

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

“JNANA SANGAMA” BELAGAVI 590014



A DBMS Mini-Project Report

on

“Computer Classes Registration System”

BACHELOR OF ENGINEERING

In

Department of Computer Science and Engineering

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As a part of curriculum for

DBMS Laboratory with Mini Project - Subject code: 21CSL55

Submitted to

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
GM INSTITUTE OF TECHNOLOGY, DAVANGERE



(Affiliated to VTU, Belagavi, Approved by AICTE -New Delhi & Govt. of Karnataka)

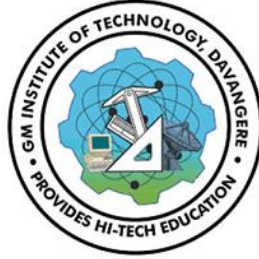
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CERTIFICATE

This is to certify that the DBMS Mini Project work entitled “**COMPUTER CLASSES REGISTRATION SYSTEM**” carried out by **RAHUL D R (4GM21CS075), SRUJAN K S (4GM21CS109), VEDANTH K N (4GM21CS118), YATHISH RAO M R (4GM21CS126)** Bonafede student of GMIT, Davangere. The Mini Project work carried out as a part of curriculum for 5th Semester course Database Management Laboratory with Mini Project having subject code 21CSL58, in department of Computer Science and Engineering, as per VTU, Belagavi for the academic year 2023-2024. It is certified that all the corrections and suggestions indicated for Internal assessment have been incorporated in the Report. The report prepared and project work carried out is satisfactory

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Name of the Examiners

Signature with Date

1.

2

ABSTRACT

The Computer Classes Registration System (EnrollEssy) is a web-based platform designed to streamline the process of registering for computer classes offered by educational institutions. Built using Python for the backend and Django as the web framework, the system provides an intuitive interface for students to browse available courses, enrol in desired classes, and manage their registrations.

Key features of the system include course categorization, instructor management, enrolment tracking, and secure user authentication. Administrators can efficiently manage course offerings, monitor enrolment status, and generate insightful reports to aid in decision-making. The system prioritizes data integrity, security, and scalability, ensuring the confidentiality of student information and the reliability of course management operations.

By leveraging Python's versatility and Django's robustness, the Computer Classes Registration System aims to enhance the user experience, optimize administrative processes, and foster a conducive learning environment for students pursuing computer education.

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CHAPTER-1

INTRODUCTION

1.1 Database management system

A database management system (DBMS) refers to the technology for creating and managing databases. DBMS is a software tool to organize (create, retrieve, update and manage) data in a database. The main aim of a DBMS is to supply a way to store and retrieve database information that is both convenient and efficient.

Database systems are meant to handle large collections of information. Management of data involves both defining structures for the storage of information and providing mechanisms that can do the manipulation those stored information. Moreover, the database system must ensure the safety of the information stored, despite system crashes or attempts at unauthorized access.

1.2 Problem Statement

The Computer Classes Registration System aims to streamline the process of managing registrations, course enrollments, and student information for computer classes offered by an educational institution or training center. The system will provide an efficient platform for both administrators and students to facilitate the registration process and manage course enrollments effectively.

1.3 Objective

The objective of the Computer Classes Registration System is to create a user-friendly and efficient platform that simplifies the process of registering for computer classes, improves course management, and enhances the overall student experience. By automating manual tasks and providing real-time access to course information, the system aims to streamline operations, reduce administrative overhead, and improve the quality of service for both students and administrators.

CHAPTER 2

DATABASE DESIGN

2.1 System Requirements:

2.1.1 Software Requirement:

The software requirements for the development of this project are:

- Software: Django
- Operating System: Windows 7,9,10,11
- Front End: HTML, CSS, JavaScript
- Programming Language: Python
- Data Base Environment: Object-Relational Mapping (ORM)
- Server: default wsgi server

2.1.2 Hardware Requirements:

The hardware required for the development of this project are:

- **Processor:** Standard processor with 1.6 GHz or more
- **RAM:** 512MB or more
- **Hard Disk:** 20GB or more
- **Monitor:** Standard Color Monitor

CONCEPTUAL DESIGN

2.2 E-R DIAGRAM:

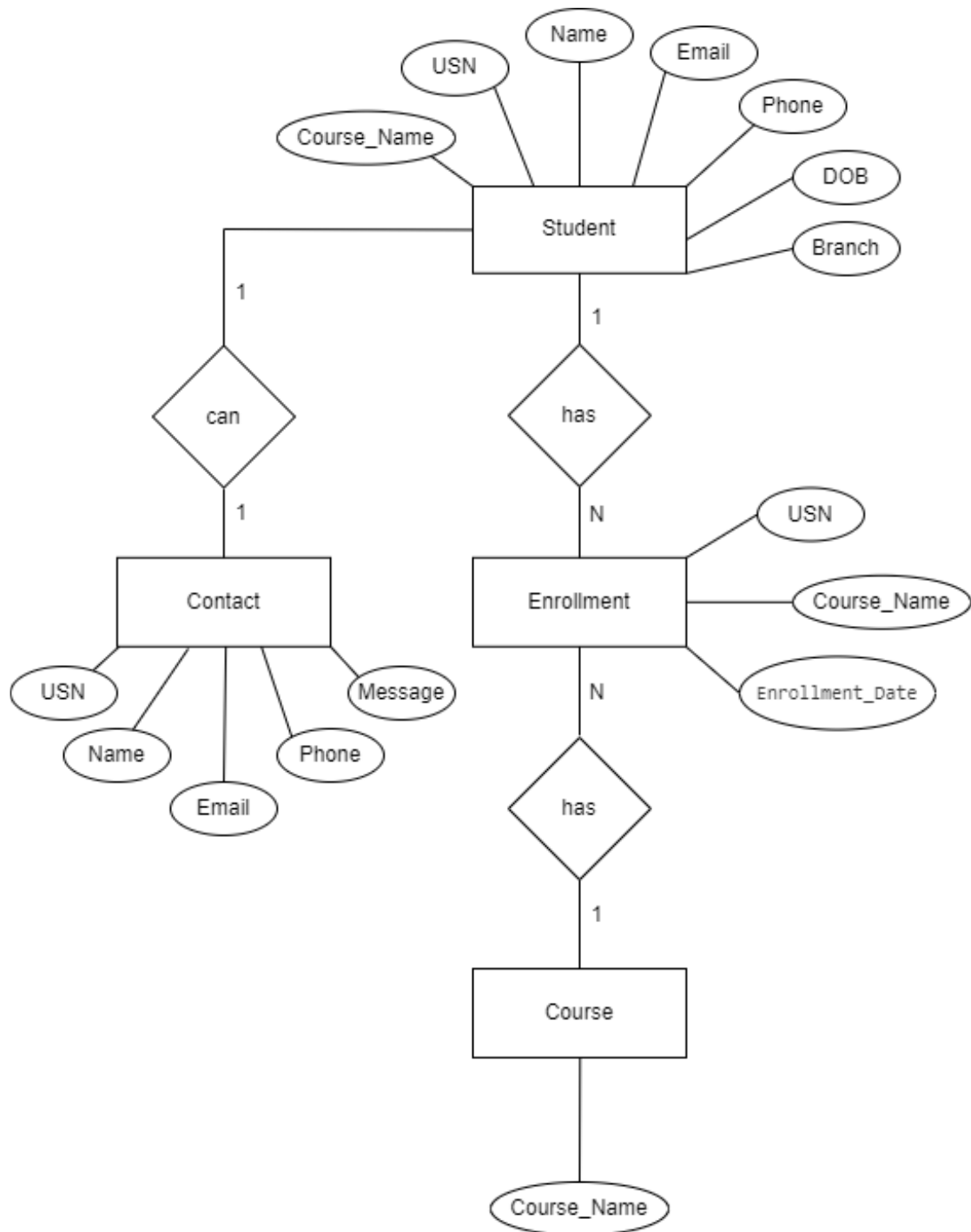


Fig 2.2.1: E-R Diagram of Computer Classes Registration System

2.3 SCHEMA DIAGRAM:

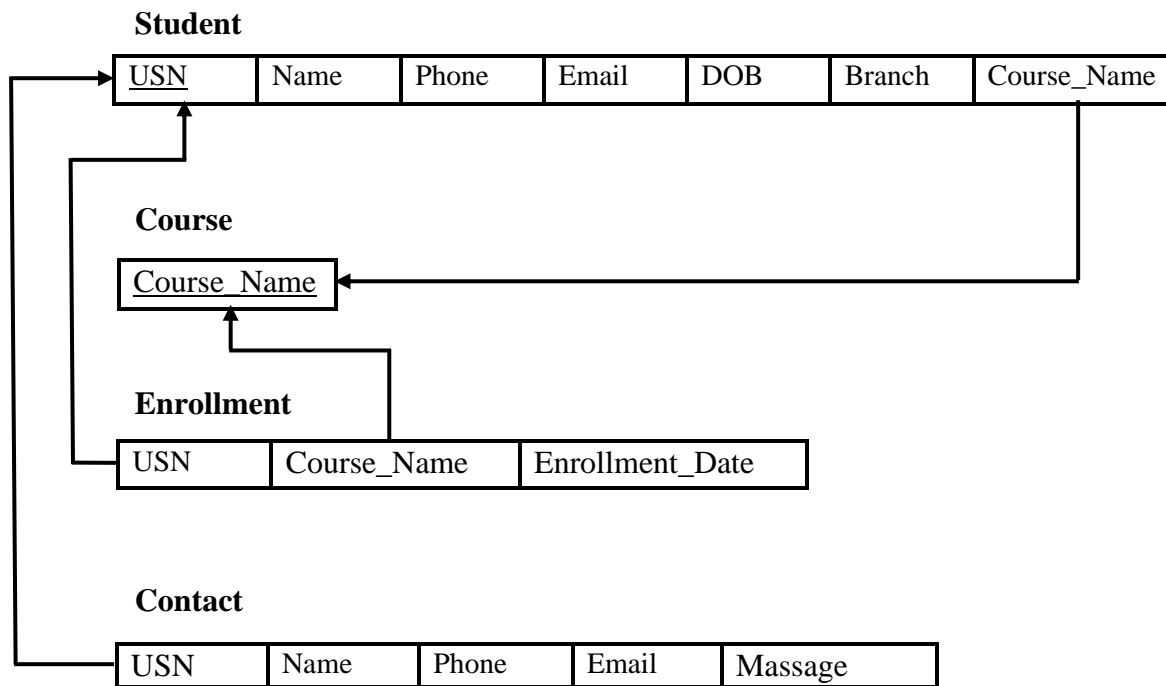


Fig 2.3.1: Schema Diagram of Computer Classes Registration System

CHAPTER 3

IMPLEMENTATION

3.1 FRONT END:

HTML:

HTML stands for Hyper Text Markup Language. It is used to design web pages using markup language. HTML is the combination of Hypertext and Markup language. Hypertext defines the link between the web pages. Markup language is used to define the text document within tag which defines the structure of web pages. HTML 5 is the fifth and current version of HTML. It has improved the markup available for documents and has introduced application programming interfaces (API) and Document Object Model (DOM)

CSS:

Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation of a document written in a markup language like HTML. CSS is a cornerstone technology of the World Wide Web, alongside HTML and JavaScript. CSS is designed to enable the separation of presentation and content, including layout, colors, and fonts.


JAVASCRIPT:


JavaScript is a high-level, interpreted scripting language that conforms to the ECMAScript specification. JavaScript has curly-bracket syntax, dynamic typing, prototype-based object orientation, and first-class functions. Alongside HTML and CSS, JavaScript is one of the core technologies of the World Wide Web. JavaScript enables interactive web pages and is an essential part of web applications.


3.2 BACK END:

For the backend of the Computer Classes Registration System, Python will be used as the primary programming language. Python offers a wealth of frameworks and tools for web development, making it a popular choice for building the server-side logic and managing databases.

Key components of the backend implementation using Python include:

 **Framework:** Django will be utilized as the web framework for the backend. Django provides a powerful and feature-rich environment for building web applications rapidly and efficiently. It includes built-in components for handling URL routing, database interactions, user authentication, and more.

 **Database:** Django supports various relational database management systems (RDBMS) such as PostgreSQL, MySQL, SQLite, and Oracle. The choice of database will depend on factors like scalability, performance, and project requirements.

 **ORM (Object-Relational Mapping):** Django's ORM simplifies the interaction with the database by allowing developers to work with database models using Python classes and objects. This abstraction layer facilitates database operations without writing raw SQL queries.

- ✚ **Views and Controllers:** In the Django framework, views represent the logic behind the web pages and controllers handle user requests. Python functions or classes are used to define views, which process requests, interact with models, and return responses to the client.
- ✚ **RESTful APIs (Application Programming Interfaces):** If needed, Django can be used to create RESTful APIs for integrating the system with other applications or services. Django Rest Framework (DRF) is a powerful toolkit for building APIs in Django, providing serialization, authentication, and other features out of the box.
- ✚ **Middleware:** Django middleware allows developers to modify request and response objects, perform authentication, logging, and other tasks at the middleware level.
- ✚ **Security:** Django includes built-in security features such as protection against common web vulnerabilities like SQL injection, cross-site scripting (XSS), and cross-site request forgery (CSRF).
- ✚ **Session Management and Authentication:** Django provides session management and authentication mechanisms to handle user sessions, user authentication, permissions, and access control.

3.3 SQL CODE IMPLEMENTATION:

Models.py

```
from django.db import models

# Create your models here.
class Course(models.Model):
    Course_Name = models.CharField(max_length=100, primary_key=True)

    def __str__(self):
        return self.Course_Name

class Student(models.Model):
    Course_Name = models.ForeignKey(Course, on_delete=models.CASCADE)
    USN = models.CharField(max_length=10, primary_key=True)
    name = models.CharField(max_length=20)
    Email = models.CharField(max_length=50)
    Phone = models.CharField(max_length=50, null=True)
    DOB = models.DateField(null=True, blank=True)
    Branch = models.CharField(max_length=20, null=True)

    def __str__(self):
        return f"{self.name} - {self.USN} - {self.Course_Name}"

class Enrollment(models.Model):
    USN = models.ForeignKey(Student, on_delete=models.CASCADE)
```

```
Course_Name = models.ForeignKey(Course, on_delete=models.CASCADE)
```

```
Enrollment_Date = models.DateField()
```

```
def __str__(self):  
    return f"{self.USN}"
```

```
class Contact(models.Model):  
    name = models.CharField(max_length=20)  
    email = models.CharField(max_length=50)  
    phone = models.CharField(max_length=50,null=True)  
    massege = models.CharField(max_length=1000,null=True)
```

```
def __str__(self):  
    return self.name
```

Views.py

```
from django.shortcuts import render, redirect, HttpResponseRedirect  
from datetime import datetime  
from Home.models import Contact, Student  
from django.contrib import messages
```

```
def index(request):  
    return render(request, 'index.html')
```

```
def course(request):  
    return render(request, 'course.html')
```

```
def about(request):  
    return render(request, 'about.html')
```

```
def faq(request):  
    return render(request, 'faq.html')
```

```
def contact(request):  
    if request.method == 'POST':  
  
        name = request.POST.get("name")  
        email = request.POST.get("email")  
        phone = request.POST.get("phone")  
        massege = request.POST.get("massege")  
  
        # Corrected to use Contact.objects.get_or_create()  
        contact=Contact.objects.create(  
            name=name,  
            email=email,  
            phone=phone,  
            massege=massege  
        )
```



```
contact.save()
messages.success(request, "Your Form has been sent")
return render(request, 'contact.html')

def student(request):
    if request.method == 'POST':
        Course_Name = request.POST.get("Course_Name")
        USN = request.POST.get("USN")
        name = request.POST.get("name")
        Email = request.POST.get("Email")
        Phone = request.POST.get("Phone")
        DOB = request.POST.get("DOB")
        Branch = request.POST.get("Branch")

        # Corrected to use Contact.objects.get_or_create()
        student=Student.objects.create(
            Course_Name = Course_Name,
            USN=USN,
            name=name,
            Email=Email,
            Phone=Phone,
            DOB=DOB,
            Branch=Branch
        )
        student.save()
        messages.success(request, "Your Form has been sent")
    return render(request, 'student.html')
```

3.4 OUTCOMES

Outcomes of our system:

-  **Efficient Registration Process:** The system should streamline the registration process for students interested in computer classes. This means reducing paperwork, minimizing errors, and making it easy for students to sign up for courses online.
-  **Improved Communication:** The system can facilitate better communication between students, instructors, and administrators. It should provide timely notifications about course updates, schedules, and important announcements.

CHAPTER 4

ADMIN SITE SNAPSHOT

4.1 LOGIN PAGE:

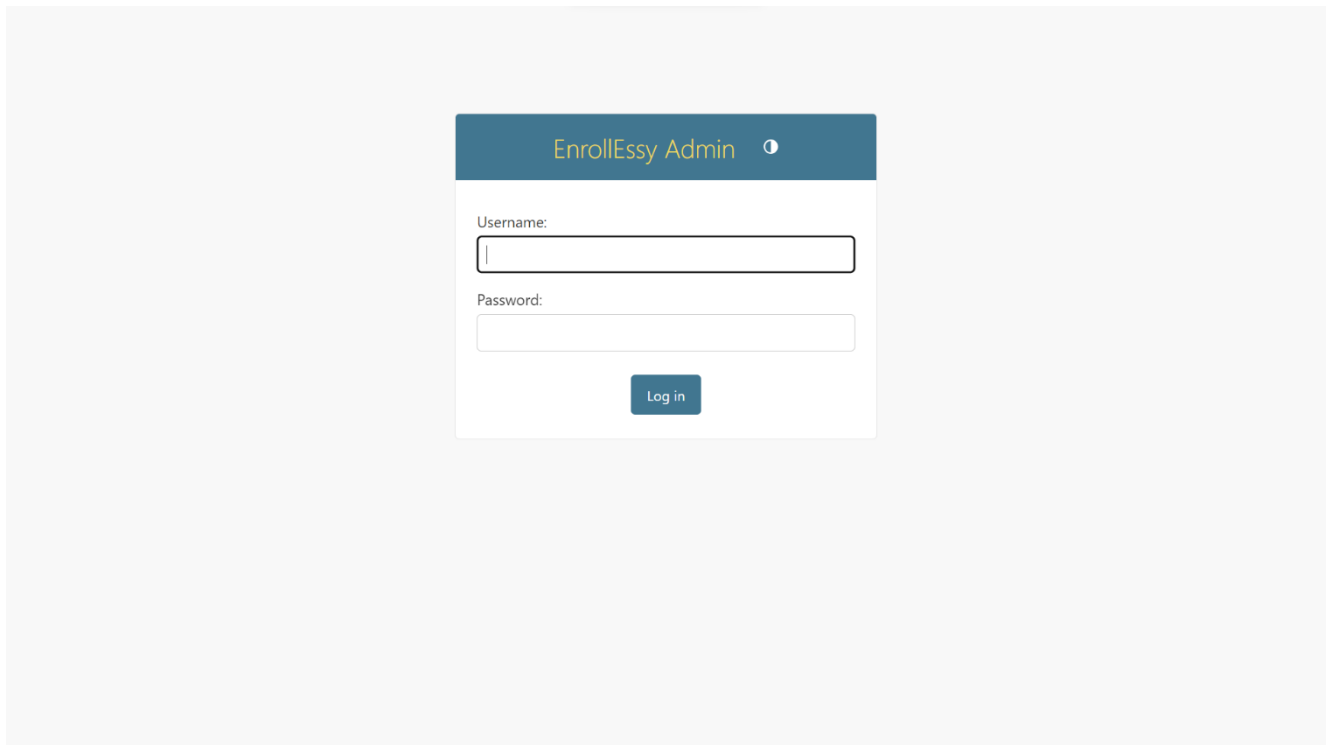


Fig 4.1: Admin Login Page

4.2 HOME PAGE:

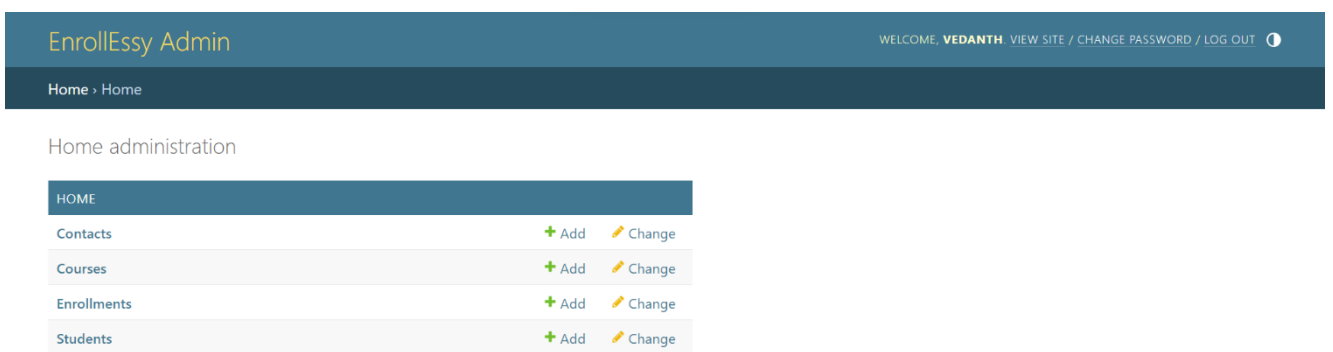


Fig 4.2: Admin Home Page

4.3 TABLES:

4.3.1 STUDENT:

The screenshot shows the 'Add student' form in the EnrollEssy Admin interface. The header bar is dark blue with 'EnrollEssy Admin' on the left and 'WELCOME, VEDANTH. VIEW SITE / CHANGE PASSWORD / LOG OUT' on the right. Below the header is a breadcrumb trail: 'Home > Home > Students > Add student'. The main content area is white and titled 'Add student'. It contains several input fields: 'Course Name' (a dropdown menu with a plus icon and an eye icon), 'USN' (a text input), 'Name' (a text input), 'Email' (a text input), 'Phone' (a text input), 'DOB' (a date picker with a calendar icon and a note: 'Note: You are 5.5 hours ahead of server time.'), and 'Branch' (a text input). At the bottom of the form are three buttons: 'SAVE', 'Save and add another', and 'Save and continue editing'.

Fig 4.3: Student Table

4.3.2 COURSE:

The screenshot shows the 'Add course' form in the EnrollEssy Admin interface. The header bar is dark blue with 'EnrollEssy Admin' on the left and 'WELCOME, VEDANTH. VIEW SITE / CHANGE PASSWORD / LOG OUT' on the right. Below the header is a breadcrumb trail: 'Home > Home > Courses > Add course'. The main content area is white and titled 'Add course'. It contains a single input field: 'Course Name' (a text input). At the bottom of the form are three buttons: 'SAVE', 'Save and add another', and 'Save and continue editing'.

Fig 4.4: Course Table

4.3.3 ENROLLMENT

EnrollEssy Admin

WELCOME, VEDANTH. [VIEW SITE](#) / [CHANGE PASSWORD](#) / [LOG OUT](#)

Home > Home > Enrollments > Add enrollment

Add enrollment

USN:

Course Name:

Enrollment Date:

Today

Note: You are 5.5 hours ahead of server time.

SAVE

Save and add another

Save and continue editing

Fig 4.5: Enrollment Table

4.3.4 CONTACT:

EnrollEssy Admin

WELCOME, VEDANTH. [VIEW SITE](#) / [CHANGE PASSWORD](#) / [LOG OUT](#)

Home > Home > Contacts > Add contact

Add contact

Name:

Email:

Phone:

Massege:

SAVE

Save and add another

Save and continue editing

Fig 4.6: Contact Table

4.4 INSERTIONS:

4.4.1 STUDENT:

The screenshot shows the 'EnrollEssy Admin' interface for managing students. The header bar is dark blue with the text 'EnrollEssy Admin' on the left and 'WELCOME, VEDANTH. VIEW SITE / CHANGE PASSWORD / LOG OUT' on the right. Below the header, a breadcrumb trail reads 'Home > Home > Students'. The main content area has a title 'Select student to change' and an 'ADD STUDENT +' button. Below this is an 'Action:' dropdown menu with a 'Go' button and a status '0 of 9 selected'. A list of 9 students is displayed, each with a checkbox and their name and course. The students are: Yathish Rao (Cyber Security), Vinay D B (Software Engineering), Veerendra N (Cloud Computing), Vedanth KN (Web Development), TM Sharath (Game Development), Srujan K S (Data Science and Machine Learning), Rohan R G (Database Management), Rahul D R (Mobile App Development), and Prajwal H (UI/UX Design). A '»' icon is to the left of the list. At the bottom, it says '9 students'.

EnrollEssy Admin WELCOME, VEDANTH. VIEW SITE / CHANGE PASSWORD / LOG OUT

Home > Home > Students

Select student to change ADD STUDENT +

Action: ----- Go 0 of 9 selected

☐ STUDENT

☐ Yathish Rao - 4GM21CS126 - Cyber Security

☐ Vinay D B - 4GM21CS122 - Software Engineering

☐ Veerendra N - 4GM21CS119 - Cloud Computing

☐ Vedanth KN - 4GM21CS118 - Web Development

☐ TM Sharath - 4GM21CS114 - Game Development

☐ Srujan K S - 4GM21CS109 - Data Science and Machine Learning

☐ Rohan R G - 4GM21CS084 - Database Management

☐ Rahul D R - 4GM21CS075 - Mobile App Developmente

☐ Prajwal H - 4GM21CS069 - UI/UX Design

9 students

Fig 4.7: Student Insertions

4.4.2 COURSE

The screenshot shows the 'EnrollEssy Admin' interface for managing courses. The header bar is dark blue with the text 'EnrollEssy Admin' on the left and 'WELCOME, VEDANTH. VIEW SITE / CHANGE PASSWORD / LOG OUT' on the right. Below the header, a breadcrumb trail reads 'Home > Home > Courses'. The main content area has a title 'Select course to change' and an 'ADD COURSE +' button. Below this is an 'Action:' dropdown menu with a 'Go' button and a status '0 of 9 selected'. A list of 9 courses is displayed, each with a checkbox and its name. The courses are: Web Development, UI/UX Design, Software Engineering, Mobile App Developmente, Game Development, Database Management, Data Science and Machine Learning, Cyber Security, and Cloud Computing. A '»' icon is to the left of the list. At the bottom, it says '9 courses'.

EnrollEssy Admin WELCOME, VEDANTH. VIEW SITE / CHANGE PASSWORD / LOG OUT

Home > Home > Courses

Select course to change ADD COURSE +

Action: ----- Go 0 of 9 selected

☐ COURSE

☐ Web Development

☐ UI/UX Design

☐ Software Engineering

☐ Mobile App Developmente

☐ Game Development

☐ Database Management

☐ Data Science and Machine Learning

☐ Cyber Security

☐ Cloud Computing

9 courses

Fig 4.8: Course Insertions

4.4.3 ENROLLMENT:

EnrollEssy Admin

WELCOME, VEDANTH. [VIEW SITE](#) / [CHANGE PASSWORD](#) / [LOG OUT](#)

Home > Home > Enrollments

Select enrollment to change

ADD ENROLLMENT +

Action: Go 0 of 9 selected

<input type="checkbox"/>	ENROLLMENT
<input type="checkbox"/>	Vinay D B - 4GM21CS122 - Software Engineering
<input type="checkbox"/>	TM Sharath - 4GM21CS114 - Game Development
<input type="checkbox"/>	Rohan R G - 4GM21CS084 - Database Management
<input type="checkbox"/>	Prajwal H - 4GM21CS069 - UI/UX Design
<input type="checkbox"/>	Veerendra N - 4GM21CS119 - Cloud Computing
<input type="checkbox"/>	Yathish Rao - 4GM21CS126 - Cyber Security
<input type="checkbox"/>	Srujan K S - 4GM21CS109 - Data Science and Machine Learning
<input type="checkbox"/>	Rahul D R - 4GM21CS075 - Mobile App Development
<input type="checkbox"/>	Vedanth KN - 4GM21CS118 - Web Development

9 enrollments

Fig 4.9: Enrollment Insertions

4.4.4 CONTACT:

EnrollEssy Admin

WELCOME, VEDANTH. [VIEW SITE](#) / [CHANGE PASSWORD](#) / [LOG OUT](#)

Home > Home > Contacts

Select contact to change

ADD CONTACT +

Action: Go 0 of 4 selected

<input type="checkbox"/>	CONTACT
<input type="checkbox"/>	Yathish Rao M R
<input type="checkbox"/>	Srujan K S
<input type="checkbox"/>	Rahul D R
<input type="checkbox"/>	Vedanth KN

4 contacts

Fig 4.10: Contact Insertions

CHAPTER 5

WEBSITE SNAPSHOTS

5.1 HOME PAGE:

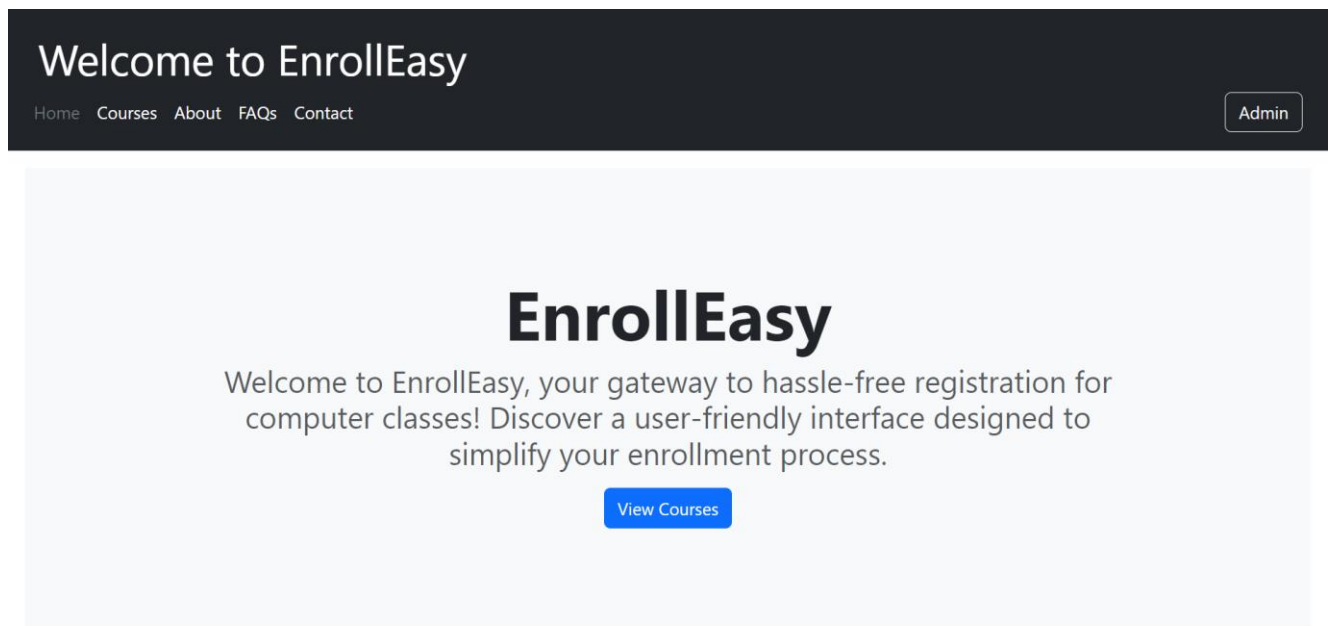


Fig 5.1: Home Page

5.2 COURESE PAGE:

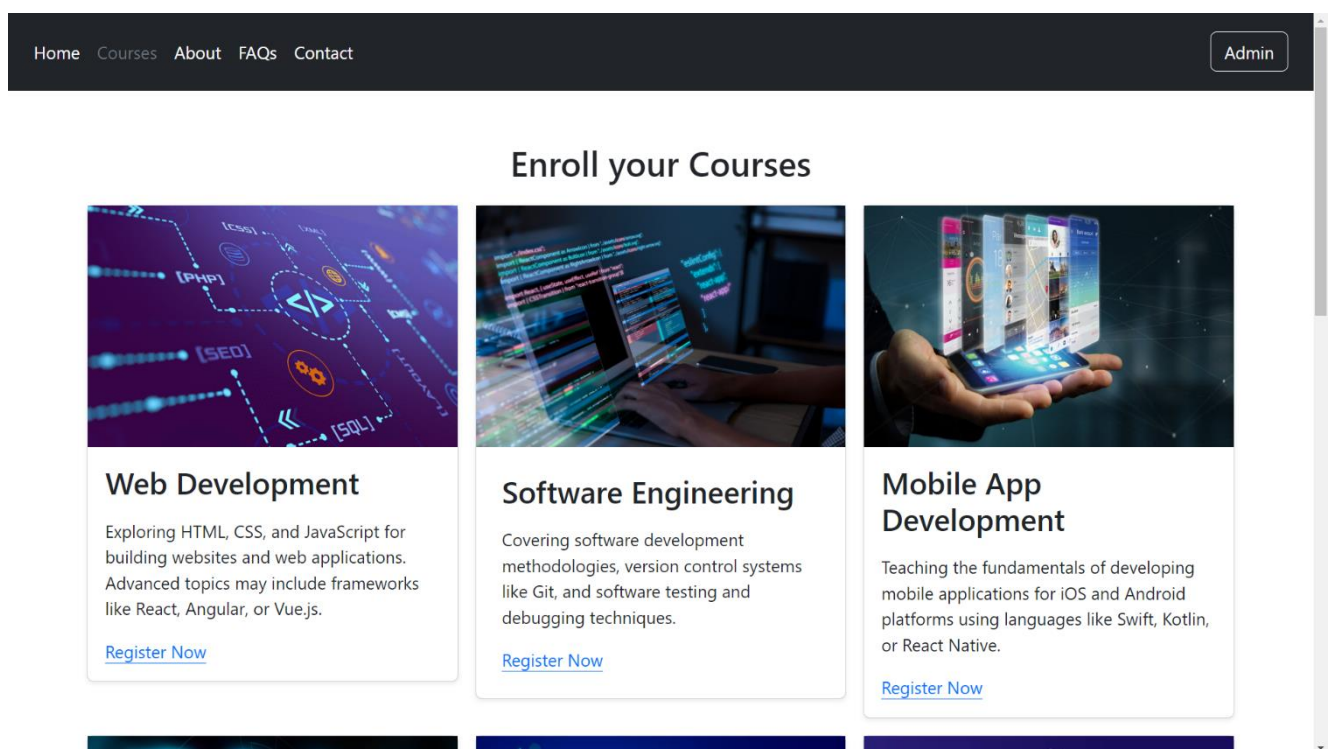


Fig 5.2: Course Page

building websites and web applications. Advanced topics may include frameworks like React, Angular, or Vue.js.


[Register Now](#)

Covering software development methodologies, version control systems like Git, and software testing and debugging techniques.

[Register Now](#)

Teaching the fundamentals of developing mobile applications for iOS and Android platforms using languages like Swift, Kotlin, or React Native.


[Register Now](#)



Cybersecurity

Providing an overview of cybersecurity principles, ethical hacking techniques, and strategies for protecting networks and systems from cyber threats.


[Register Now](#)



Game Development

Introducing game design concepts, game engines like Unity or Unreal Engine, and programming languages like C# or C++ for creating interactive games.

[Register Now](#)



Database Management

Teaching database design, SQL queries, and database administration using popular database systems like MySQL, PostgreSQL, or MongoDB.

[Register Now](#)

Fig 5.2.1: Course Page

and strategies for protecting networks and systems from cyber threats.


[Register Now](#)

programming languages like C# or C++ for creating interactive games.

[Register Now](#)

popular database systems like MySQL, PostgreSQL, or MongoDB.


[Register Now](#)



UI/UX Design

Focusing on user interface (UI) and user experience (UX) design principles, tools like Adobe XD, Sketch, and Figma, and best practices for creating engaging digital experiences.


[Register Now](#)



Data Science and ML

Introducing techniques for data analysis, machine learning algorithms, and data visualization using tools like Python, R, and libraries such as TensorFlow and scikit-learn.

[Register Now](#)



Cloud Computing

Exploring cloud platforms such as AWS, Azure, and Google Cloud Platform, covering topics like cloud architecture, deployment, and management.

[Register Now](#)

Fig 5.2.2: Course Page

5.3 ABOUT PAGE:

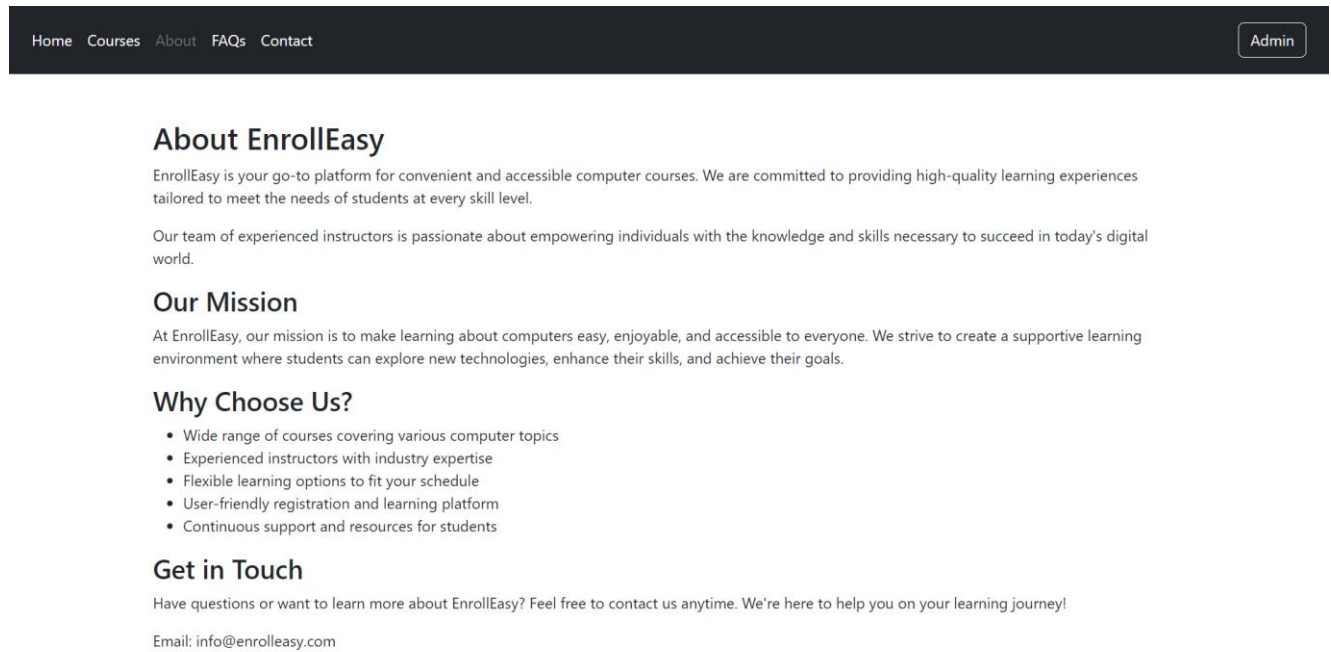


Fig 5.3: About Page

5.4 FAQs PAGE:

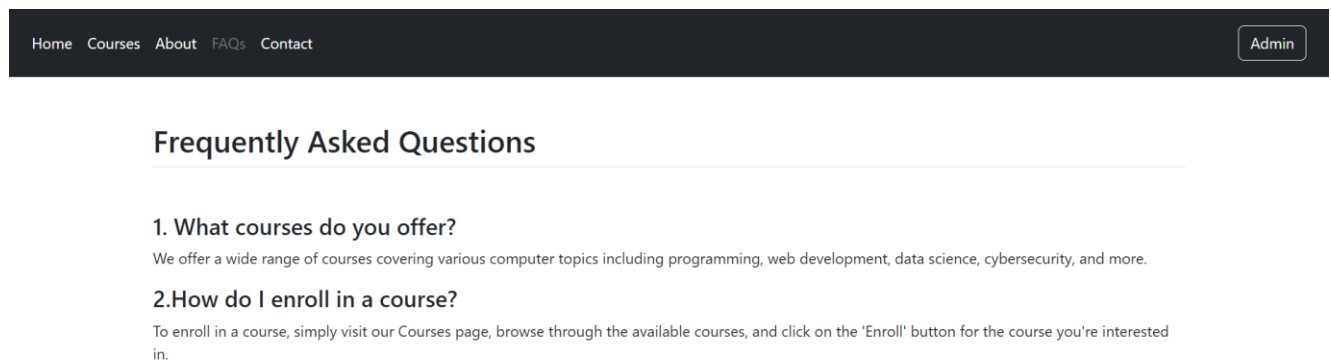
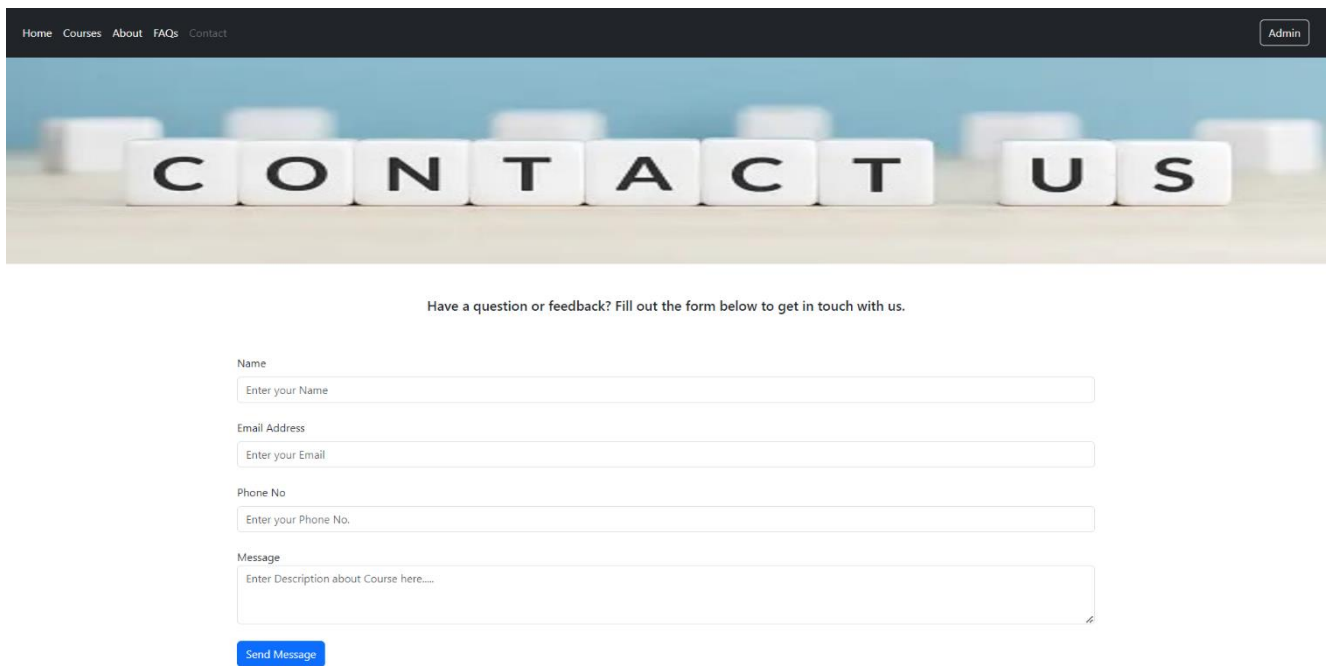


Fig 5.4: FAQs Page

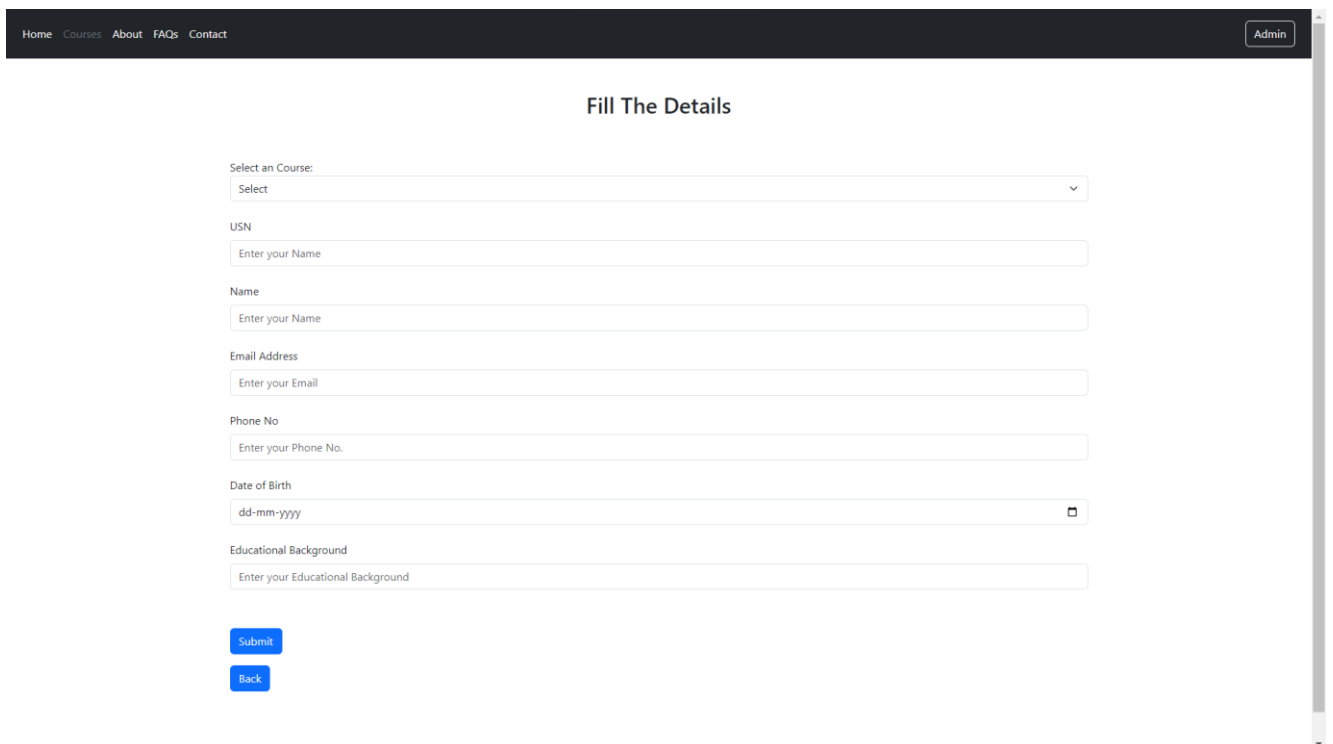
5.5 CONTACT PAGE:



The screenshot shows the Contact Page of the Computer Classes Registration System. At the top, there is a navigation bar with links: Home, Courses, About, FAQs, and Contact. An 'Admin' button is located in the top right corner. Below the navigation bar is a header image featuring white blocks with black letters spelling out 'CONTACT US'. Underneath the image, a text prompt reads: 'Have a question or feedback? Fill out the form below to get in touch with us.' The form consists of several input fields: 'Name' (placeholder: 'Enter your Name'), 'Email Address' (placeholder: 'Enter your Email'), 'Phone No' (placeholder: 'Enter your Phone No.'), and 'Message' (placeholder: 'Enter Description about Course here....'). A blue 'Send Message' button is positioned at the bottom of the form.

Fig 5.5: Contact Page

5.6 STUDENT PAGE:









The screenshot shows the Student Page of the Computer Classes Registration System. At the top, there is a navigation bar with links: Home, Courses, About, FAQs, and Contact. An 'Admin' button is located in the top right corner. Below the navigation bar, the page title 'Fill The Details' is centered. The form contains several input fields: 'Select an Course:' (a dropdown menu with 'Select' as the current selection), 'USN' (placeholder: 'Enter your Name'), 'Name' (placeholder: 'Enter your Name'), 'Email Address' (placeholder: 'Enter your Email'), 'Phone No' (placeholder: 'Enter your Phone No.'), 'Date of Birth' (placeholder: 'dd-mm-yyyy' with a calendar icon), and 'Educational Background' (placeholder: 'Enter your Educational Background'). At the bottom of the form, there are two blue buttons: 'Submit' and 'Back'.


Fig 5.6: Student Page

CHAPTER 6

CONCLUSION

-  **Enhanced User Experience:** The system aims to streamline the registration process for computer classes, offering a user-friendly interface for students to browse available courses, register for classes, and manage their profiles. This focus on user experience contributes to higher user satisfaction and engagement.
-  **Efficient Course Management:** With features such as course categorization, enrollment tracking, and instructor management, the system provides administrators with efficient tools to manage courses, instructors, and student enrolments. This helps optimize resource allocation and improve course offerings based on demand.
-  **Data Integrity and Security:** By leveraging Django's built-in security features and robust database management capabilities, the system ensures data integrity and protection against unauthorized access. Secure user authentication, data encryption, and role-based access control mechanisms contribute to maintaining the confidentiality and integrity of student and course data.
-  **Scalability and Flexibility:** The system architecture, built on Python and Django, is designed to scale efficiently to accommodate increasing numbers of users, courses, and administrative functionalities. Modular design and adherence to best practices enable seamless integration of new features and enhancements as the system evolves.
-  **Insightful Reporting and Analytics:** Through the integration of reporting and analytics features, the system provides administrators with valuable insights into enrollment trends, course popularity, student demographics, and other key metrics. This data-driven approach enables informed decision-making and strategic planning for future course offerings and resource allocation.
-  **Community Engagement and Support:** The open-source nature of Python and Django fosters a vibrant developer community, offering access to a wealth of resources, tutorials, and third-party libraries. This ecosystem facilitates collaboration, knowledge sharing, and ongoing support for the project, ensuring its long-term sustainability and success.

REFERENCES

-  <https://getbootstrap.com/docs/5.3/examples/>
-  <https://docs.djangoproject.com/en/5.0/topics/db/models/>
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