

A Project Report on

E-Learning Platform

Submitted for the partial fulfillment of
Project in Bachelor of Science
(Information Technology) (Semester –
VI)

-: Submitted To:-



**Department Of Computer Science, Harivandana
College, Rajkot.**

-: Affiliated To:-



Saurashtra University, Rajkot

-: Submitted By:-

Bhavantu Vadoliya

(Enroll no: 00330422140)

-: Under the Guidance of:-

Dr. Ashwin Rathod (Professor & Head)

**Prof. Vishakha Patel (Assistant Professor
& Project in charge)**

PREFACE

I would like to say that the Projects are very assenting part of our education quota.

I am Pleased to present this project report on **B.Sc.(IT) 6th Semester** at **HARIVANDANA COLLEGE** it is quite easy to operate for end user. Your feedback is very important to improve our project knowledge. Once you login to our website you can functionality of **E-Learning Platform** provided by our **System**.

This report contains overview of the whole project. Anyone who is technical person can understand the contact of the system is shown with figures and screens readers can find it easy to understand.

Project report is interesting experience for us. We say it is difficult from particular aspects we come to know about me theoretical ideas of the matter.

By preparing this report we have understand the need of particular training in the education field it is easier to work with **computerized system**.

ACKNOWLEDGEMENT

While preparing and presenting this project, I understood the difference between theoretical and practical aspect, without taking help of other people it is not possible to complete this project. So we have opportunity to say thank them all who have Help us directly or indirectly to make the project successful like internal & external guide.

Firstly, I would like to thank You Prof. Vishakha Patel for guide in this whole project. Prolonged interest in my work and excellence guidance. She has been a constant source of motivation to me by providing us with suitable performance.

For giving us throughout the project and for the constant support of them and help in design and implementation of this project. Moreover, I would especially like to thank my friends and teachers and last but not the least I am great full to my parents for directly support and unconditional help which made my project a real success.

Project Profile

Project Title	E-Learning Platform
Developed By	Bhavantu Vadoliya
Platform	Python-Django
Client Side	Browser
Technology	Django, HTML, Tailwind CSS
Front End	HTML, Tailwind CSS
Back End	Python-Django
Server	Django
Documentation Tool	MS Word
Period Of Project Working	4 Months
Internal guide	Prof. Vishakha Patel
Submitted To	Saurashtra University

Index

No.	Subject Title	Page No.
1.	Introduction <ul style="list-style-type: none">- 1.1 Project Summary- 1.2 Purpose- 1.3 Scope	1
2.	Literature Review <ul style="list-style-type: none">- 2.1 Python Overview- 2.2 Web Framework: Django- 2.3 Database Management: SQLite- 2.4 Frontend Technologies	2
3.	Project Management <ul style="list-style-type: none">- 3.1 Project Planning and Scheduling (SDLC)- 3.2 Schedule Planning & Representation	4

4.	Requirement & Specification	6
5.	System Design - 5.1 Basic Flow of System - 5.2 Data Flow Diagram	8
6.	Data Dictionary	11
7.	Testing - 7.1 Testing Levels - 7.2 Types of Testing	13
8.	Screenshots	16
9.	Future Work & Conclusion	21
10.	References & Bibliography	23

1. Introduction

1.1 Project Summary

The E-Learning Platform is a Django application designed to provide users with a comprehensive platform for engaging with various educational features. It facilitates learning through a user-friendly interface, allowing for seamless interaction between students and teachers.

1.2 Purpose

The primary purpose of this project is to enhance the learning experience by offering functionalities such as course management, user authentication, and personalized dashboards for both students and teachers. The application aims to create an interactive environment that supports educational engagement and resource accessibility.

1.3 Scope

- User authentication for different user types (students and teachers).
- Course management features that allow teachers to create courses and students to enroll in them.
- Dedicated dashboards that provide tailored experiences based on user roles.
- A contact form for user inquiries and feedback.

2. Literature Review

2.1 Python Overview

- **Version:** Python 3.x
- Python is a high-level, interpreted programming language known for its simplicity and readability. It supports multiple programming paradigms, including procedural, object-oriented, and functional programming. Python's extensive standard library and active community make it a versatile choice for web development, particularly in building robust backend systems.

2.2 Web Framework: Django

- **Version:** Django 5.1.4
- Django is a high-level web framework that enables rapid development and clean design. It provides built-in features for user authentication, database management, and security, making it suitable for building scalable web applications.

2.3 Database Management: SQLite

- **Database Engine:** SQLite
- SQLite is the database engine used in the E-Learning Platform. It is lightweight, server less, and easy to manage, allowing for efficient data storage and retrieval.

2.4 Front-End Technologies

- **HTML/CSS:** The front-end of the application is built using HTML5 for structure and Tailwind CSS (Version 3.x) for styling. Tailwind CSS is a utility-first framework that enables rapid UI development with a modern design.

3. Project Management

3.1 Project Planning and Scheduling (SDLC)

The Software Development Life Cycle (SDLC) for the E-Learning Platform will follow a structured approach to ensure timely delivery and quality assurance. The project will be divided into several phases, each with specific objectives and deliverables.

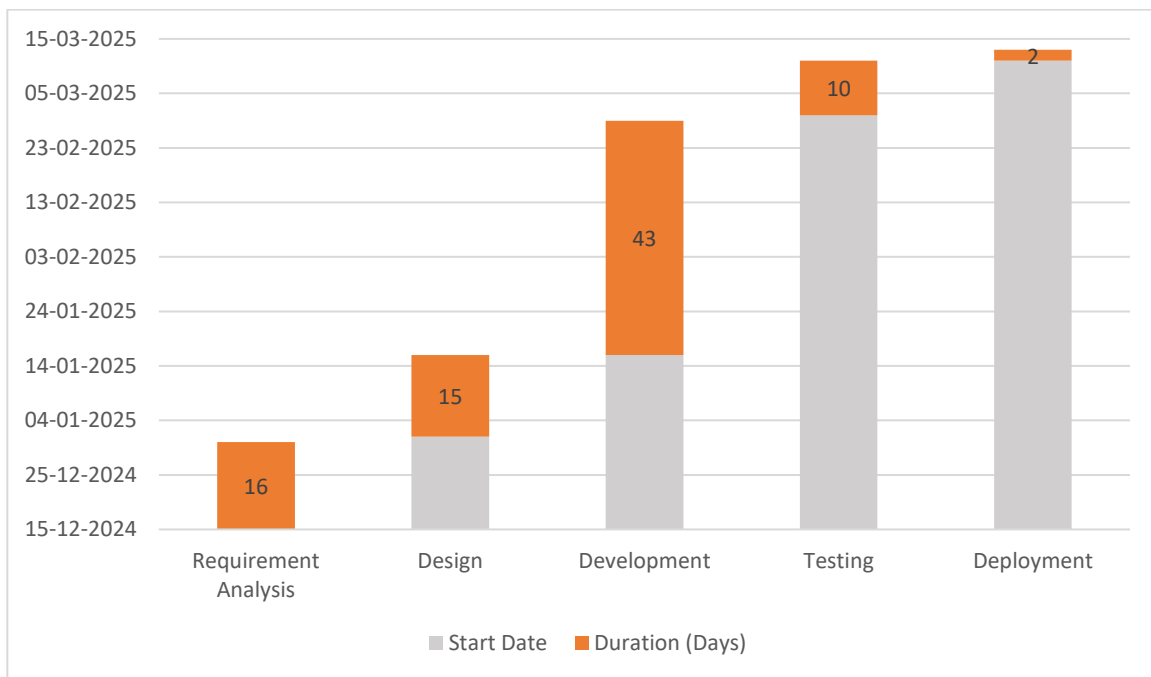
Phases of the SDLC:

1. **Requirement Analysis** (15/12/2024 - 31/12/2024)
 - Gather and analyze requirements from stakeholders.
 - Define project scope and objectives.
2. **Design** (01/01/2025 - 15/01/2025)
 - Create architectural and detailed design documents.
 - Design user interfaces and user experience flows.
3. **Development** (16/01/2025 - 28/02/2025)
 - Implement the application features based on the design specifications.
 - Conduct regular code reviews and integrate feedback.
4. **Testing** (01/03/2025 - 10/03/2025)
 - Perform unit testing, integration testing, and user acceptance testing.
 - Identify and fix bugs and issues.
5. **Deployment** (11/03/2025 - 12/03/2025)
 - Deploy the application to the production environment.

3.2 Schedule Planning & Representation

The following Gantt chart represents the project schedule visually, outlining the timeline for each phase:

Phase	Start Date	End Date	Duration (Days)
Requirement Analysis	15/12/2024	31/12/2024	16
Design	01/01/2025	15/01/2025	15
Development	16/01/2025	28/02/2025	43
Testing	01/03/2025	10/03/2025	10
Deployment	11/03/2025	12/03/2025	2



4. Requirement & Specification

Functional Requirements

1. User Authentication

- Users must be able to sign up, log in, and log out.
- The system should support different user roles, including students and teachers.

2. Course Management

- Teachers should be able to create, update, and delete courses.
- Students must be able to view available courses and enroll in them.
- The system should allow users to check their enrollment status.

3. Dashboards

- The application should provide separate dashboards for students and teachers.
- Dashboards must display relevant information, such as enrolled courses for students and course management options for teachers.

4. Contact Form

- Users should be able to submit inquiries through a contact form.
- The system must send notifications to the appropriate personnel upon form submission.

5. Logging

- The application should log various actions (e.g., user logins, course enrollments) for monitoring and debugging purposes.

Non-Functional Requirements

1. Performance

- The application should load within 3 seconds for users with a standard internet connection.
- The system must handle at least 100 concurrent users without performance degradation.

2. Security

- User data must be encrypted and securely stored.
- The application should implement measures to prevent unauthorized access and data breaches.

3. Usability

- The user interface must be intuitive and easy to navigate for both students and teachers.
- The application should be accessible on various devices, including desktops, tablets, and smartphones.

4. Scalability

- The system should be designed to accommodate future growth, allowing for the addition of new features and an increase in user base without significant rework.

5. Maintainability

- The codebase should follow best practices and coding standards to ensure ease of maintenance and updates.
- Documentation must be provided for all major components and features of the application.

5. System Design

5.1 Basic Flow of System (Use Case and Activity)

Use Case Diagram

The following use cases represent the interactions between users (students and teachers) and the E-Learning Platform:

1. User Authentication

- Actors: Student, Teacher
- Description: Users can sign up, log in, and log out of the system.

2. Course Management

- Actors: Teacher
- Description: Teachers can create, update, and delete courses.

3. Course Enrollment

- Actors: Student
- Description: Students can view available courses and enroll in them.

4. Dashboard Access

- Actors: Student, Teacher
- Description: Users can access their respective dashboards to view relevant information.

5. Contact Form Submission

- Actors: Student, Teacher
- Description: Users can submit inquiries through a contact form.

Activity Diagram

The following activity diagram illustrates the flow of activities for a student enrolling in a course:

[Start] --> [Login] --> [View Courses] --> [Select Course] --> [Enroll] --> [Confirmation] --> [End]

5.2 Data Flow Diagram

The Data Flow Diagram (DFD) below represents how data moves through the E-Learning Platform:

1. User Data

- Input: User registration and login information.
- Process: Authentication and user role assignment.
- Output: User profile and session data.

2. Course Data

- Input: Course creation and updates by teachers.
- Process: Storing course information in the database.
- Output: Available courses for students.

3. Enrollment Data

- Input: Student enrollment requests.
- Process: Updating enrollment status in the database.
- Output: Confirmation of enrollment and updated course lists.

4. Contact Form Data













- Input: User inquiries submitted through the contact form.
- Process: Storing inquiries for response.
- Output: Notifications sent to the appropriate personnel.

6. Data Dictionary









The following data dictionary outlines the database structure for the E-Learning Platform, including the tables and their respective fields.

6.1 Tables and Fields





1. Table Name: custom_user

 id	integer	"id" integer NOT NULL
 password	varchar(128)	"password" varchar(128) NOT NULL
 last_login	datetime	"last_login" datetime
 is_superuser	bool	"is_superuser" bool NOT NULL
 username	varchar(150)	"username" varchar(150) NOT NULL UNIQUE
 first_name	varchar(150)	"first_name" varchar(150) NOT NULL
 last_name	varchar(150)	"last_name" varchar(150) NOT NULL
 email	varchar(254)	"email" varchar(254) NOT NULL
 is_staff	bool	"is_staff" bool NOT NULL
 is_active	bool	"is_active" bool NOT NULL
 date_joined	datetime	"date_joined" datetime NOT NULL
 user_type	varchar(10)	"user_type" varchar(10) NOT NULL






2. Table Name: course

 id	integer	"id" integer NOT NULL
 name	varchar(255)	"name" varchar(255) NOT NULL
 description	text	"description" text NOT NULL
 created_at	datetime	"created_at" datetime NOT NULL
 creator_id	bigint	"creator_id" bigint NOT NULL
 file	varchar(100)	"file" varchar(100)
 media_files	varchar(100)	"media_files" varchar(100)
 youtube_link	varchar(200)	"youtube_link" varchar(200)

3. Table Name: enrollment

 id	integer	"id" integer NOT NULL
 enrolled_at	datetime	"enrolled_at" datetime NOT NULL
 course_id	bigint	"course_id" bigint NOT NULL
 student_id	bigint	"student_id" bigint NOT NULL

4. Table Name: contact

 id	integer	"id" integer NOT NULL
 name	varchar(255)	"name" varchar(255) NOT NULL
 email	varchar(254)	"email" varchar(254) NOT NULL
 message	text	"message" text NOT NULL
 created at	datetime	"created at" datetime NOT NULL

7. Testing

7.1 Testing Levels

Testing levels refer to the different stages at which testing is performed during the software development process. For the E-Learning Platform, the following testing levels will be implemented:

1. Unit Testing:

- Focuses on testing individual components or functions of the application in isolation.
- Ensures that each unit of code performs as expected.
- Tools: Django's built-in testing framework, pytest.

2. Integration Testing:

- Tests the interaction between different components or modules of the application.
- Ensures that integrated parts work together as intended.
- Focuses on data flow and communication between modules.

3. System Testing:

- Tests the complete and integrated application as a whole.
- Validates the end-to-end functionality of the system against the specified requirements.
- Ensures that the application meets performance, security, and usability standards.

4. User Acceptance Testing (UAT):

- Conducted by end-users to validate the application against their requirements and expectations.
- Ensures that the application is ready for deployment and meets user needs.

- Feedback from UAT is crucial for final adjustments before the official release.

7.2 Types of Testing

The following types of testing will be employed to ensure the quality and reliability of the E-Learning Platform:

1. **Functional Testing:**

- Validates that the application functions according to the specified requirements.
- Includes testing of user authentication, course management, and enrollment features.

2. **Non-Functional Testing:**

- Assesses aspects such as performance, security, and usability.
- Ensures that the application can handle expected loads and is secure against vulnerabilities.

3. **Regression Testing:**

- Conducted after changes or enhancements to the application to ensure that existing functionality remains unaffected.
- Involves re-running previously completed tests to confirm that no new issues have been introduced.

4. **Performance Testing:**

- Evaluates the application's responsiveness, speed, and scalability under various conditions.
- Ensures that the application can handle multiple users and large data volumes without performance degradation.

5. **Security Testing:**

- Identifies vulnerabilities and weaknesses in the application.

8. Screenshot


LearnEase

Welcome, Home Courses About Contact SignUp Signin

Unlock Your Potential with AI-Powered Learning

LearnEase offers personalized courses and quizzes that adapt to your learning style, helping you achieve your goals efficiently.

Get Started



+

Interactive Courses

Engage in interactive courses designed by industry experts, tailored to your learning pace and style.

...

Adaptive Quizzes

Take quizzes that adapt based on your responses, making learning more effective and personalized.

=

Progress Tracking

Track your learning journey, monitor your progress, and stay motivated to achieve your learning goals.

Available Courses

AI

AI is Important.

DevOps

DevOps is Amazing

Cyber Security

Cyber Security is for safety

Cybersecurity Crash Course

This course is designed to assist individuals in studying the field of cyber security in a fast and efficient manner. By utilizing effective methods, it aims to enhance learners' understanding of key concepts and practices related to cyber security quickly.

GitHub

This is GitHub CrashCourse

Data Structures & Algorithms

This course is particularly well-suited for students who have a strong interest in exploring and gaining a deeper understanding of data structures and algorithms, which are fundamental concepts in the field of computer science and programming.

Enroll Now

Join our courses and start learning today!

Enroll Now

Contact Us

We would love to hear from you! Please fill out the form below:

Your Name

Your Email

Your Message

Send Message

Ready to Start Your Learning Journey?

Join LearnEase today and begin exploring a world of knowledge, anytime, anywhere.

Join Now

© 2025 LearnEase. All rights reserved.

Privacy Policy Terms of Service

Prepared By: Bhavantu Vadoliya

22

LearnEase

Welcome, Home Courses About Contact SignUp SignIn

Create Your Account

Join us and start your learning journey!

☐ As Teacher ☐ As Student

☐ I agree to the [Terms of Service](#) and [Privacy Policy](#).

Sign Up

© 2025 LearnEase. All rights reserved.

[Privacy Policy](#) [Terms of Service](#)

LearnEase

Welcome, Home Courses About Contact SignUp SignIn

Welcome Back!

Please sign in to your account.

☐ As Teacher ☐ As Student

Sign In

© 2025 LearnEase. All rights reserved.

[Privacy Policy](#) [Terms of Service](#)

LearnEase[Welcome, teacher](#)[Dashboard](#)[Courses](#)[About](#)[Contact](#)[Logout](#)

Welcome to Your Teacher Dashboard

Here you can manage your courses and track student progress.

Your Created Courses

AI

AI is Important.

DevOps

DevOps is Amazing

Cyber Security

Cyber Security is for safety

Cybersecurity Crash Course

This course is designed to assist individuals in studying the field of cyber security in a fast and efficient manner. By utilizing effective methods, it aims to enhance learners' understanding of key concepts and practices related to cyber security quickly.

GitHub

This is GitHub CrashCourse

Data Structures & Algorithms

This course is particularly well-suited for students who have a strong interest in exploring and gaining a deeper understanding of data structures and algorithms, which are fundamental concepts in the field of computer science and programming.

Create a New Course

Course Name

Course Name

Course Description

Course Description

Upload Course File (PDF)

Choose File

No file chosen

Upload Media Files

Choose Files

No file chosen

YouTube Video Link

YouTube Video Link

Create Course

Contact Support

If you have any questions, feel free to reach out!

© 2025 LearnEase. All rights reserved.

[Privacy Policy](#)[Terms of Service](#)

LearnEaseWelcome, sara[Dashboard](#)[Courses](#)[About](#)[Contact](#)[Logout](#)

Welcome Back!

Here you can manage your courses and track your progress.

Your Enrolled Courses

AI

AI is Important.

Cybersecurity Crash Course

This course is designed to assist individuals in studying the field of cyber security in a fast and efficient manner. By utilizing effective methods, it aims to enhance learners' understanding of key concepts and practices related to cyber security quickly.

PDF: [Download](#)

GitHub

This is GitHub CrashCourse

PDF: [Download](#)

Data Structures & Algorithms

This course is particularly well-suited for students who have a strong interest in exploring and gaining a deeper understanding of data structures and algorithms, which are fundamental concepts in the field of computer science and programming.

PDF: [Download](#)

Media: [Access Media](#)

YouTube: [Watch Video](#)

© 2025 LearnEase. All rights reserved.[Privacy Policy](#)[Terms of Service](#)

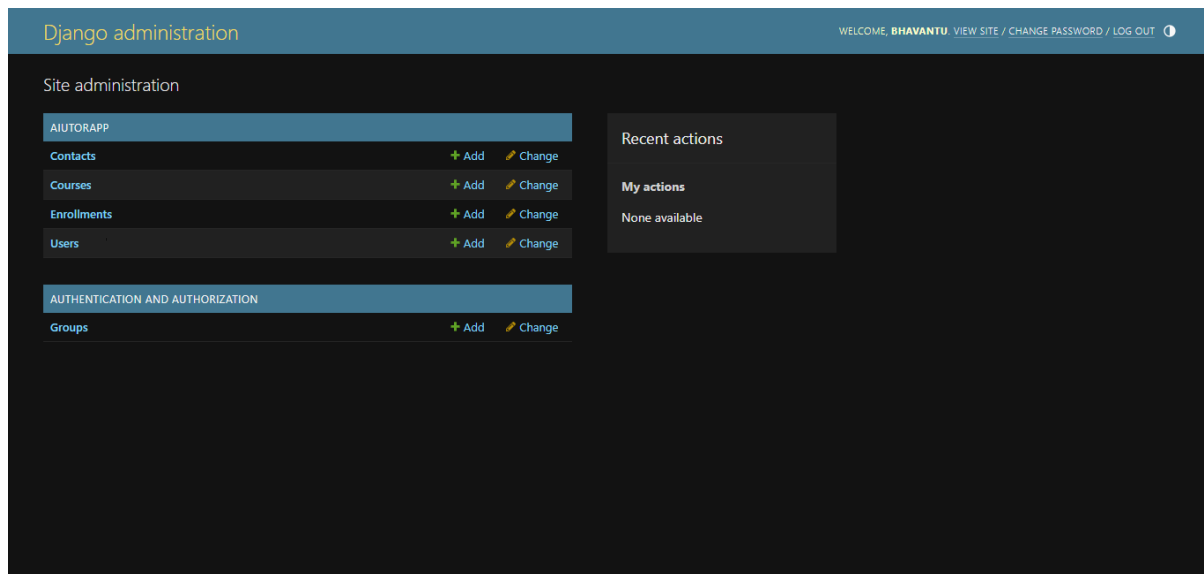
LearnEaseWelcome, sara[Dashboard](#)[Courses](#)[About](#)[Contact](#)[Logout](#)

Get in Touch

We would love to hear from you! Please fill out the form below:

[Send Message](#)

© 2025 LearnEase. All rights reserved.[Privacy Policy](#)[Terms of Service](#)



9. Future Work & Conclusion

Future Work

The E-Learning Platform has been successfully developed and deployed, but there are several areas for future enhancement to further improve its functionality and user experience:

1. **Mobile Application Development:**

- Develop a mobile version of the platform to provide users with on-the-go access to courses and learning materials.

2. **Advanced Analytics:**

- Implement analytics features to track user progress, course completion rates, and engagement metrics, providing valuable insights for both students and teachers.

3. **Gamification:**

- Introduce gamification elements such as badges, leader boards, and rewards to increase user engagement and motivation.

4. **AI-Powered Recommendations:**

- Utilize machine learning algorithms to provide personalized course recommendations based on user preferences and learning history.

5. **Enhanced Collaboration Tools:**

- Add features such as discussion forums, group projects, and live chat to facilitate collaboration among students and teachers.

6. **Multilingual Support:**

- Expand the platform's accessibility by adding support for multiple languages, catering to a global audience.

Conclusion

The E-Learning Platform has been designed and developed to provide a comprehensive and user-friendly solution for online learning. With features such as user authentication, course management, and personalized dashboards, the platform offers a seamless experience for both students and teachers. The successful implementation of the project demonstrates the potential of technology to enhance education and make learning more accessible and engaging.

By continuously improving and expanding the platform's features, we can ensure that it remains a valuable tool for learners and educators alike. The E-Learning Platform represents a significant step forward in the evolution of online education, and we look forward to its continued growth and success.

10. References & Bibliography

The following resources and references were instrumental in the development of the E-Learning Platform:

1. Django Documentation:

- Official documentation for Django, the web framework used to build the platform.
- [Django Documentation](#)

2. Tailwind CSS Documentation:

- Official documentation for Tailwind CSS, the utility-first CSS framework used for styling the platform.
- [Tailwind CSS Documentation](#)

3. Python Documentation:

- Official documentation for Python, the programming language used for backend development.
- [Python Documentation](#)

4. SQLite Documentation:

- Official documentation for SQLite, the database engine used in the project.
- [SQLite Documentation](#)

5. Django REST Framework Documentation:

- Official documentation for Django REST Framework, used for building APIs in the project.
- [Django REST Framework Documentation](#)

6. GitHub Repository:

- The project's GitHub repository, containing the source code and version history.
- [GitHub Repository](#)

7. Online Tutorials and Articles:

- Various online tutorials and articles that provided guidance on Django, Tailwind CSS, and web development best practices.

These references and resources were essential in the successful development and deployment of the E-Learning Platform, providing the necessary knowledge and tools to create a robust and user-friendly application.

Thank You