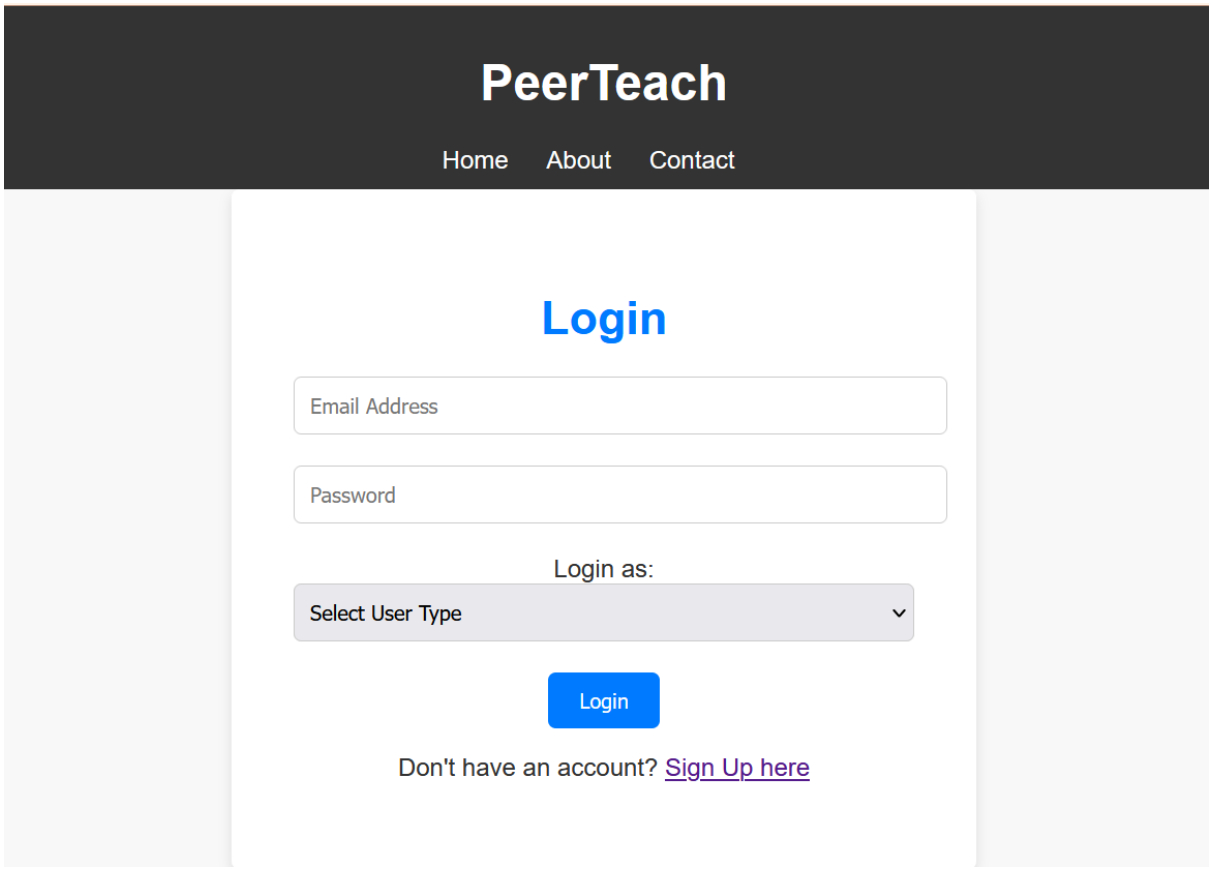
Sign-up page:



Categories:



Login page:



3.2 Hardware Interfaces

The platform will run on standard hardware components, including web servers and databases.
Needed components as per the below,

- Multi-core – 1.8 GHz processor or better
- 4GB RAM
- Windows 7, 8, 8.1, 10, or 11
- 80 GB hard drive or more (160 GB highly recommended)

3.3 Software Interfaces

- Whole project implemented in MERN stack
- MongoDB for database
- Platform for React, Node.js, ExpressJS

3.4 Communications Interfaces

The platform will communicate with users via HTTP/HTTPS for web interactions, and SMTP may be used for email notifications and communication.

4. System Features

Functional Requirements:

- **Students as users**

R1) User Registration and Profile Creation as a student

R1.1) The system shall provide a user registration feature where users can create a new account.

R1.2) The system shall validate the uniqueness of usernames during the registration process.

R1.3) The system shall require users to provide essential information such as name, email address, and password during registration.

R1.4) The system shall allow users to create and update their profiles by providing additional information such as profile picture and bio.

R2) Video Upload and Organization

R2.1) The system shall allow users to upload educational videos to the platform.

R2.2) The system shall support common video formats, such as MP4 and AVI, for video uploads.

R2.3) The system shall provide users with the ability to organize their uploaded videos into proper categories as per their college, course, branch, batch, semester, subject, topics, and date on which faculty covered that topic.

R2.4) The system shall provide facilities to users to add proper title and some needed information and hashtags in video's description part to make it available on particular search.

R2.5) The system shall ensure that uploaded videos are securely stored and accessible only to authorized users.

R3) Searching and Filtering

R3.1) The system shall provide a search functionality that allows users can find specific videos based on keywords, subjects, or tags.

R3.2) The system shall implement filtering options to enable users to refine their search results or directly reach to videos based on

parameters such as college, course, batch, semester, subject, topic, and date.

R3.3) The system shall display search results and filter options in a user-friendly manner, allowing users to easily navigate and explore the available content.

R4) Views and Likes

R4.1) The system shall track the number of views for each video and display this information to users.

R4.2) The system shall allow users to like or favourite videos to indicate their appreciation or interest.

R4.3) The system shall use views and likes as metrics to provide recommendations and suggestions to users based on their preferences.

R4.4) The system shall enable users to like, share, and bookmark videos to enhance engagement and collaboration among students.

R5) Providing Notes

R5.1) The system shall enable users to attach their notes to specific videos or courses, allowing other users to access and benefit from them.

R6) Advertisement Integration

R6.1) The system shall allow students to earn money by integrating an advertisement feature.

R6.2) The system shall allow students to select nearby shops or businesses to display advertisements within their videos.

R6.3) The system shall provide a revenue-sharing model where students earn a portion of the advertisement revenue generated from their videos.

- **Businessmen as users**

R1) User Registration and Profile Creation as a Businessman

R1.1) The system shall provide a user registration feature where users can create a new account.

R1.2) The system shall validate the uniqueness of usernames during the registration process.

R1.3) The system shall require users to provide essential information such as name, email address, and password during registration.

R1.4) The system shall allow users to create and update their profiles by providing additional information such as profile picture and bio.

R2) Video & Image Uploading

R2.1) The system shall allow users to upload videos or images of advertisement to the platform.

R2.2) The system shall support common video formats, such as MP4 and AVI, for video uploads and common image formats, such as jpg, png, jpeg, document.

R3) Searching and Filtering

R3.1) The system shall provide a search functionality that allows users to find specific students based on their views and likes of videos.

R3.2) The system shall implement filtering options to enable users to refine their search results or directly reach to student based on parameters such as area, likes, views, semester and other student details.

R3.3) The system shall display search results and filter options in a user-friendly manner, allowing users to easily navigate and explore the available content.

R4) Advertisement Option for Businessmen

R4.1) The system shall provide an advertisement feature that allows businessmen to promote their products or services in the video of a student who was chosen by him.

R4.2) The system shall allow businessmen to create and manage advertisement campaigns by specifying target audiences, budget, and campaign duration.

R4.3) The system shall ask for payment and using the payment functionality organization will pay the amount of advertisement.

R4.3) The system shall display advertisements in appropriate sections of the platform, ensuring they do not disrupt the user experience or impede access to content.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

- The platform should support concurrent user access and provide responsive performance even during peak usage times.
- Video streaming and playback should be smooth and free from buffering delays.

5.2 Safety Requirements

- The platform should implement secure authentication and access controls to protect user accounts and data.
- Uploaded videos and user information should be encrypted for privacy and security.

5.3 Security Requirements

- The system should have measures to prevent unauthorized access, data breaches, and cyber-attacks.
- Businessmen's payment details and transactions must be securely processed and stored.

5.4 Software Quality Attributes

- The platform should be tested thoroughly for usability, functionality, and performance.
- The system should have a user-friendly and aesthetically pleasing design.

5.5 Business Rules

- Students can only upload videos related to educational content.
- Businessmen can only advertise products or services through approved channels.