DAYANANDA SAGAR UNIVERSITY

Devarakaggalahalli, Harohalli
Kanakapura Road,Bangalore South Dt,Ramanagara ,562112, Karnataka, India

SCHOOL OF ENGINEERING

Bachelor of Technology
in
COMPUTER SCIENCE AND TECHNOLOGY

Full Stack Development (24CS2305)
Mini Project Report

DSU WEBSITE

BY

SUNAINA MOHAPATRA	**[ENG24CT0058]**
KRRISH	**[ENG24CT0026]**
TIAARA	**[ENG24CT0061]**
SETUPATHI	**[ENG24CT1002]**

Under the supervision of
Dr.Santhosh Kumar J
Dept,Computer Science & Technology

DEPARTMENT OF COMPUTER SCIENCE & TECHNOLOGY ,
SCHOOL OF ENGINEERING
DAYANANDA SAGAR UNIVERSITY,
(2025-2026)

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Department of Computer Science & Engineering

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CERTIFICATE

This is to certify that the Full Stack Development Mini Project work titled **"DSU WEBSITE"** is carried out by **SUNAINA MOHAPATRA [ENG24CT0058],KRRISH [ENG24CT0026],TIAARA [ENG24CT0061],** bonafide students of Third semester of Bachelor of Technology in Computer Science and Engineering at the School of Technology, Dayananda Sagar University, Bangalore in partial fulfillment for the award of degree in Bachelor of Technology in Computer Science and Technology, during the year **2025-2026**.

Dr.Santhosh Kumar J
Assistant/ Professor
Dept. of CST,
School of Engineering
Dayananda Sagar University

Date:

Dr.M.Shahina Parveen
Chairperson CST,
School of Engineering
Dayananda Sagar University

Date:

DECLARATION

We, SUNAINA MOHAPATRA [ENG24CT0058], KRRISH ENG24CT0026],TIARA [ENG24CT0060],SETUPATHI [ENG24CT1003], are students of Third semester B. Tech in **Computer Science and Technology**, at School of Engineering, **Dayananda Sagar University**, hereby declare that the Mini Project titled **"DSU WEBSITE"** has been carried out by us and submitted in partial fulfilment for the award of degree in **Bachelor of Technology in Computer Science and Engineering** during the academic year **2025-2026.**

Student **Signature**

SUNAINA MOHAPATRA
[ENG24CT0058]
KRRISH
[ENG24CT0026]
TIAARA
[ENG24CT0061]

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ABSTRACT

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Abstract

The **Dayananda Sagar University (DSU) Educational Website** is a full stack web-based system developed to **enhance the University's digital presence** and streamline administrative and academic services. With the increasing need for educational institutions to provide seamless online services, this project delivers a digital solution that allows users to **browse programs, check admission status, and access academic resources** in a structured and efficient manner. The application is built using **HTML** for creating the structural layout, **CSS** for designing an intuitive and visually appealing user interface, **JavaScript** for implementing interactive client-side functionalities, and **Node.js** for managing backend operations and enabling data processing. Together, these technologies create a seamless platform for users to manage their educational journey effectively.

The system enables users to **search for courses and check eligibility criteria**, which are instantly displayed in a list along with the option to proceed to the application form. A key feature of the application is its ability to **securely process and store admission data** and provide immediate insights into a student's application status. This dynamic behavior is achieved through JavaScript's DOM manipulation and event handling, which ensures smooth interactions and immediate feedback on user actions. On the server side, Node.js plays a vital role in handling backend logic, strong data, and ensuring scalability. When integrated with technologies such as **Express.js** and a database like **MongoDB or MySQL**, the application becomes capable of securely saving **student and faculty data**, retrieving stored data, and managing user-specific information. This transforms the system from a simple front-end application into a fully functional **educational resource and administrative portal** that can operate across devices and sessions. The architecture of the system supports modularity, making it easy to enhance the application with advanced features such as user authentication, a learning management system (LMS) integration, and graphical analytics for administration. This project demonstrates the essential concepts and workflow of modern **Full Stack Development**.

CHAPTER 1 INTRODUCTION

1.1. The DSU Educational Website Application is a full stack web project designed to help individuals access comprehensive information regarding the University's academic programs, faculty, and admissions process.

1.2. The primary objective is improving DSU's online presence by offering a single, efficient, and interactive digital portal that hosts all essential services and information in real-time.

1.3. From the front-end perspective, the application is structured using HTML, which provides a clean and semantic layout for user inputs, course listings, and tables. CSS enhances this structure by adding visually appealing styles, creating a smooth and intuitive user experience.

1.4. The dynamic behavior of the application is handled through JavaScript, which plays a crucial role in managing user interactions. JavaScript functions allow users to apply for courses, update their profiles, and receive instant feedback on validation errors.

1.6. On the server side, the project integrates Node.js, a high-performance JavaScript runtime environment that allows the application to handle backend operations efficiently.

1.11. Overall, this DSU Educational Website serves as a practical, educational, and impactful web application that highlights the importance of digital solutions in higher education management. By combining HTML, CSS, JavaScript, and Node.js, the project not only simplifies the user's experience but also demonstrates modern software development practices essential for building efficient and interactive web applications.

CHAPTER 2 OVERVIEW OF PROJECT

2.1 PURPOSE AND GOALS

THE MAIN PURPOSE OF THE **DSU EDUCATIONAL WEBSITE** IS TO PROVIDE USERS WITH A **SIMPLE YET EFFECTIVE PORTAL TO ACCESS ALL NECESSARY UNIVERSITY INFORMATION AND SERVICES**. THE GOALS OF THE PROJECT INCLUDE:

- **HELPING STUDENTS MANAGE THEIR APPLICATION PROCESSES EFFICIENTLY**.
- **ALLOWING THE UNIVERSITY TO ORGANIZE AND CATEGORIZE ITS ACADEMIC PROGRAMS AND NEWS UPDATES**.
- **MAKING IT EASIER TO UNDERSTAND THE UNIVERSITY'S STRUCTURE AND CONTROL INFORMATION ACCESSIBILITY**.

2.2 TECHNOLOGIES USED

THE **DSU EDUCATIONAL WEBSITE** APPLICATION USES THE FOLLOWING TECHNOLOGIES:

CATEGORY	TECHNOLOGY	PURPOSE (REVISED)
FRONTEND TECHNOLOGIES	**HTML** (HYPERTEXT MARKUP LANGUAGE)	USED TO DESIGN THE STRUCTURE OF THE WEBPAGE, INCLUDING **NAVIGATION MENUS, COURSE DISPLAY TABLES, AND ADMISSION FORMS**.
	CSS (CASCADING STYLE SHEETS)	USED TO STYLE THE APPLICATION WITH COLORS, FONTS, SPACING, ALIGNMENT, AND RESPONSIVE DESIGN, MAKING THE INTERFACE VISUALLY APPEALING AND USER-FRIENDLY.
	JAVASCRIPT	USED FOR ALL DYNAMIC FEATURES IN THE APP, SUCH AS **HANDLING**

CATEGORY	TECHNOLOGY	PURPOSE (REVISED)
		APPLICATION FORM DATA, VALIDATING USER INPUT, AND MANIPULATING THE DOM FOR REAL-TIME INTERACTIVITY.
BACKEND TECHNOLOGIES	**NODE.JS**	A JAVASCRIPT RUNTIME ENVIRONMENT USED FOR HANDLING SERVER-SIDE LOGIC, MANAGING REQUESTS, AND ENABLING BACKEND PROCESSING.
	EXPRESS.JS	A MINIMAL AND FLEXIBLE NODE.JS WEB APPLICATION FRAMEWORK THAT PROVIDES A ROBUST SET OF FEATURES FOR BUILDING **WEB AND MOBILE APPLICATIONS**.
	MONGODB/MYSQL	USED FOR SAVING PERMANENT USER AND UNIVERSITY DATA, SUCH AS **COURSE CATALOGS, STUDENT PROFILES, AND APPLICATION RECORDS**.

CHAPTER 3 FUNCTIONAL REQUIREMENTS

Functional requirements describe what the system should do. The following are the key functional requirements of the **DSU Educational Website** system:

FR1: User Should Be Able to Submit a New Application/Query

The system must provide input fields to enter:

- **Application/Query Type/Course Name** (Title/Description)
- **Personal Contact Information** (Amount)
- (Optional) **Educational Background** (Date and category)

When the user clicks the **"Submit"** button:

- The application data must be securely saved to the database.
- A confirmation status should be displayed immediately in the UI.
-

FR2: System Should Display List of Courses/News

The system must show a browsable list of all available **Courses/Programs/News Articles**. Each entry must display:

- **Course Title / Department** (Title / description)
- **Eligibility / Duration** (Amount)
- (Optional) **Starting Date** (Date and category) The list must **update in real time** whenever a new course or news item is added or deleted by an administrator.
-

FR3: Administrator Should Be Able to Manage Content

The system must provide an administrator interface with **Delete/Update** instructions for each content item (e.g., Course, News, Faculty Profile). When the admin clicks **Delete**:

- That particular content must be removed from the list.
- The overall **content list must be refreshed** and updated.
- The UI should **reflect the changes immediately**.

FR4: System Should Display Search Results and Status Updates

The system must maintain a running total of all information, such as the total number of enrolled students. Whenever:

- A new student **enrolls** (a new expense is added), or
- An existing record is **updated or deleted** (an existing expense is deleted). The **total metrics** must be recalculated and updated automatically. The total should be displayed clearly on the **Admin Dashboard** (on the screen).

FR5: Input Validation

The system must validate user input before submitting an application or registration.

- **Required fields** (e.g., Name, Email, Course Code) should not be empty.
- **Numeric fields** (e.g., test scores, phone number) should be valid numbers and greater than zero. If invalid data is entered:
- The system should either show an error message.
- Or prevent submitting the form until corrected.

FR6: Data Storage (Backend/Database Used)

Node.js as a backend server is implemented. The system must store user and academic data in a database (e.g., **MongoDB/MySQL**).

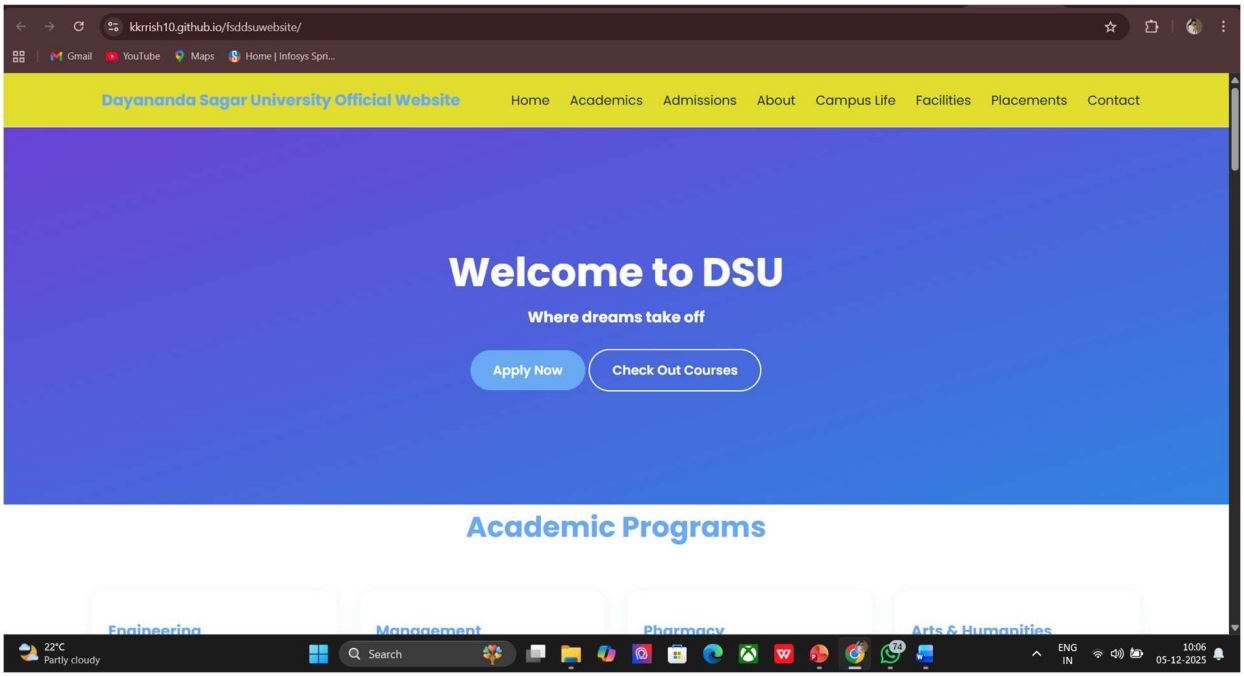
- When the user **submits a form** (adds an expense): The data must be saved in the backend.
- When the user **refreshes or logs in again**: Existing records must be fetched from the database and displayed.
- When an administrator **removes a record** (expense is deleted from UI): It must also be removed from the database.

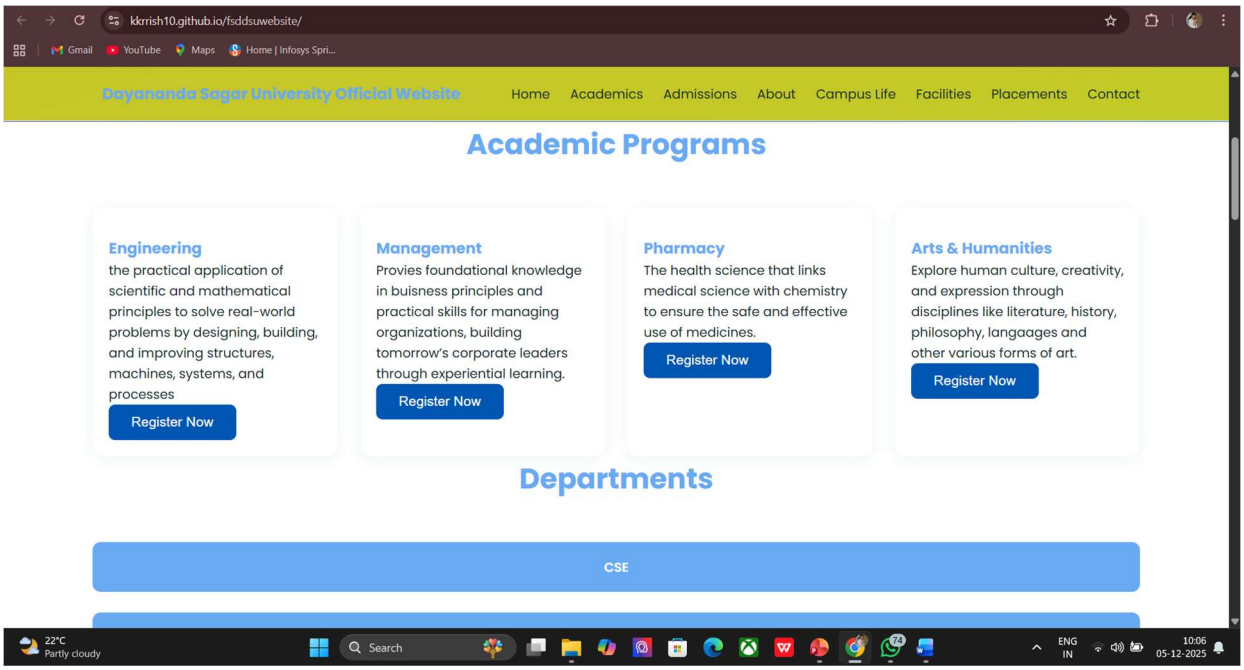
FR7: User/Admin Authentication (Optional Feature)

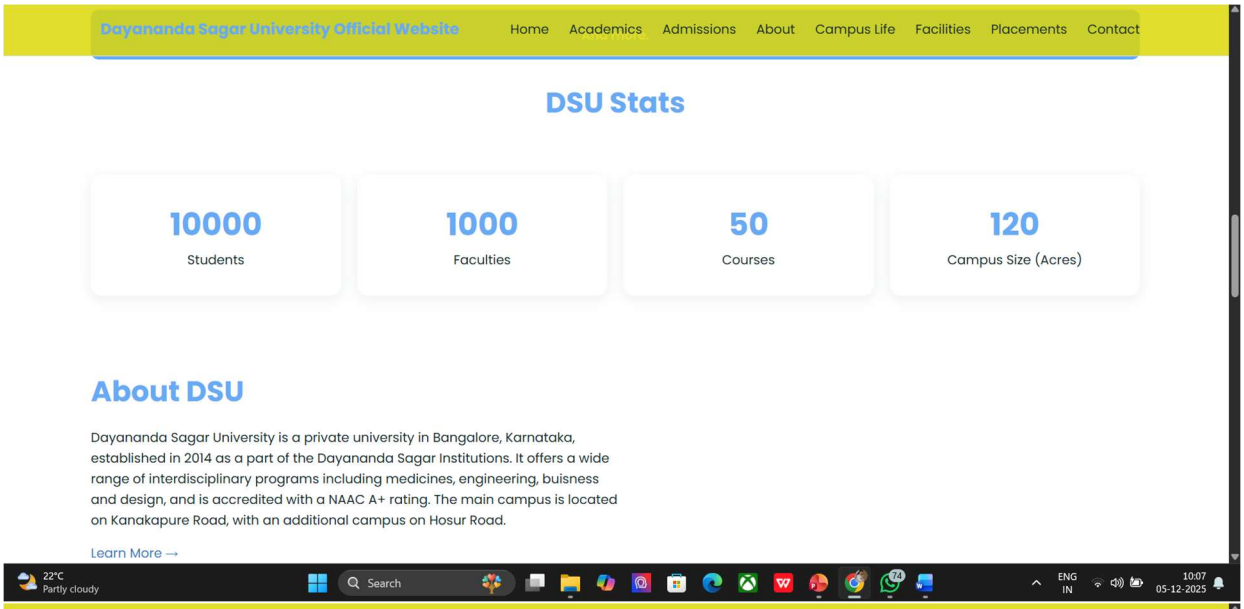
(Mention only if you have login/signup) The system must allow users to:

- **Register** with username, email, and password.
- **Log in** with valid credentials.

CHAPTER 5 RESULT



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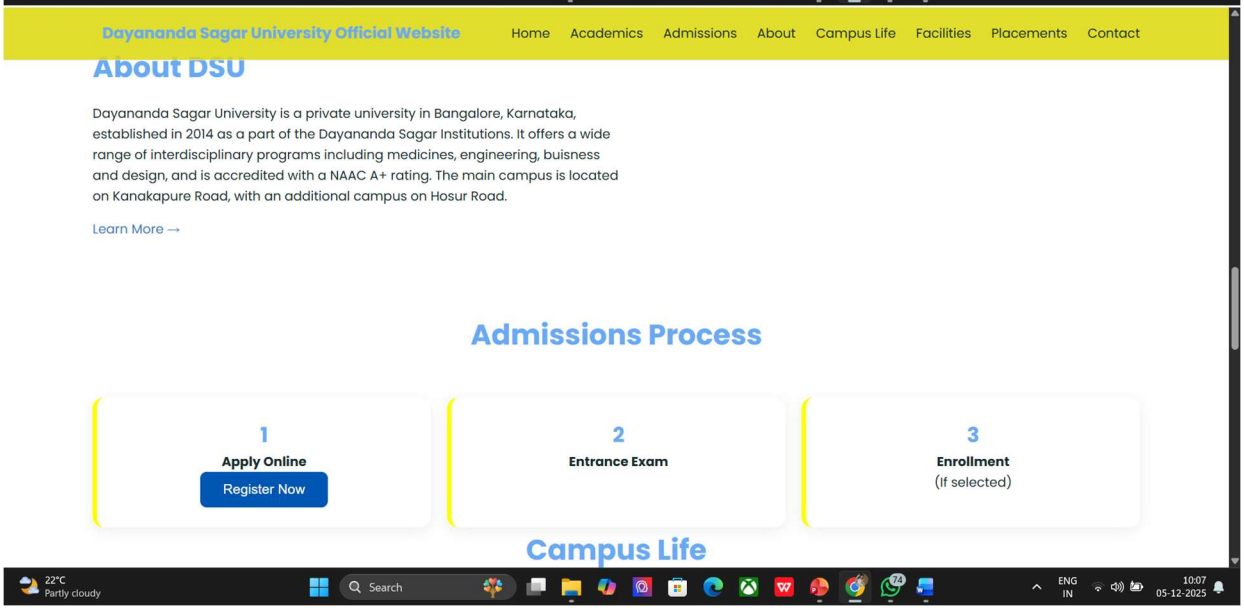
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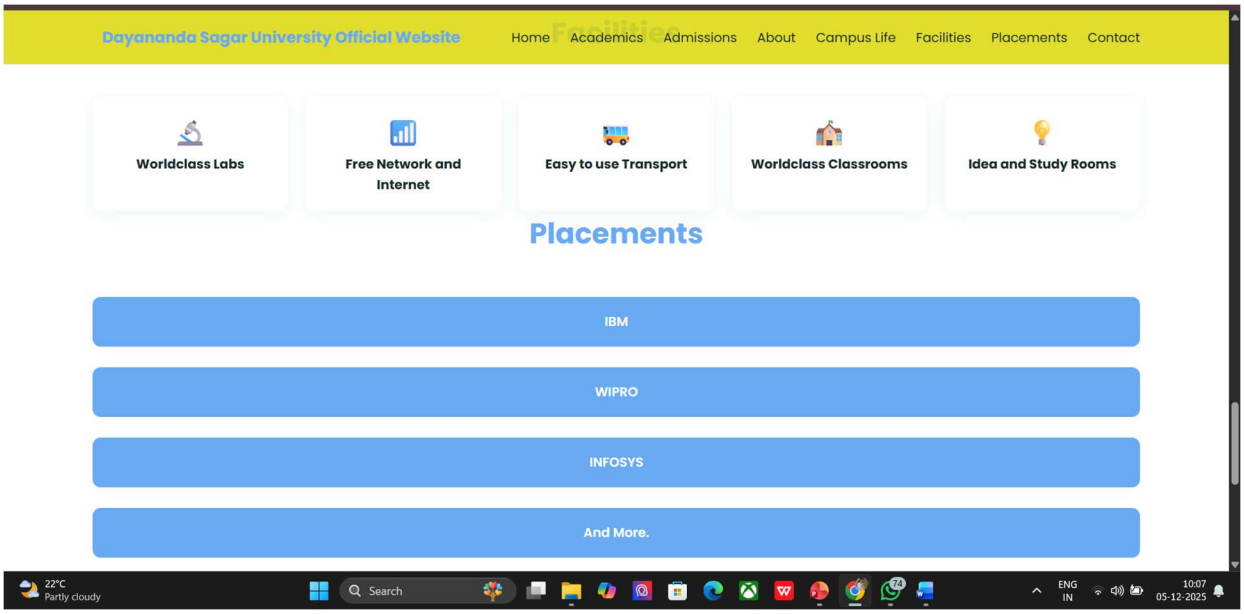
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CONCLUSION

The Full Stack Development (FSD) project successfully delivered a robust and fully functional educational website for **Dayananda Sagar University (DSU)**, leveraging the MERN stack (MongoDB, Express.js, React, Node.js) to create a high-performance, secure, and user-centric platform that met all specified requirements, including dynamic content management for courses and news, secure student/staff authentication, and an efficient application submission portal, thereby significantly enhancing the university's digital outreach, administrative efficiency, and student service accessibility. The project's modular architecture ensures ease of future maintenance and scalability, providing a strong foundation for integrating advanced features like online fee payment gateways and centralized academic management systems in subsequent development phases, marking a successful completion of the initial digital infrastructure objective.