CEN 308 SOFTWARE ENGINEERING

PROJECT DOCUMENTATION

Teach Me

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1. Introduction

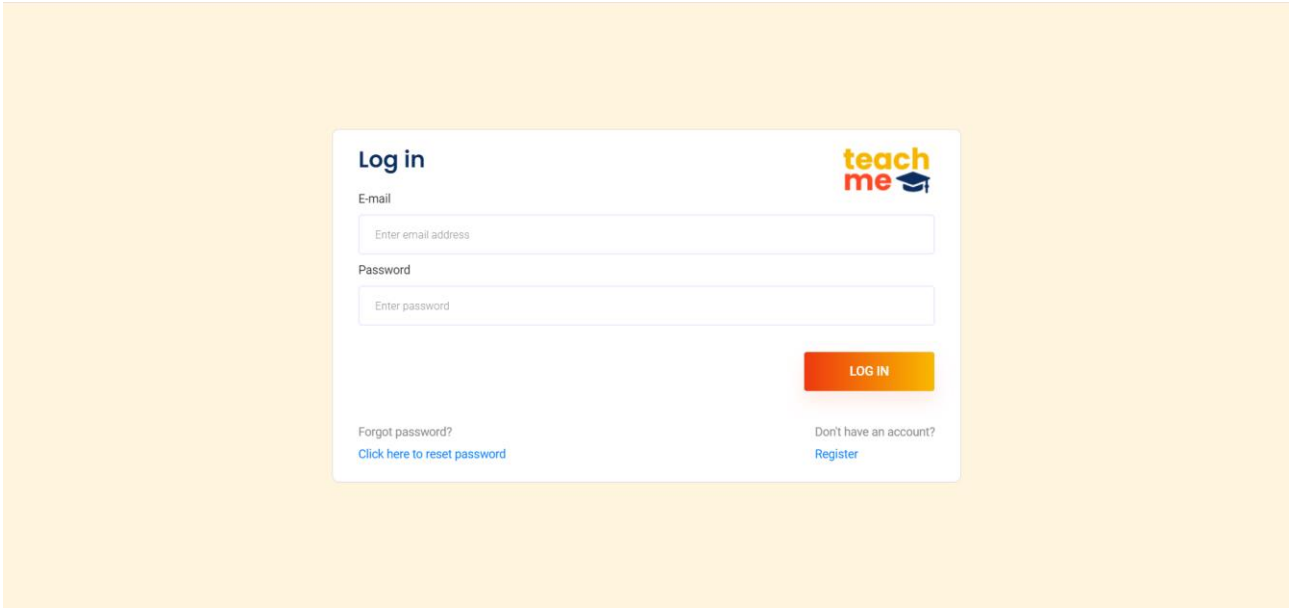
1.1. About the Project

Online learning and examination system to allow everyone a chance to learn efficiently. Online examination service will make it easier for professors to create exams, grade their students and to provide the best experience possible.

Project URL: https://admirsahman.software/

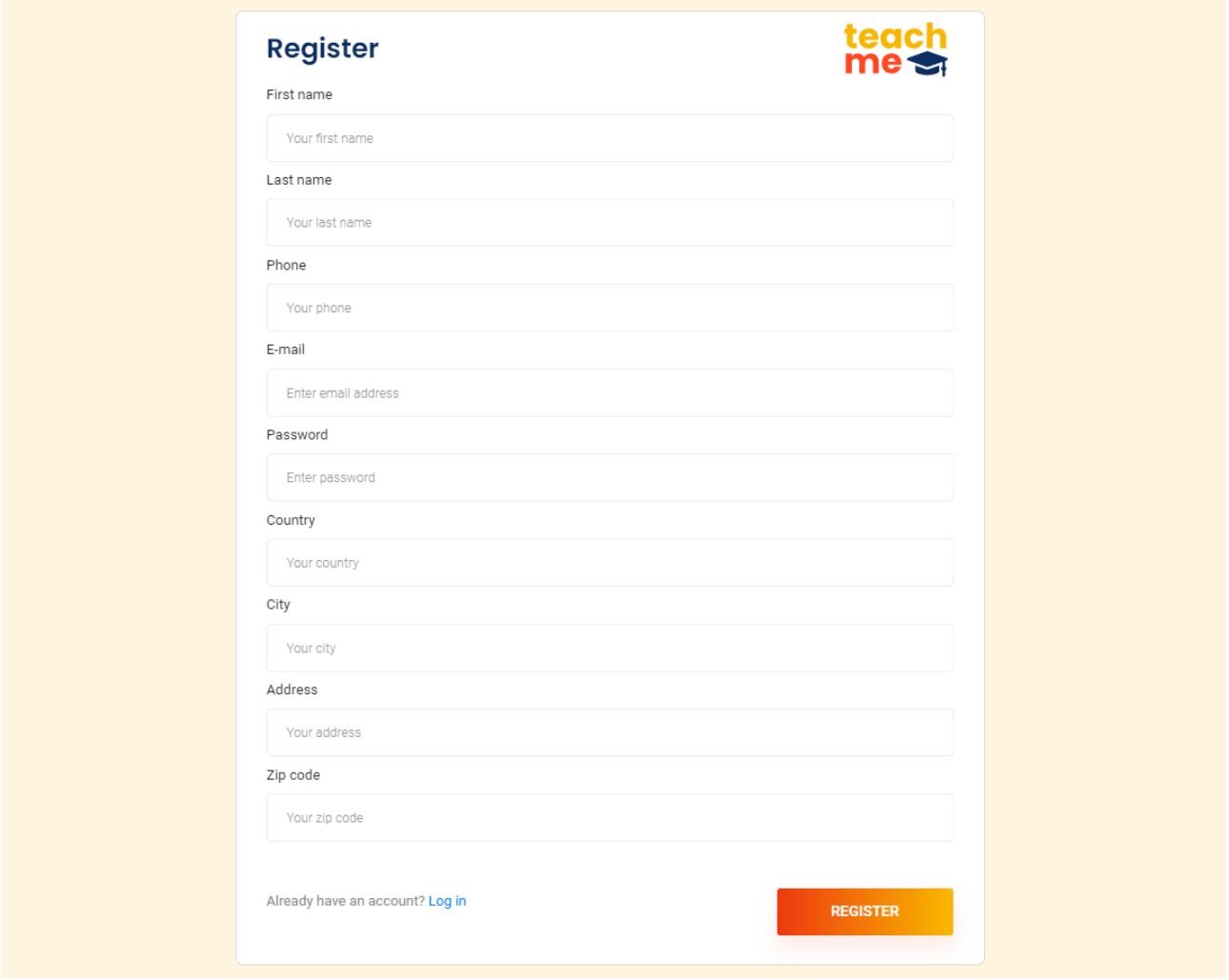
1.2. Project Functionalities and Screenshots

- **Login**
  Login functionality to allow the user to login in order to view the content of the site. On successful login the user role gets encoded in the JWT together with the JWT duration.

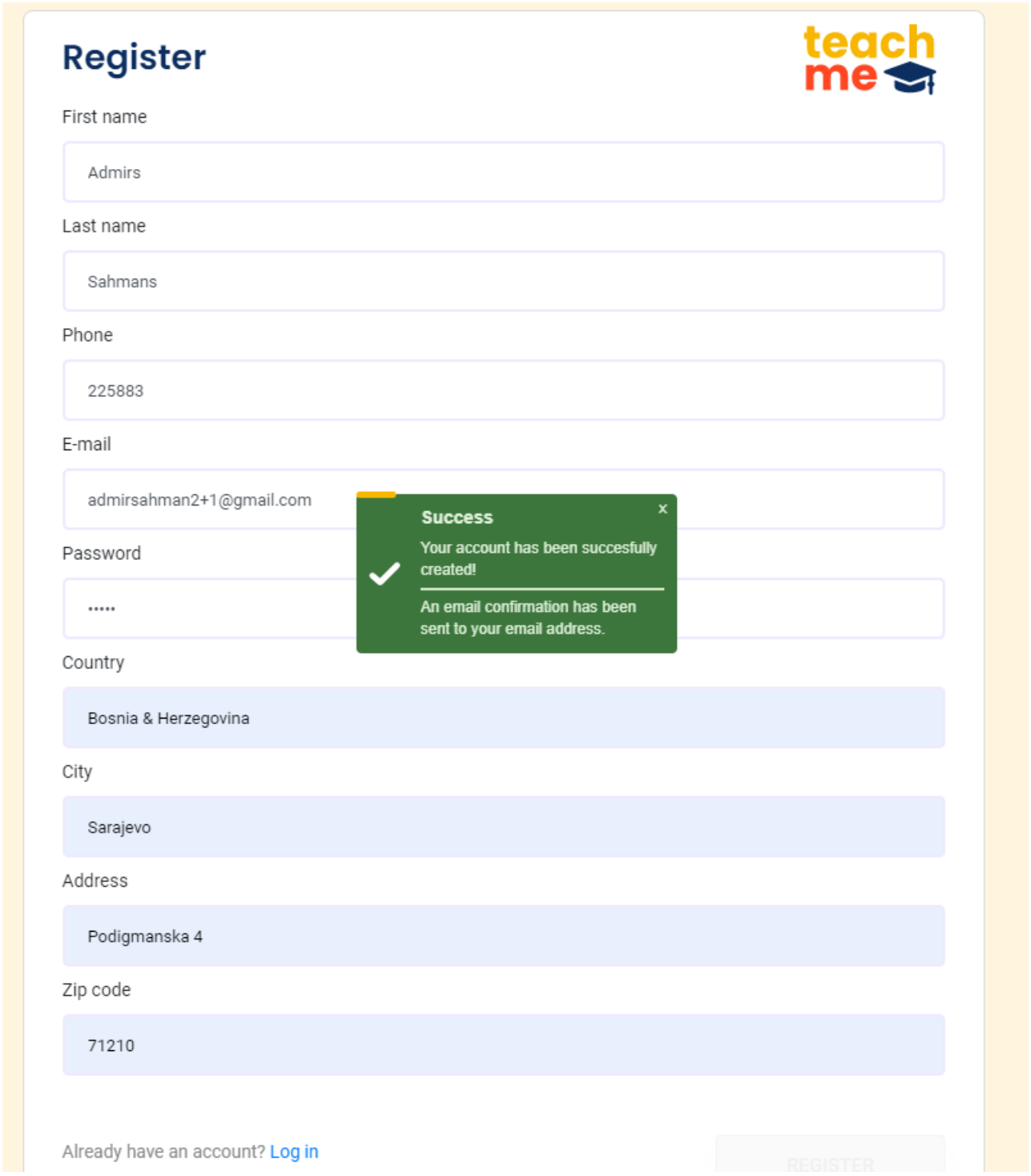


- **Register**

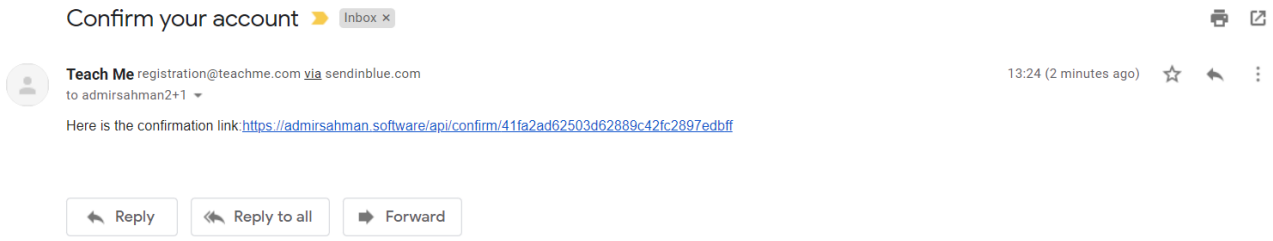
  In order for the user to be able to login, the user must first register on the site. After registering the user will be asked to confirm their account through email. For localhost SMTP I am using gmail smtp and for production environment sendinblue smtp is used instead.



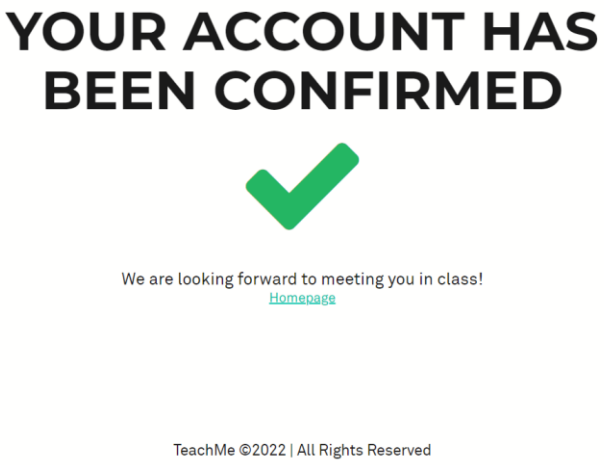
On successful registration toaster success message will be displayed to the user and an email confirmation will be sent to the user.



The confirmation email will have the confirmation link which will confirm user account and activate the account in order for the user to be able to log in

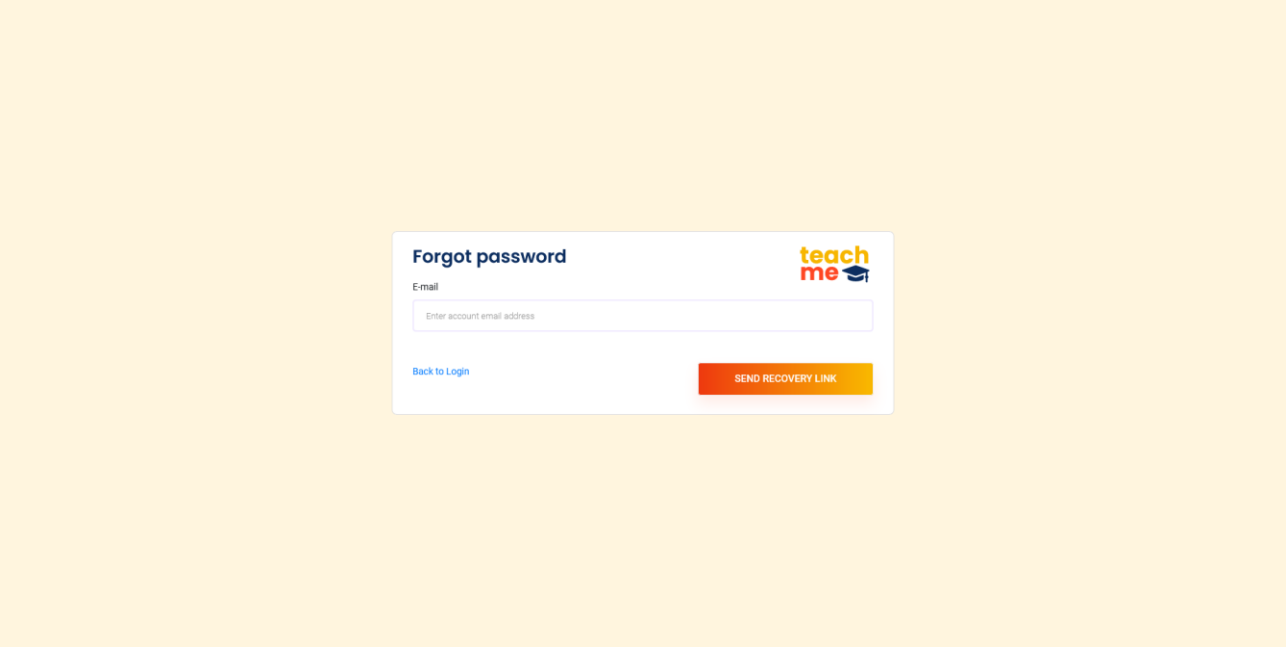


When the user clicks on the link, the account confirmed page will be rendered to the user to let the user know that their account has been confirmed.

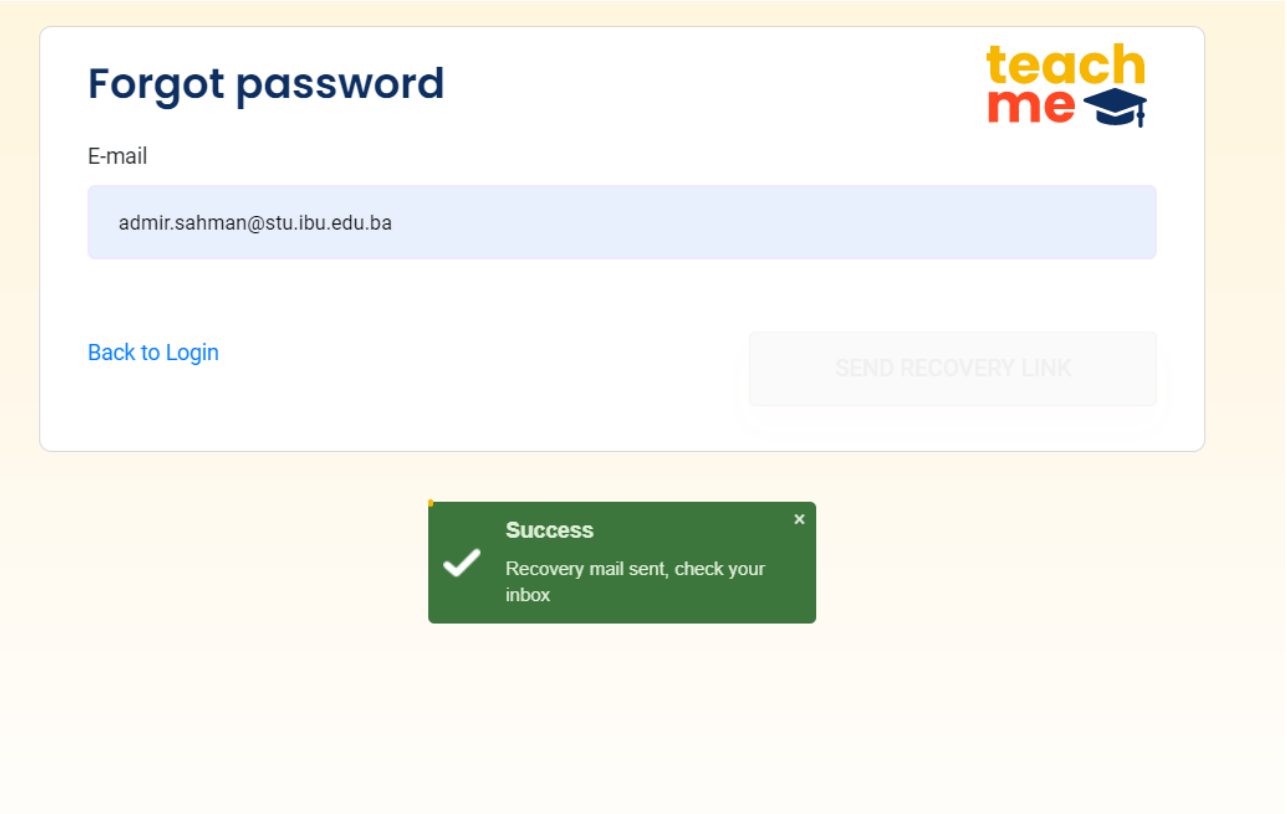


- **Forgot password**

  Functionality if the user forgets their password

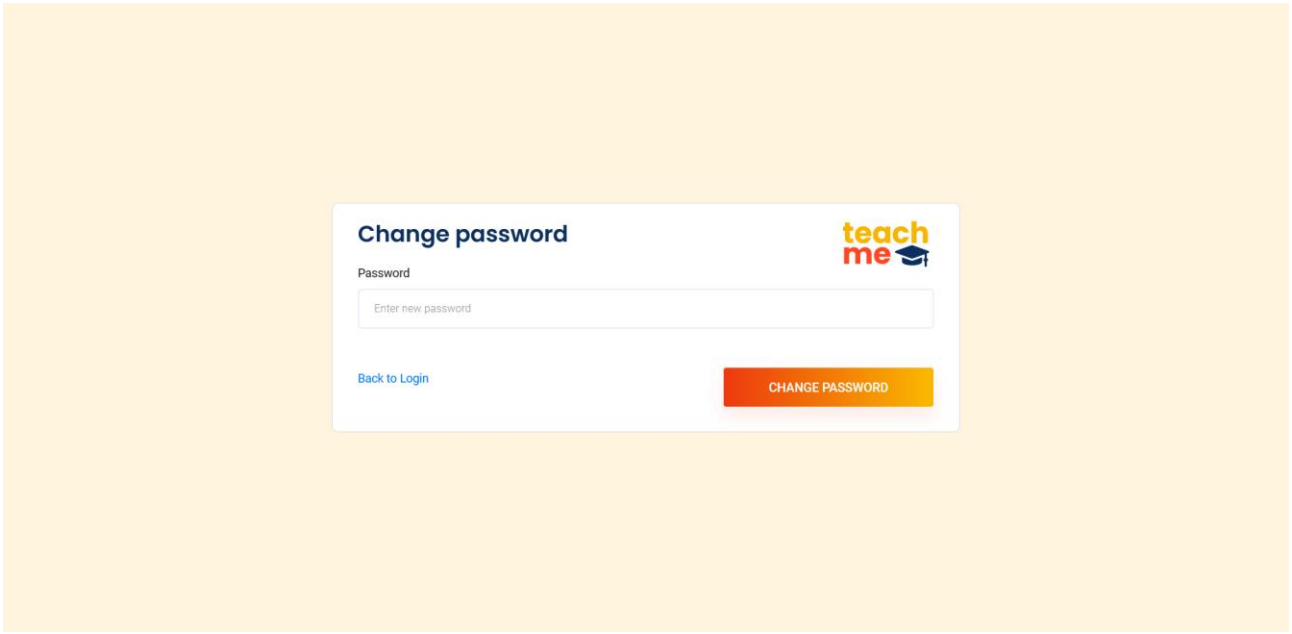


Once the user enters their email in the forgot password form on success the toaster success message will be displayed and an email will be sent to user's email address



- **Change password**

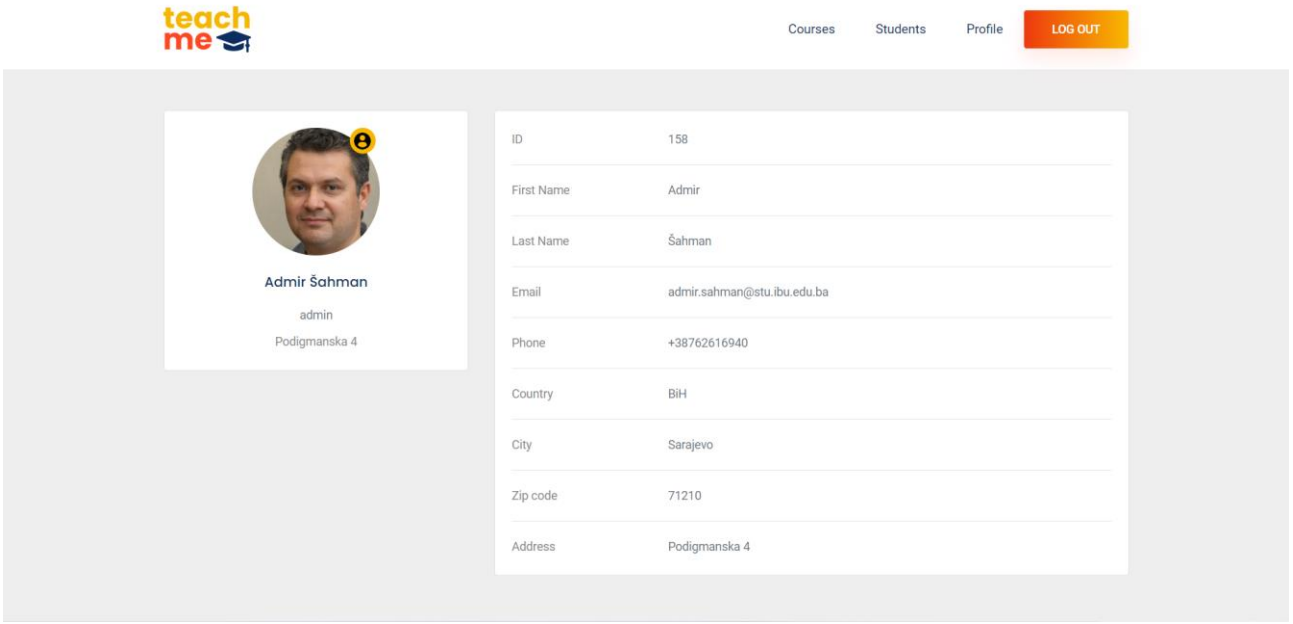
  When the user opens up the recovery link from the received recovery email sent through sendinblue smtp, the user will be presented with change password form. On entering the new password and submitting the form, a toaster success message will be displayed to the user and the user will be able to log in with the new password after that.



- **Profile**

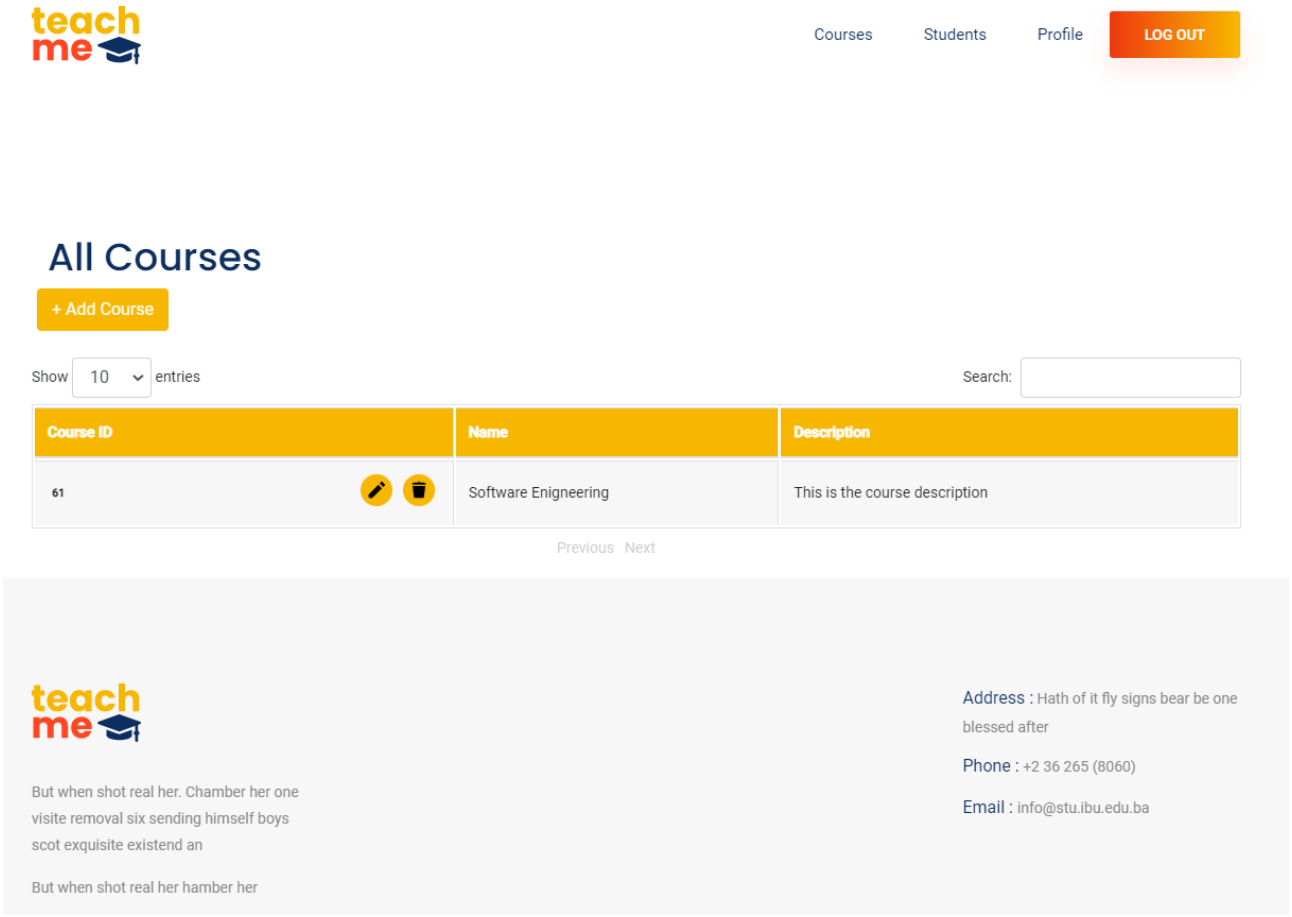
  Once the user logs in to the site successfully, the user will be presented with profile page which contains all the user info from database, as well as the role of the user. User will be able to change their profile picture by pressing the button on the top right corner of the profile picture. On successfully uploading a new image for the profile picture an ajax call happens and the profile picture is changed asynchronously.

  Digital Ocean spaces is used to store the profile images of users and the service used for cloud object data storing is Amazon S3.

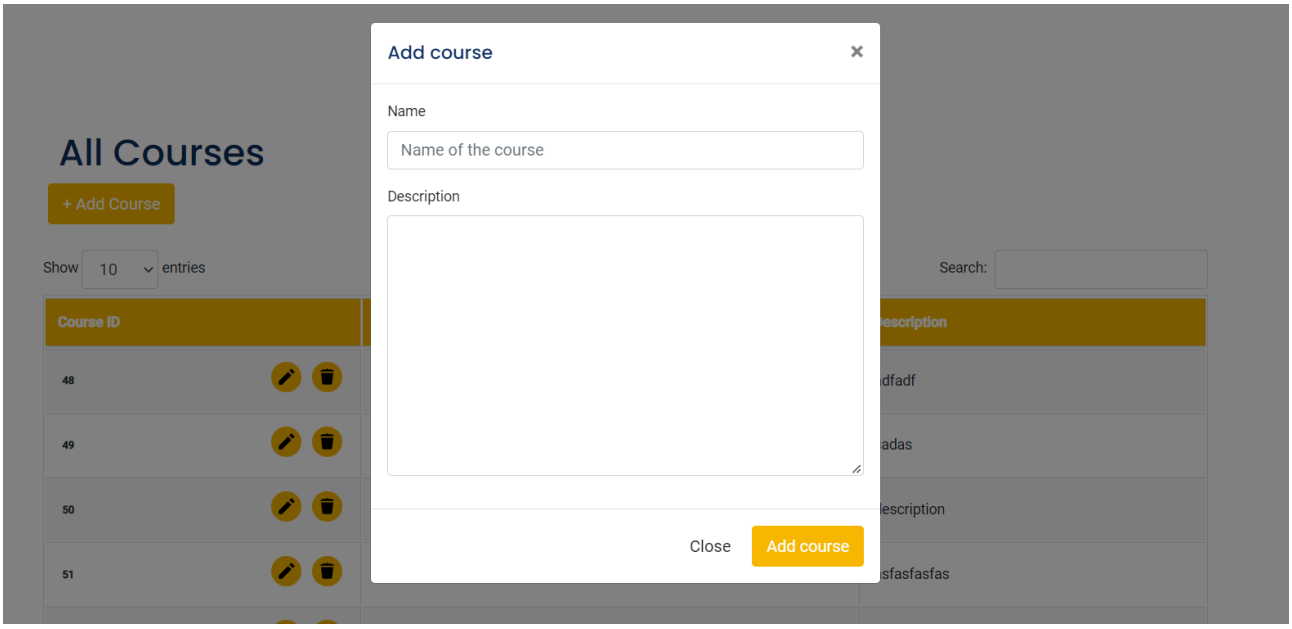


- **Courses(admin view)**

  In courses admin view the user with the role of admin will be able to add, edit and delete the courses.

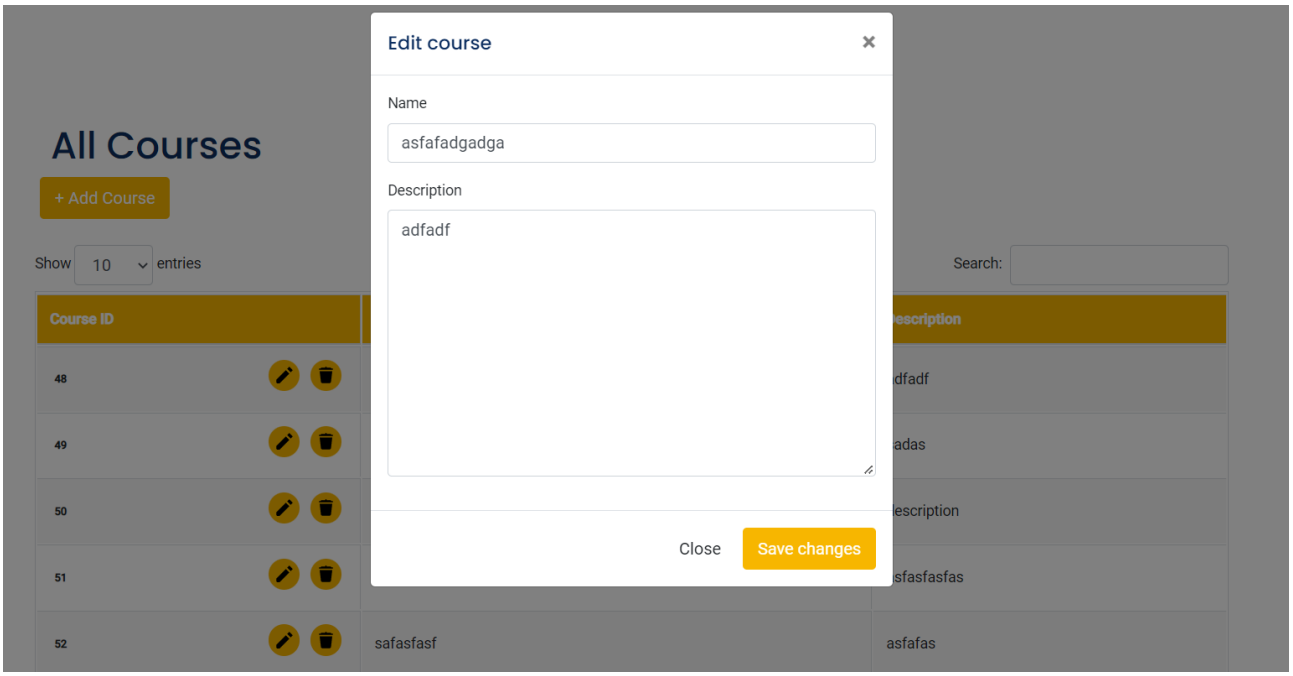


On add course button click, a modal form pops up with course name and course description inputs.



On success the course will be added asynchronously to the all courses datatable.

On pressing edit course button (pencil icon), user will be presented with the edit course modal which will be prefilled with course name and description.

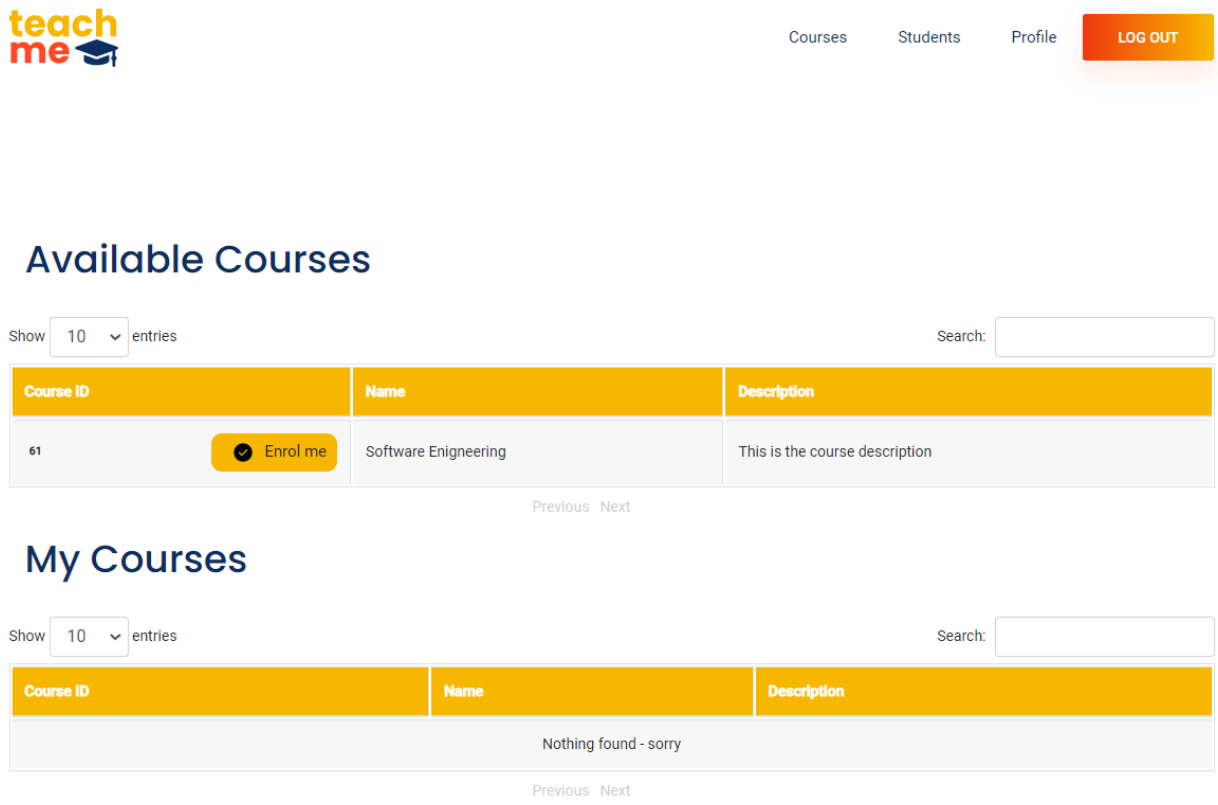


On clicking the delete course button (thrash bin icon), user will delete the course from the database. And a toaster success message will be displayed on success.

- **Courses(student view)**

If the user role is student, the user will be presented with two data tables Available courses and My courses. In the Available courses data table only courses that the user has not been enrolled to will be visible. And in my courses the courses that the user has enrolled to will be visible.

On pressing enroll me button the course will go from Available courses data table for the user, to My courses data table.



Available Courses

Show 10 entries Search:

Course ID	Name	Description
Nothing found - sorry		

Previous Next

My Courses

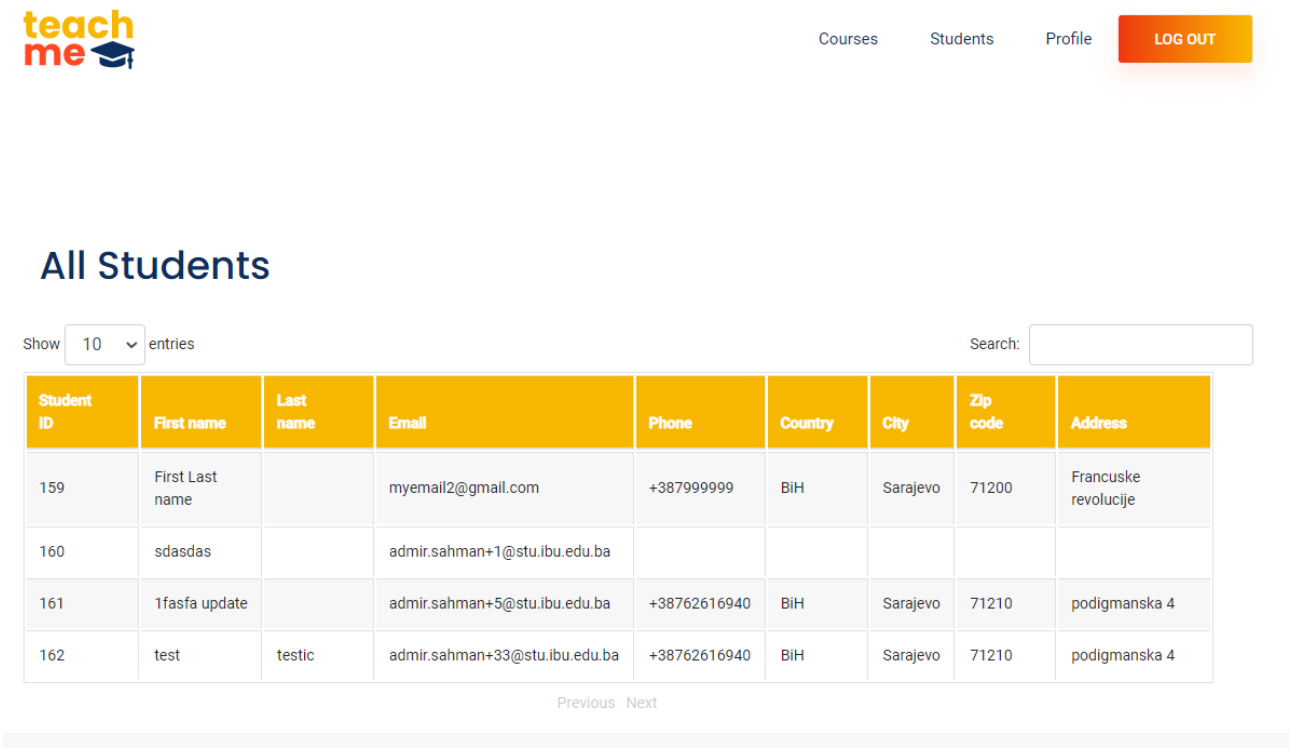
Show 10 entries Search:

Course ID	Name	Description
61 Unenrol me	Software Enigneering	This is the course description

Previous Next

- **Students(admin only)**

  The students page is exclusive to site admins, they will be able to see all the users inside the students data table.



2. Project Structure

2.1. Technologies

Our project was developed in WAMP stack. For backend we used PHP and on frontend we used PHP along with HTML and CSS. For database we used MySQL.

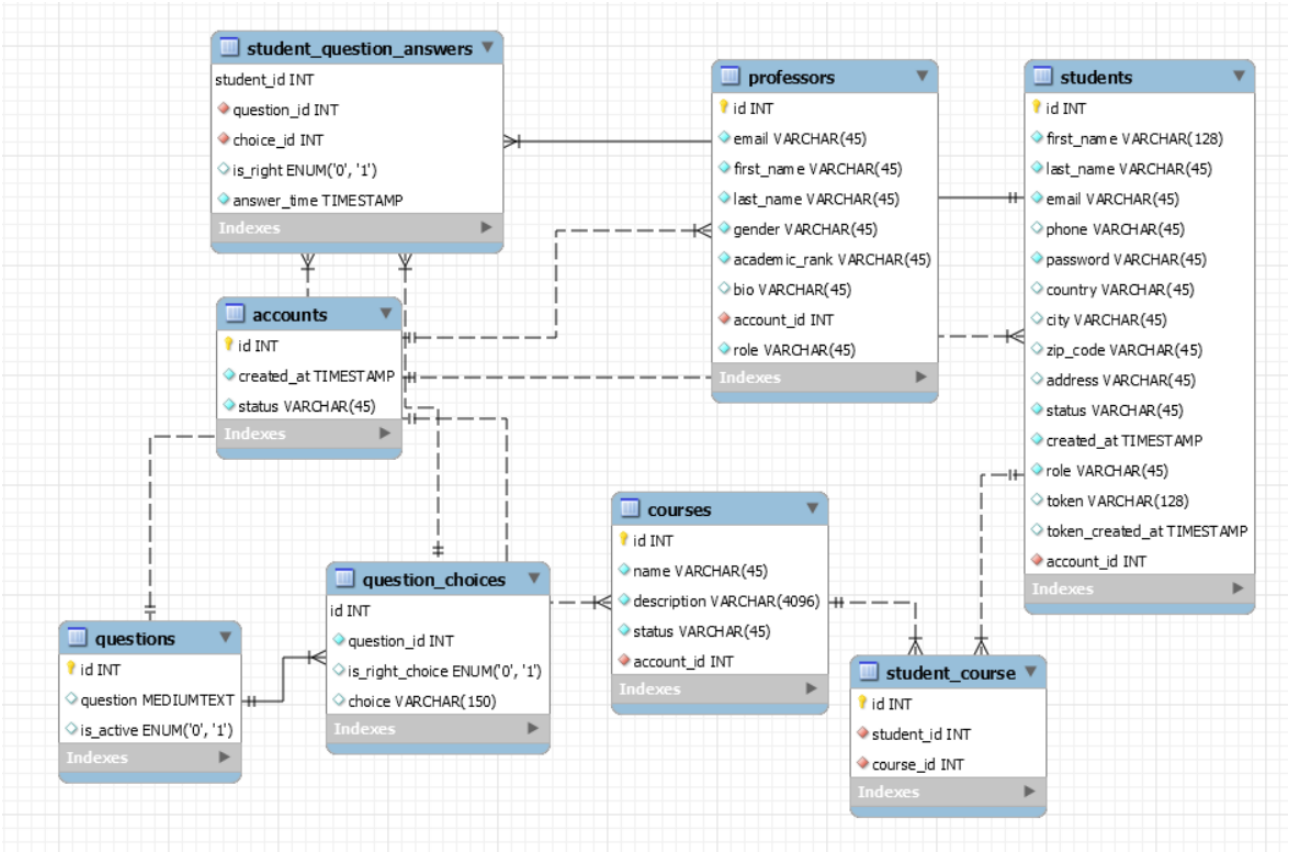
Coding standard – PSR-1

The project is hosted on Digital Ocean and uses a Name.com domain.

2.2. Database Entities

- accounts
- courses
- student_course
- students
- professors
- questions
- question_choices
- student_question_answers

Database design:



2.3. Architectural Pattern

Since we are using WAMP stack we have Windows at the lowest level with layered architecture. After Windows we have Apache and MySQL. At the next stage comes PHP. The process begins with requests for webpages from a user's browser being submitted to the Apache webserver. Apache transfers the request into PHP to load the file and run the code stored in it, if the request is for a PHP file. PHP also interacts with MySQL to capture some data in the code. In order to build the HTML that browsers use to view web pages, PHP then uses code in a file and the database details.

2.4. Design Patterns

We used singleton design pattern for the purposes of this project. We used the singleton design pattern so that we can gain a global access point to our instances.

3. Conclusion

It was a challenging task to do, but overall it significantly improved our skills. It gave us an ability to apply our theoretical knowledge in practical work.