

DEPARTMENT OF BCA

Project Title: E-Library System

Introduction

The **E-Library System** is a web-based platform designed to provide users with seamless access to a digital library. It enables users to browse, read, and request books, research papers, and audiobooks. The system includes authentication for students, teachers, and administrators, along with a structured borrowing and return system. The platform enhances accessibility to academic resources while maintaining an intuitive and user-friendly interface.

Objectives

- Develop a digital library system for easy access to books and research materials.
- Implement a secure authentication system for different user roles.
- Enable advanced search functionality with filters such as category, author, and publication year.
- Provide an embedded book viewer and audiobook player for online reading.
- Manage book borrowing and returning with automated notifications.
- Facilitate discussion forums for book reviews and academic discussions.
- Allow users to request unavailable books for library expansion.
- Offer bookmark and notes functionality for personalized study.
- Provide analytics for administrators to track library usage and engagement.

Scope

- **User Authentication & Role Management** – Supports students, teachers, and admins with dedicated dashboards.
- **Book Catalog & Advanced Search** – Allows browsing of books, research papers, PDFs, and audiobooks.
- **Online Reading & Audiobook Player** – Provides an embedded viewer and an audiobook player.
- **Borrow & Return System** – Implements an expiration system with renewal notifications.
- **E-Library Analytics for Admins** – Tracks book popularity and user engagement.
- **Discussion Forum for Books & Research Papers** – Enables users to discuss and review books.
- **Request a Book Feature** – Allows users to request new additions to the library.
- **Bookmark & Notes Feature** – Supports saving bookmarks and adding personal notes.

Methodology

The **E-Library System** follows a modular development approach using **Django** as the backend framework and **HTML, CSS, and JavaScript** for the frontend. The system is developed using the **Model-View-Template (MVT)** architecture to ensure efficient data handling and user-friendly navigation. The implementation includes iterative testing, ensuring a seamless experience across different devices. Security measures such as **role-based access control and encrypted user data storage** are integrated to maintain data privacy and integrity.

Client Requirements

- Standard computer
- Internet browser
- Stable internet connection

Hardware Requirements

Server Requirements:

- Cloud Server (8GB RAM, 4 cores)
- 1TB Storage
- Backup servers
- Stable internet connection

Software Requirements

Tools Required:

- Development IDE (VS Code / PyCharm)
- Django Framework
- SQLite Database
- Bootstrap

Development Stack

- **Frontend:** HTML, CSS, JavaScript
- **Backend:** Django (Python)
- **Database:** SQLite

Testing

Key Testing Areas:

- System functionality verification
- User authentication and access control

- Book catalog and search performance
- Online reading and audiobook playback
- Borrow and return process validation