Student Name: INDHU R

Seat No: 161

Project ID: 29

Project title: COURSE FILE AUTOMATION

Technical Components

Component	Tech Stack
Backend	Node.js , Express.js
Frontend	Angular
Database	MongoDB
API	RESTful services

PROBLEM STATEMENT:

The current method of managing college course files is inefficient and disorganized. There is no standardized format for essential documents such as lesson plans, student lists, test papers, and attainment reports. This leads to difficulties in accessing, updating, and verifying course-related information. Additionally, the lack of a centralized system results in redundancy and increased administrative workload, hindering the effective management and tracking of course progress and outcomes.

PROJECT-FLOW:

Purpose:

The purpose of this project is to develop a web application that automates the management of college course files. The application aims to streamline the creation, storage, and retrieval of essential course documents, ensuring consistency and accessibility while reducing administrative burden.

Scope:

The project aims to develop a web application that streamlines the management of college course files by providing a secure platform for user and admin authentication, creating and maintaining Vision and Mission statements, managing PEOs, POs, and PSOs, developing detailed lesson plans, maintaining student lists, managing test documents, tracking CO-PO attainment, and converting all relevant documents into standardized PDF formats. This system will enhance organization, accessibility, and efficiency in handling course-related information.

Business Context:

This project addresses the inefficiencies in managing course-related documentation within educational institutions. By automating and standardizing these processes through a web application, the system will enhance operational efficiency, ensure

compliance with academic standards, and improve accessibility to essential information, ultimately supporting better educational outcomes.

Consideration:

- Security measures for user and admin authentication.
- User-friendly interface for ease of use by faculty and administrative staff.

Dependencies:

- Reliable database system for storing and retrieving user credentials and course documents.
- Internet connectivity for accessing the web application.

User Personas

- **Admin Staff**: Manages user accounts, oversees document creation, ensures compliance with institutional standards, and generates reports.
- **Faculty**: Creates and updates lesson plans, manages student lists, prepares test documents, and tracks CO-PO attainment.

Functional Requirements:

- **User Authentication:** Secure login system for users and admins.
- **Vision and Mission Management:** Create and manage Vision and Mission statements.
- **PEOs, POs, and PSOs Management:** Create and view PEOs, POs, and PSOs.
- **Lesson Plan Development:** Develop and manage lesson plans with unit details,total hours required and reference links.
- **Student List Management:** Maintain student lists with faculty and HoD signatures.
- **Test Management:** Create and manage PT1 and PT2 question papers, answer scripts, and mark sheets.

- **CO-PO Attainment Tracking:** Track and report CO-PO attainment, including remedial actions and optional tests .
- **PDF Conversion:** Convert all documents and reports to standardized PDF formats.

Non-Functional Requirements

- **Security**

   Ensure data security and user privacy through encryption and secure access controls.

- **Performance**

   Ensure the application performs efficiently under varying loads and user activity.

- **Usability**

   Design an intuitive user interface to facilitate ease of use for faculty and admin staff.

- **Reliability**

   Ensure the application is reliable and available, minimizing downtime and data loss.

- **Scalability**

   Design the system to handle increasing numbers of users and documents without degradation in performance.

- **Compliance**

   Ensure the application complies with institutional policies and relevant educational standards.

FLOW CHART :

Flow chart starts at "start" → "user/admin login" → decision "valid credentials". If "yes" → "display dashboard" → "choose department" → "choose course & course code". If "no" → "show error message" → back to start.

From "choose course & course code" branches into:
- create vision and mission → generate vision and mission into PDF
- create PEOs,POs,PSOs → generate PEOs,POs,PSOs to PDF
- develop lesson plan → enter unit title and description → enter total no.of hours → attach reference books links → generate lesson plan to PDF
- create student name list → generate student name list to PDF
- choose examination → (PT1, PT 2, remedial, optional, END semester exam) → add question paper and answer scripts, create marksheet, evaluate COs-POs attainment, create remedial actions for non-attainment of COs → generate into PDF

All branches lead to "end".