



MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL
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Mini Project Report
of
Internet Technologies Lab (CSE 3262)

Class Manager (EduAdmin)

SUBMITTED
BY

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Manipal
00/00/2023

CERTIFICATE

This is to certify that the project titled **MiniProject Title** is a record of the bonafide work done by **Aditi Shrivastava (210905244)** and **Vrindavaneshwari Subramanian (210905198)** submitted in partial fulfilment of the requirements for the award of the Degree of Bachelor of Technology (B.Tech.) in COMPUTER SCIENCE & ENGINEERING of Manipal Institute of Technology, Manipal, Karnataka, (A Constituent Institute of Manipal Academy of Higher Education), during the academic year 2022-2023.

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Introduction

In today's world, where technology is changing everything, blending it with education is critical to making learning more engaging and effective. The "EduAdmin Student-Teacher Portal" is a big step in this direction. It's a user-friendly website designed to make classrooms run smoother, help teachers and students communicate better, and make learning more interactive and fun.

This portal has many valuable features. Teachers can easily send out quick updates and chat directly with students. On the other hand, students can stay updated with class news and even message their teachers for any help they need. All these features are aimed at making the learning experience smoother and more enjoyable for everyone involved.

Everything in the portal is designed with the user in mind. It's made to be simple to use yet powerful enough to handle all classroom needs. By using the latest web technology and focusing on what users really need, the portal aims to raise the bar for what educational tools can achieve.

In simple words, the "EduAdmin Student-Teacher Portal" is all about making education better with the help of technology. It shows how tech can bring positive changes to education, making it more engaging and beneficial for students and teachers everywhere. It's a step towards a future where learning is more interactive, accessible, and enjoyable for everyone.

Problem Statement and Objectives

Problem statement -

The traditional educational ecosystem often grapples with challenges stemming from fragmented management systems, inadequate communication channels, and the absence of centralised platforms, leading to operational inefficiencies and diminished user experiences. These limitations underscore the imperative need for a holistic, integrated and technologically advanced solution tailored to address the unique demands of modern-day educational institutions.

Methodology

Frontend Development

- Base Template Structure

The frontend of the project uses Bootstrap 4 for styling, ensuring responsive design and a consistent user interface across different devices. The project utilizes various Bootstrap components and utility classes to structure the layout, including the navigation bar, sidebar, and alert messages.

```
<!-- Bootstrap CSS and JavaScript -->
<link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/4.5.0/css/boot
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.5.1/jquery.min.js"></scr
<script src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.16.0/umd/popper.min.
<script src="https://maxcdn.bootstrapcdn.com/bootstrap/4.5.0/js/bootstrap.min.js"></s
```

Styling and Fonts

Custom styles are defined in a single file named 'base.css'. Google Fonts and Font Awesome icons are used for typography and icons, respectively.

Backend Development

Django Framework

The backend of the project is developed using Django, a high-level Python web framework. Django's built-in authentication system is utilized for user registration, login, and profile management.

```
# Django URLs and Views
from django.urls import path
from . import views

urlpatterns = [
    path('login/', views.login_view, name='login'),
    path('signup/', views.signup_view, name='signup'),
    # ...
]
```

User Authentication

User authentication is implemented using Django's authentication system. User-specific views and functionalities are controlled based on user roles (student or teacher).

```
# User Authentication
from django.contrib.auth.models import AbstractUser

class CustomUser(AbstractUser):
    is_student = models.BooleanField(default=False)
    is_teacher = models.BooleanField(default=False)
```

Templates and Context

Django templates are used to render HTML pages, and context data is passed to templates to display dynamic content, such as user details, messages, and notices.

```
# Django Views
def login_view(request):
    # ...
    return render(request, 'login.html', context)

def signup_view(request):
    # ...
    return render(request, 'signup.html', context)
```

Database

Models

The project uses Django's ORM to define database models for storing user profiles, messages, notices, and other relevant data.

```
# Django Models
class Student(models.Model):
    user = models.OneToOneField(CustomUser, on_delete=models.CASCADE)
    # ...

class Teacher(models.Model):
    user = models.OneToOneField(CustomUser, on_delete=models.CASCADE)
    # ...
```

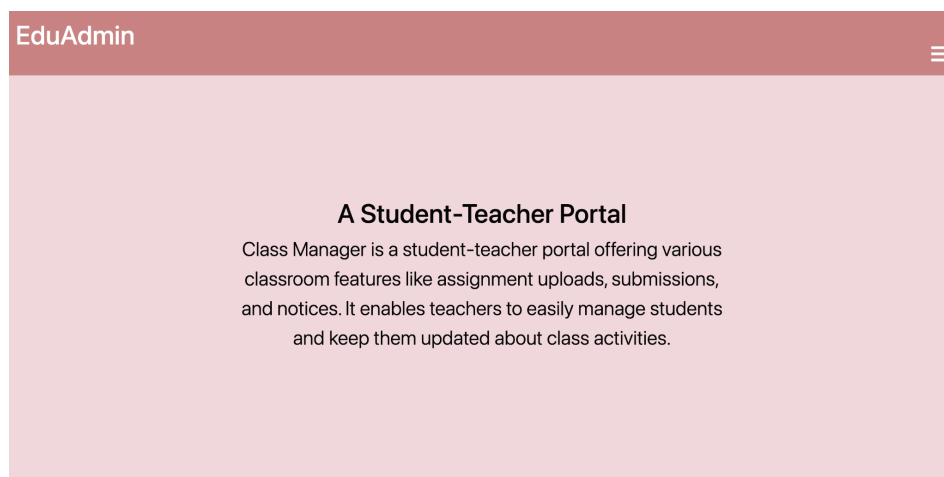
Migrations

Database migrations are managed using Django's migration commands to reflect changes in the database schema.

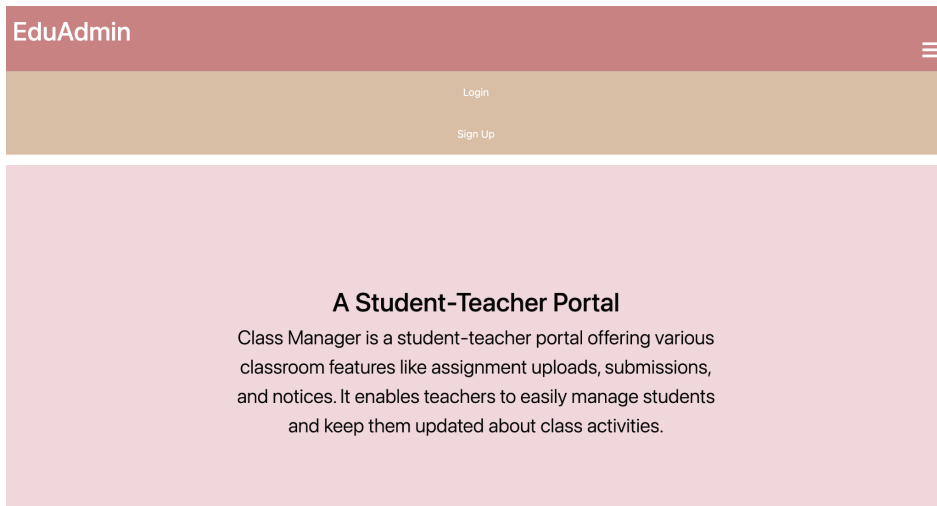
Results and Snapshots

The development of the student-teacher portal has resulted in a functional platform that facilitates effective communication and management between students and teachers. Key achievements include:

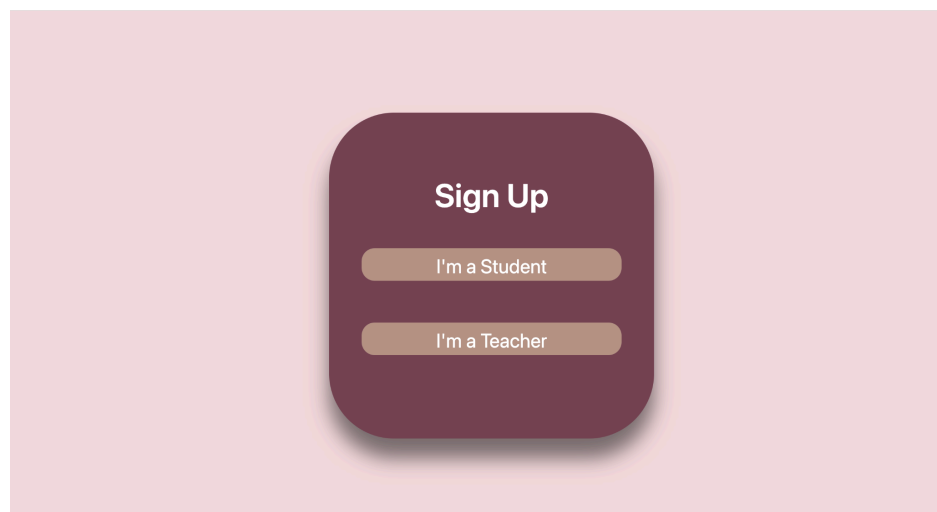
1. **User Authentication:** A secure authentication system has been implemented, allowing users to register, log in, and manage their profiles based on their roles as students or teachers.
2. **Dynamic Content Rendering:** The portal effectively renders dynamic content using Django templates, displaying personalized information such as user profiles, messages, and notices.
3. **Database Management:** Structured data storage has been achieved through Django's ORM, enabling seamless data retrieval and management.
4. **Responsive Design:** The use of Bootstrap 4 ensures a responsive design that adapts to various screen sizes, providing a consistent user experience across devices.



Home page



Dropdown menu

The image shows a sign-up form for a student. The form is titled 'Sign up as a Student.' and 'Fill out the form:'. It contains the following fields: 'Name:', 'Roll no:', 'Phone:', 'Email:', 'Username:', 'Password:', and 'Password confirmation:'. Each field has a text input. Below the 'Username:' field, there is a note: 'Required. 150 characters or fewer. Letters, digits and @,!,+,-/_ only.' Below the 'Password:' field, there is a note: 'Password can't be similar to your other fields and must contain atleast 8 characters.' Below the 'Password confirmation:' field, there is a note: 'Enter the same password as before, for verification.' At the bottom of the form is a 'Sign Up' button.

Sign up page for student

Thank you for registering.

EduAdmin



Profile

Class Notice

Teacher list

Logout

A Student-Teacher Portal

Class Manager is a student-teacher portal offering various classroom features like assignment uploads, submissions, and notices. It enables teachers to easily manage students and keep them updated about class activities

Drop down menu list

EduAdmin



Anuj Sharma

👤Username: anujsharma123

📖Subject Name: Maths

☎Phone: 5767392948

✉Email ID: anuj123@gmail.com

[Message](#)

Aashi Sharma

👤Username: aashi_123

📖Subject Name: Chemistry

☎Phone: 23232323

✉Email ID: aashi@gmail.com

[Message](#)

Megh Raval

👤Username: megh_123

📖Subject Name: Biology

☎Phone: 213345234422

✉Email ID: megh@gmail.com

[Message](#)

Pooja sharma

👤Username: pooja_123

📖Subject Name: Physics

☎Phone: 574837428

Sumit Sharma

👤Username: sumit_123

📖Subject Name: Python

☎Phone: 352248223

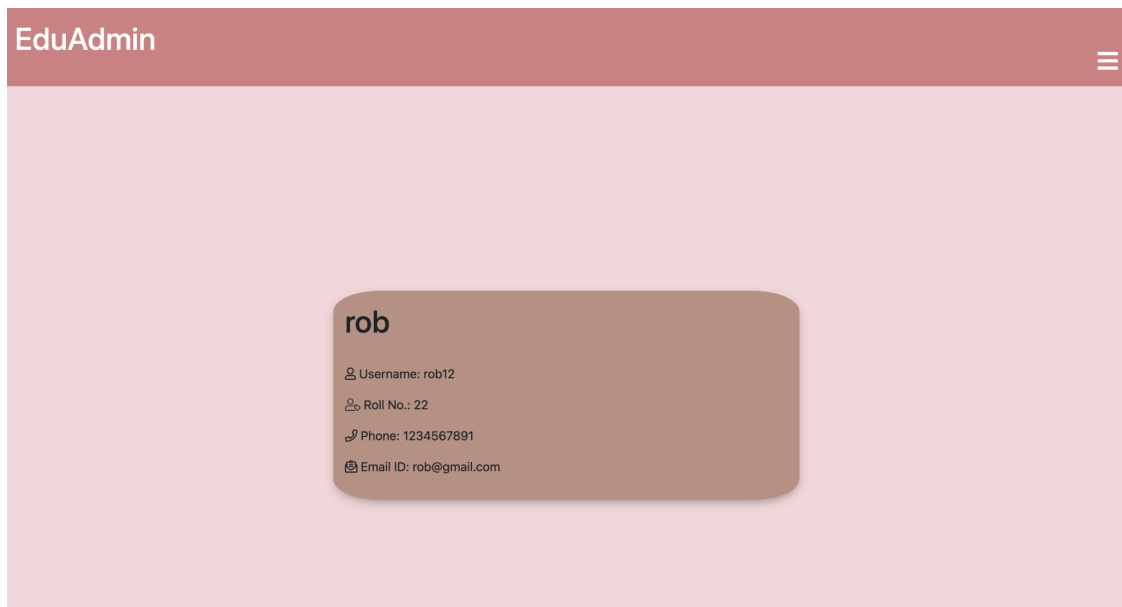
Saksham gupta

👤Username: saksham_123

📖Subject Name: C

☎Phone: 132438223

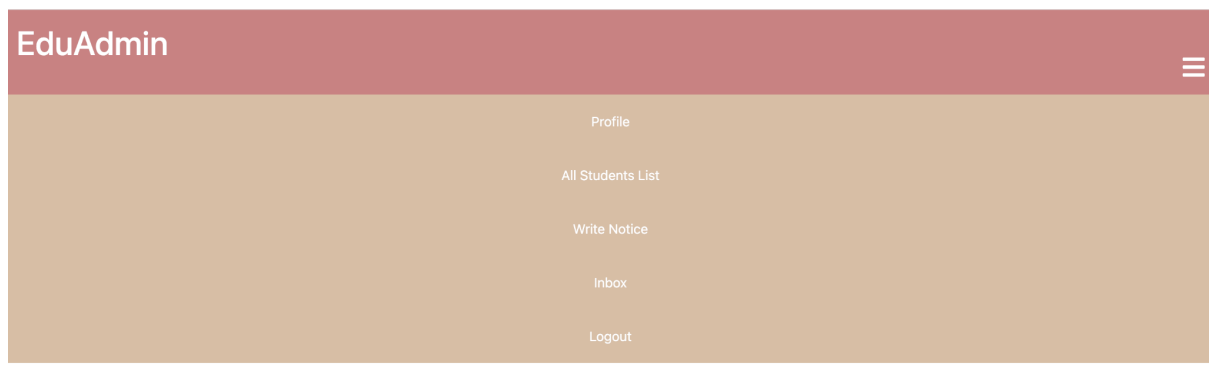
Teachers List



Profile page

The image shows a dark purple rounded rectangle centered on a light pink background. Inside the rectangle, the text "Sign Up as a teacher." is at the top. Below it are several form fields: "Name:" with the value "teach", "Subject name:" with the value "maths", "Phone:" with the value "1234759101", "Email:" with the value "teach@gmail.com", "Username:" with the value "teach3", "Password:" with a masked value "*****", and "Password confirmation:" with a masked value "*****". Below the password fields, there is a small text line: "Required. 150 characters or fewer. Letters, digits and @/./+/_ only." and a note: "Enter the same password as before, for verification." At the bottom of the form is a green "Sign Up" button and a link that says "Already have an account."

Teacher signup page



Teacher dropdown menu

**Shubh Gupta**

👤 Username: shubh_0405

📄 Roll No.: 1

📞 Phone: 7600088542

✉ Email ID: shubhngupta04@gmail.com

Akshat Gupta

👤 Username: akshat_1903

📄 Roll No.: 2

📞 Phone: 7684738472

✉ Email ID: akshatgupta@gmail.com

adi

👤 Username: adi123

📄 Roll No.: 22

📞 Phone: 1234567891

✉ Email ID: aodubfw@gmail.com

rob

👤 Username: rob12

📄 Roll No.: 22

📞 Phone: 1234567891

Dhruvil Dave

👤 Username: dhruvil_001

📄 Roll No.: 3

📞 Phone: 4563849472

hello1

👤 Username: hello1

📄 Roll No.: 34

📞 Phone: 8433807756

Student list

**teach**

👤 Username: teach3

📖 Subject Name: maths

📞 Phone: 1234759101

✉ Email ID: teach@gmail.com

Teacher profile

Write your notice here!

Notice will be sent to every student in your class.

Message:

Add Notice

Writing a notice

Conclusion

In conclusion, the development of the student-teacher portal has been successfully executed with a focus on user experience and functionality. The frontend, built using Bootstrap 4, offers a responsive and intuitive interface that ensures a seamless experience across various devices. The backend, powered by Django, provides robust authentication, dynamic content rendering, and efficient database management through Django's ORM.

Key achievements of the project include:

- **User Authentication:** A secure and reliable authentication system that allows users to register, login, and manage their profiles based on their roles as students or teachers.
- **Dynamic Content Rendering:** Effective use of Django templates to display dynamic content such as user profiles, messages, and notices, ensuring a personalized user experience.
- **Database Management:** Structured data storage and seamless database migrations using Django's ORM, ensuring data integrity and scalability.

Future Work and Limitations

Future Work

Additional Features

1. Assignment Management: Implement a feature for teachers to upload assignments and for students to submit their completed assignments online.
2. Discussion Forum: Create a platform where students and teachers can engage in academic discussions, ask questions, and share resources.
3. Gradebook: Develop a gradebook feature for teachers to manage and update students' grades, providing students with a transparent view of their academic progress.
- 4.. Analytics Dashboard: Implement an analytics dashboard for teachers to track student performance, assignment submissions, and class participation.

User Experience Enhancements

1. Interactive UI: Enhance the user interface with interactive elements and animations to make the portal more engaging.
2. Accessibility: Ensure the portal is accessible to users with disabilities by incorporating accessibility features and conducting usability testing.
3. Mobile App: Develop a mobile application version of the portal to provide users with convenient access to the platform on their smartphones and tablets.

Limitations

1. Scalability: The current database structure and architecture may face challenges in handling a large number of users and data as the platform grows.

2. Security: While Django's built-in authentication system provides a secure foundation, additional security measures such as two-factor authentication and data encryption may be required to further enhance the platform's security.

3. Performance: As the platform expands and more features are added, optimization of database queries and server performance may become essential to maintain optimal load times and responsiveness.

4. User Feedback: The absence of a feedback mechanism limits the ability to gather user insights and make data-driven improvements to the portal.

5. Compatibility: The portal's current design and features may not be fully compatible with older browsers or devices, potentially limiting accessibility for some users.