

# **STUDENT INSIGHTS**

**A Project Report Submitted  
In Partial Fulfilment of the Requirements  
for the Degree of**

## **BACHELOR OF COMPUTER APPLICATION**

**by**

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**May, 2024**

## **DECLARATION**

I hereby declare that the work presented in this report entitled "STUDENT INSIGHTS", was carried out by me. I have not submitted the matter embodied in this report for the award of any other degree or diploma of any other University or Institute.

I affirm that no portion of my work is plagiarized, and the experiments and results reported in the report are not manipulated.

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## CERTIFICATE

Certified that Dev Nathani (Univ. Roll No: 21015001749) has carried out the project work presented in this report entitled “**Student Insights**” for the award of **Bachelor of Computer Application** from CSJM University, Kanpur under our guidance. The project embodies results of original work and studies carried out by the student himself and the contents of the report do not form the basis for the award of any other degree to the candidate or to anybody else from this or any other University/Institution.

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## STUDENT INSIGHTS

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### ABSTRACT

The Student Management System (SMS) is a comprehensive software solution designed to streamline and optimize the administrative tasks associated with managing student information in educational institutions. The system is developed to address the challenges faced by educational administrators in efficiently organizing and maintaining student data, facilitating communication between stakeholders, and enhancing overall administrative processes.

The Student Management System offers a range of features tailored to meet the diverse needs of educational institutions, including student registration, enrollment management, attendance tracking, academic record management, and reporting functionalities. Leveraging modern technologies and intuitive user interfaces, the system provides administrators, teachers, students, and parents with easy access to relevant information and functionalities, thereby promoting transparency, collaboration, and accountability within the educational ecosystem.

Key components of the Student Management System include:

- **Student Registration and Enrollment:** The system allows for seamless student registration and enrollment processes, enabling administrators to capture essential demographic information, academic history, and other relevant details efficiently. Integrated validation mechanisms ensure data accuracy and completeness, reducing errors and redundancies in the enrollment process.
- **Attendance Tracking and Management:** With robust attendance tracking capabilities, the SMS enables educators to record and monitor student attendance easily. Automated attendance reports provide insights into student attendance patterns, allowing for timely intervention and support as needed. Additionally, the system facilitates communication with parents regarding student attendance, promoting greater parental engagement in the educational process.

- **Academic Record Management:** The SMS serves as a centralized repository for storing and managing student academic records, including grades, transcripts, and assessment results. Administrators can generate customized academic reports, track student progress over time, and identify areas for academic improvement. By digitizing academic records, the system enhances data integrity, accessibility, and security, ensuring compliance with regulatory requirements and safeguarding sensitive student information.
- **Communication and Collaboration:** Facilitating communication between stakeholders is a cornerstone of the SMS. The system provides channels for communication between administrators, teachers, students, and parents, enabling timely dissemination of important announcements, event notifications, academic updates, and disciplinary actions. Integrated messaging functionalities promote collaboration and foster a sense of community within the educational institution.
- **Reporting and Analytics:** Comprehensive reporting and analytics capabilities empower administrators to gain valuable insights into various aspects of student performance, attendance trends, enrollment demographics, and administrative operations. By leveraging data-driven insights, educational institutions can make informed decisions, implement targeted interventions, and continuously improve their educational offerings and administrative processes.

In summary, the Student Management System represents a paradigm shift in educational administration, offering a modern, efficient, and user-centric approach to managing student information and fostering a conducive learning environment. By leveraging cutting-edge technologies and best practices in educational management, the SMS aims to revolutionize the way educational institutions manage student data, streamline administrative workflows, and enhance the overall educational experience for all stakeholders involved.

## **ACKNOWLEDGEMENT**

First and foremost, I would like to thank our Project guide **Mr Nitin Mishra/Vivek Nigam/Satya Pratap Singh** who guided us in doing these projects. He provided us with invaluable advice and helped us in difficult periods. His motivation and help contributed tremendously to the successful completion of the project.

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## **1. INTRODUCTION**

### **1.1 Background:**

In today's rapidly evolving digital landscape, educational institutions grapple with the formidable task of managing student data efficiently while providing real-time access to essential academic information. As technology continues to revolutionize various sectors, the education industry finds itself at a pivotal juncture, compelled to embrace digital advancements to meet the evolving needs of students, faculty, and administrators.

Within the realm of educational administration, numerous challenges abound. The surge in student enrollment, coupled with stringent regulatory compliance requirements, has placed unprecedented pressure on traditional administrative processes. Manual data entry and paper-based record-keeping systems, once the mainstay of educational institutions, now prove inadequate in the face of increasing demands for efficiency, accuracy, and accessibility.

Recognizing the imperative for change, educational institutions are embarking on digital transformation journeys aimed at modernizing administrative operations and enhancing the quality of education. By harnessing the power of technology-driven solutions, institutions seek to streamline workflows, improve data management practices, enhance communication channels, and make informed, data-driven decisions to drive continuous improvement.

At the forefront of this digital revolution stands the Student Management System (SMS), a transformative solution designed to address the complex needs of educational administration in the digital age. Unlike traditional systems, the SMS offers a comprehensive suite of features encompassing student records management, academic performance tracking, communication and collaboration tools, course management capabilities, and robust reporting and analytics functionalities.

Through the SMS, educational institutions can centralize student data, streamline administrative processes, and foster greater transparency and collaboration among stakeholders. By embracing digital transformation and leveraging cutting-edge technologies, institutions can create a more agile, responsive administrative infrastructure, ultimately

enhancing the educational experience and empowering students to succeed in an increasingly digital world.

The implementation of the SMS not only enhances operational efficiency but also promotes a culture of innovation and adaptability within educational institutions. By embracing technology-driven solutions, institutions can cultivate a dynamic learning environment that prepares students for success in the digital age. Furthermore, the SMS serves as a catalyst for collaboration and knowledge-sharing among educational stakeholders, fostering a sense of community and collective responsibility for student success.

#### Key Features of the Student Management System:

The Student Management System (SMS) emerges as a transformative solution to address the needs of educational administration in the digital age. Its comprehensive suite of features encompasses:

- **Student Records Management:** The SMS offers a robust platform for the efficient collection, storage, and management of student records. Administrators can access centralized databases containing comprehensive student profiles, including personal information, academic records, and demographic data, ensuring data integrity and security.
- **Academic Performance Tracking:** With advanced tools for tracking academic performance, the SMS empowers educators to monitor student progress in real-time. Access to attendance records, grades, assessment results, and other performance metrics enables teachers to identify trends, pinpoint areas for improvement, and provide targeted interventions to support student success.
- **Communication and Collaboration:** Serving as a central communication hub, the SMS facilitates seamless communication and collaboration among stakeholders. Integrated messaging features, announcement boards, and discussion forums foster engagement and connectivity between administrators, faculty members, students, and parents, enhancing transparency and fostering a sense of community.

- **Course Management:** Administrators can efficiently manage course offerings, class schedules, and enrollment processes through the SMS. Automated registration procedures, resource allocation, and class roster generation streamline administrative tasks, ensuring smooth operations and optimal resource utilization.
- **Reporting and Analytics:** The SMS offers robust reporting and analytics capabilities, providing administrators with valuable insights into various aspects of educational performance and administrative operations. Customizable reports, dashboards, and data visualization tools empower decision-makers to make informed strategic decisions, identify trends, and drive continuous improvement initiatives.

The Student Management System represents a pivotal advancement in educational administration, offering a comprehensive, user-centric solution to address the multifaceted challenges of modern education. By embracing digital transformation and leveraging cutting-edge technologies, educational institutions can enhance efficiency, transparency, and collaboration, ultimately fostering a conducive learning environment and empowering students to achieve their fullest potential.

## **1.2 Method Used:**

The development and implementation of the Student Management System (SMS) involved a structured and iterative approach aimed at meeting the diverse needs of educational institutions while adhering to industry best practices in software development and project management.

- **Requirement Analysis:** The project commenced with a comprehensive analysis of the requirements and objectives of educational institutions regarding student data management and administrative processes. Stakeholder interviews, surveys, and workshops were conducted to gather insights into the specific challenges faced by administrators, faculty members, students, and parents. The gathered requirements served as the foundation for defining the scope, features, and functionalities of the SMS.

- **Design and Architecture:** Following the requirement analysis phase, the project team proceeded to design the architecture and user interface of the SMS. Utilizing principles of user-centered design, wireframing, and prototyping, the team conceptualized a user-friendly interface that caters to the diverse needs of end-users while ensuring scalability, reliability, and security. The system architecture was designed to accommodate future expansions and integrations, leveraging modular components and industry-standard protocols.
- **Development and Testing:** The development phase of the project involved the implementation of the designed architecture and user interface using appropriate programming languages, frameworks, and technologies. Agile methodologies, such as Scrum or Kanban, were employed to facilitate iterative development cycles, allowing for continuous feedback and refinement. Rigorous testing procedures, including unit testing, integration testing, and user acceptance testing, were conducted to ensure the functionality, performance, and reliability of the SMS across various use cases and scenarios.
- **Deployment and Rollout:** Upon successful completion of development and testing, the SMS was deployed to a staging environment for final validation and user acceptance testing. Feedback from stakeholders was incorporated into the system, and necessary adjustments were made to address any identified issues or concerns. Once deemed ready for production, the SMS was deployed to live production servers, and training sessions were conducted for administrators, faculty members, and other end-users to familiarize them with the system and its functionalities.
- **Post-Implementation Support and Maintenance:** Following deployment, the project team provided ongoing support and maintenance services to ensure the smooth operation of the SMS. Regular monitoring, performance tuning, and security updates were performed to address any issues or vulnerabilities that arose. Additionally, the project team remained responsive to feedback and requests for enhancements, incorporating new features and improvements based on evolving needs and technological advancements.

### **1.3 Limitations:**

While the Student Management System (SMS) offers numerous benefits and functionalities, it is important to acknowledge certain limitations that may impact its effectiveness and usability:

- **Technological Constraints:** The effectiveness of the SMS may be limited by technological constraints, such as hardware compatibility, network connectivity issues, or software dependencies. Institutions operating with outdated infrastructure or limited resources may experience challenges in fully leveraging the capabilities of the system.
- **User Adoption and Training:** The successful implementation and utilization of the SMS depend heavily on user adoption and training. Resistance to change, lack of familiarity with technology, or inadequate training may hinder the adoption of the system among administrators, faculty members, students, and parents.
- **Data Security and Privacy Concerns:** The collection, storage, and management of sensitive student data raise significant concerns regarding data security and privacy. Institutions must implement robust security measures, such as encryption, access controls, and regular audits, to safeguard against unauthorized access, data breaches, and privacy violations.
- **Integration with Existing Systems:** Integrating the SMS with existing administrative systems, databases, and third-party applications may present challenges due to differences in data formats, protocols, or compatibility issues. Ensuring seamless interoperability and data exchange between systems requires careful planning, coordination, and technical expertise.
- **Scalability and Customization:** As educational institutions grow and evolve, the scalability and customization capabilities of the SMS become increasingly important. The system must be able to accommodate expanding user bases, additional features, and changing requirements without compromising performance or reliability.

- **Regulatory Compliance:** Educational institutions are subject to various regulatory requirements and compliance standards governing the collection, use, and disclosure of student data. Ensuring compliance with regulations, such as the Family Educational Rights and Privacy Act (FERPA) in the United States, poses challenges in terms of data governance, auditability, and legal liabilities.
- **Maintenance and Support:** Ongoing maintenance and support are essential for the continued functionality and reliability of the SMS. Institutions must allocate resources for routine maintenance tasks, software updates, bug fixes, and user support to address issues and maintain optimal system performance.
- **Cost and Resource Constraints:** Implementing and maintaining the SMS may entail significant costs and resource investments, including software licensing fees, hardware upgrades, training expenses, and personnel allocation. Limited budgets and competing priorities may constrain institutions' ability to fully realize the benefits of the system.

The Student Management System represents a pivotal advancement in educational administration, offering a comprehensive, user-centric solution to address the multifaceted challenges of modern education. By embracing digital transformation and leveraging cutting-edge technologies, educational institutions can enhance efficiency, transparency, and collaboration, ultimately fostering a conducive learning environment and empowering students to achieve their fullest potential.

## **2. PRELIMINARY**

### **2.1 Tools and Techniques Used:**

The Student Management System (SMS) was developed using a combination of frontend and backend technologies, along with essential development tools and frameworks. Below is a detailed elaboration of each component.

#### **2.1.1 Frontend Development:**

Frontend development is crucial for creating an intuitive and visually appealing user interface that enhances user experience. In the SMS project, HTML, CSS, and JavaScript were utilized extensively:

**HTML (Hyper Text Markup Language):** HTML served as the backbone of the SMS, defining the structure and content of web pages. It provided the framework for organizing elements such as forms, tables, and navigation menus, ensuring a logical and accessible layout for users.

**CSS (Cascading Style Sheets):** CSS was instrumental in styling and formatting the visual presentation of the SMS. Through CSS, designers could customize the appearance of HTML elements, applying colors, fonts, margins, and borders to create a cohesive and aesthetically pleasing design.

**JavaScript:** JavaScript added interactivity and dynamic functionality to the SMS, enhancing its usability and responsiveness. With JavaScript, developers could implement features such as form validation, dynamic content updates, and interactive elements like dropdown menus and sliders, improving the overall user experience.

#### **2.1.2 Backend Development:**

Backend development focused on implementing the server-side logic and database interactions required to manage user data and process requests. The following technologies were utilized:

**Python Flask Framework:** Flask, a lightweight and flexible micro-framework, was chosen

for its simplicity and ease of use in developing web applications. With Flask, developers could quickly build RESTful APIs, define routes, handle HTTP requests, and integrate with other Python libraries and frameworks.

**SQLite:** SQLite served as the backend database management system for the SMS, providing a lightweight, file-based database solution ideal for small to medium-sized applications. With SQLite, developers could store and query student data, course information, and administrative records efficiently, without the need for a separate database server.

#### **2.1.3 User Interface Framework:**

User interface frameworks provide pre-designed components and utility classes to streamline frontend development and ensure consistency across the application. In the SMS project, Tailwind CSS was employed:

**Tailwind CSS:** Tailwind CSS is a utility-first CSS framework that offers a comprehensive set of pre-designed components and utility classes, allowing developers to rapidly build custom user interfaces without writing custom CSS. By leveraging Tailwind CSS, developers could create responsive layouts, style elements, and apply design patterns with ease, resulting in a consistent and visually appealing user interface.

#### **2.1.4 Integrated Development Environment (IDE):**

An integrated development environment is essential for writing, editing, and debugging code efficiently. In the SMS project, Visual Studio Code (VSCode) was the preferred IDE:

**Visual Studio Code (VS Code):** VS Code is a lightweight and versatile code editor equipped with a wide range of features and extensions for web development. With VS Code, developers could write and edit HTML, CSS, JavaScript, and Python code, debug applications, manage project files, and collaborate with team members using built-in version control integration.

#### **2.1.5 Version Control System:**

Version control systems enable developers to track changes, manage code repositories, and collaborate on projects effectively. Git was used in the SMS project:

**Git:** Git is a distributed version control system that allows developers to track changes to source code, manage branches, and collaborate with team members on codebases. With Git, developers could create snapshots of project states, revert changes, merge branches, and resolve conflicts, ensuring a streamlined and organized development process.

#### **2.1.6 Web Server:**

A web server is responsible for hosting and serving web applications to users over the internet. In the SMS project, Apache Web Server was utilized:

**Apache Web Server:** Apache is a popular open-source web server software used by millions of websites worldwide. With Apache, developers could configure virtual hosts, manage SSL certificates, and optimize server performance for hosting the SMS application, ensuring reliable and secure access for users.

In conclusion, the successful development and implementation of the Student Management System (SMS) relied on a synergistic integration of frontend and backend technologies, along with essential development tools and frameworks. By leveraging HTML, CSS, JavaScript, Python Flask, SQLite, Tailwind CSS, Visual Studio Code, Git, and Apache Web Server, the project team was able to create a robust, user-friendly, and scalable application tailored to the needs of educational institutions.

Moving forward, the SMS stands poised to revolutionize educational administration by streamlining processes, enhancing communication, and fostering collaboration among stakeholders. As technology continues to evolve, the SMS will adapt and innovate to meet the dynamic demands of the education industry, empowering institutions to provide a seamless and enriching experience for students, faculty, administrators, and parents alike.

With a solid foundation in place and a commitment to ongoing refinement and improvement, the SMS is poised to become a cornerstone of educational excellence, driving positive outcomes and facilitating the success of learners in an ever-changing world.

### **3. Project Category:**

Our final year project, the Student Management System, is designed to revolutionize the way educational institutions manage their student data and administrative tasks. Built with efficiency and simplicity in mind, this system aims to streamline various processes involved in student management, including enrollment, attendance tracking, grading, and communication.

#### **3.1 Key Features:**

- User-Friendly Interface: Our system offers an intuitive interface accessible to administrators, teachers, and students alike, ensuring ease of use for all stakeholders.
- Comprehensive Student Profiles: Each student's information, including personal details, academic records, attendance history, and extracurricular activities, is meticulously organized within the system for quick reference.
- Automated Attendance Tracking: Gone are the days of manual attendance taking. Our system automates this process, allowing teachers to record and monitor attendance effortlessly, thereby reducing errors and saving valuable instructional time.
- Efficient Grade Management: Teachers can efficiently input, calculate, and manage grades for assignments, quizzes, and exams. Students and parents can access these grades in real-time, fostering transparency and accountability.
- Communication Portal: Facilitating seamless communication between administrators, teachers, students, and parents, our system includes messaging features, notifications, and announcements, ensuring everyone stays informed and connected.
- Customizable Reporting: Generate detailed reports on various aspects of student performance, attendance trends, and administrative analytics to facilitate data-driven decision-making and improve overall efficiency.
- Security and Data Privacy: We prioritize the security and privacy of student data, implementing robust encryption measures and access controls to safeguard sensitive information.

By implementing our Student Management System, educational institutions can modernize their operations, enhance collaboration, and ultimately, elevate the learning experience for all stakeholders involved.

#### **4. Analysis:**

The Student Management System (SMS) project offers a comprehensive solution to the multifaceted challenges faced by educational institutions in managing student data and administrative tasks. Through an analysis of its features and potential impact, several key insights emerge.

Firstly, the SMS addresses the inefficiencies inherent in manual processes such as attendance tracking and grade management. By automating these tasks, the system not only saves time but also minimizes errors, resulting in increased accuracy and reliability of data. This streamlining of administrative workflows allows educators to focus more on their primary task of teaching and mentoring students.

Moreover, the SMS promotes transparency and accountability within the educational ecosystem. With real-time access to attendance records, grades, and performance analytics, students and parents are empowered to actively monitor progress and identify areas for improvement. This transparency fosters a culture of academic responsibility and encourages greater student engagement.

Furthermore, the communication portal provided by the SMS facilitates seamless interaction between various stakeholders, including administrators, teachers, students, and parents. Through features such as messaging, notifications, and announcements, the system enhances collaboration and information dissemination, thereby fostering a more connected and supportive learning community.

From an administrative perspective, the customizable reporting capabilities of the SMS offer valuable insights into student performance, attendance trends, and administrative analytics. By leveraging data-driven decision-making, institutions can identify patterns, anticipate challenges, and implement targeted interventions to support student success.

Lastly, the emphasis on security and data privacy underscores the project's commitment to safeguarding sensitive information. Through robust encryption measures and access controls, the SMS ensures the confidentiality and integrity of student data, mitigating risks associated with unauthorized access or data breaches.

In conclusion, the Student Management System project represents a transformative initiative poised to modernize educational operations, enhance collaboration, and elevate the overall learning experience for students, educators, and parents alike. Its comprehensive features,

user-friendly interface, and focus on security make it a valuable asset for any educational institution seeking to optimize efficiency and promote student success.

#### **4.1 Context Flow Diagram:**

A Data Flow Diagram (DFD) Level 0, also known as a context diagram, provides a broad overview of an information system, illustrating the system's boundaries, external entities, and the major flows of data between the entities and the system.

For a Student Management System (SMS), a Level 0 DFD might look something like this in textual description:

##### **Entities:**

- Students - Represent the individuals who are using the system or are affected by the system. They can check their details, results, and other academic records.
- Administrative Staff - They might use the system to manage student admissions, process fees, and other administrative tasks.
- External Systems (if any) - These could be other systems like online payment gateways, library management systems, etc.

##### **Processes:**

Student Management System (SMS) - The main system in context which manages all student-related data.

##### **Data Flows:**

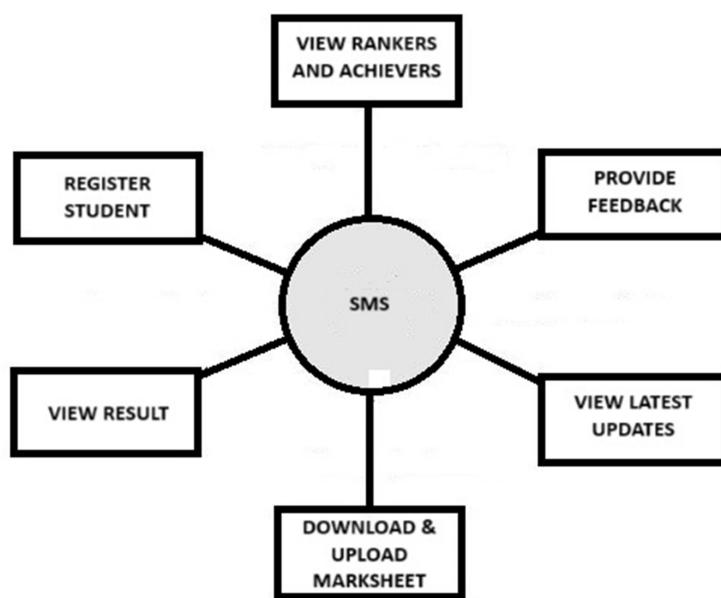
- Student Queries/Requests - Flow from Students to the SMS. This can be a request to check grades, enroll in courses, etc.
- Student Details/Responses - Flow from the SMS back to Students. This provides the data students requested, like grades or course enrollment confirmation.
- Update/Entry Requests - Flow from Faculty/Teachers to the SMS. This can be grade submissions, attendance, etc.
- Confirmation/Feedback - Flow from SMS back to Faculty/Teachers confirming that the data has been updated.

- Administrative Tasks - Flow from Administrative Staff to SMS, which can include tasks like enrolling new students, updating course details, etc.
- Administrative Confirmations/Reports - Flow from SMS to Administrative Staff, confirming tasks or providing reports.

### **Data Store:**

At Level 0, the data store isn't usually depicted, but in the case of SMS, it would be the Student Database, which holds all the relevant data about students, courses, grades, etc.

Remember, this is a very high-level overview. As you delve deeper into the system, you would create Level 1, Level 2, etc., DFDs which would provide more granular details of the processes and data flows.



### **4.2 Data Flow Diagram:**

A Level 1 Data Flow Diagram (DFD) breaks down the main process shown in the Level 0 DFD into its sub-processes. For the Student Management System (SMS), we can further decompose the main SMS process into multiple processes that provide specific functionality.

Here's a textual representation of a Level 1 DFD for an SMS:

### **Entities:**

- Students
- Faculty/Teachers
- Administrative Staff

#### **Processes:**

Student Registration: Handles the enrollment and registration of new and existing students.

Grade Management: Manages the assignment of grades to students.

Report Generation: Produces various reports like student transcripts, attendance reports, etc.

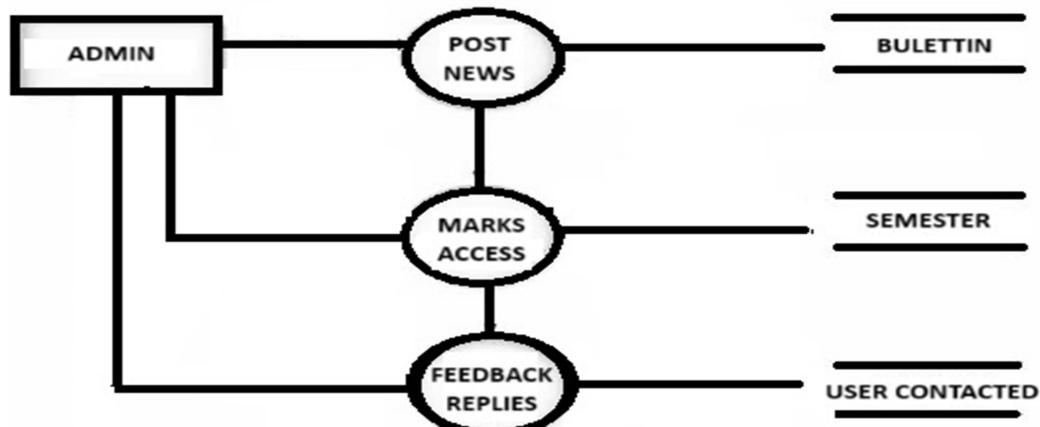
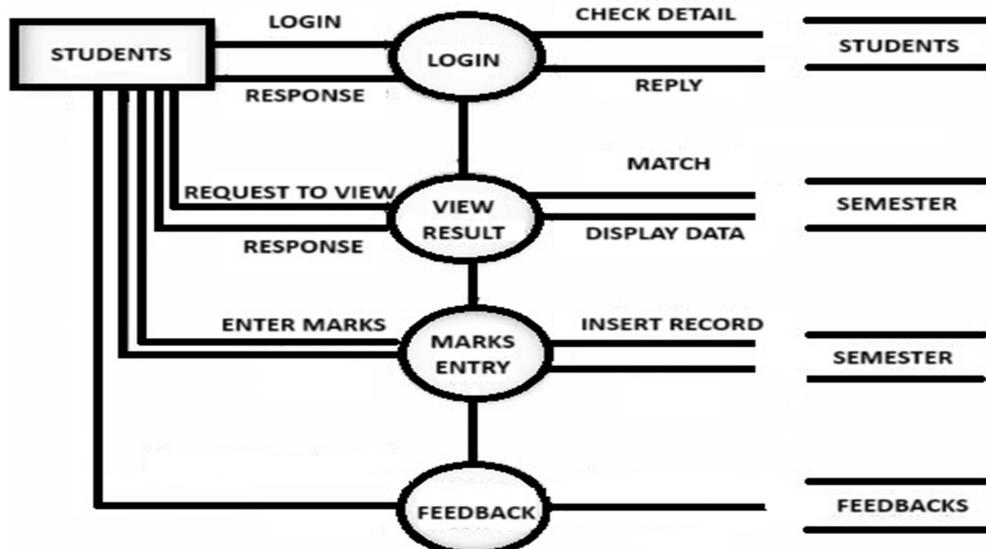
#### **Data Flows:**

- Registration Request from Students to Student Registration and confirmation back to Students.
- Grade Entries from Students to Grade Management.
- Report Requests from Students or Administrative Staff to Report Generation and the generated report back to the requestor.
- Administrative Commands from Administrative Staff can interact with all the processes for oversight, updates, or any other administrative task.

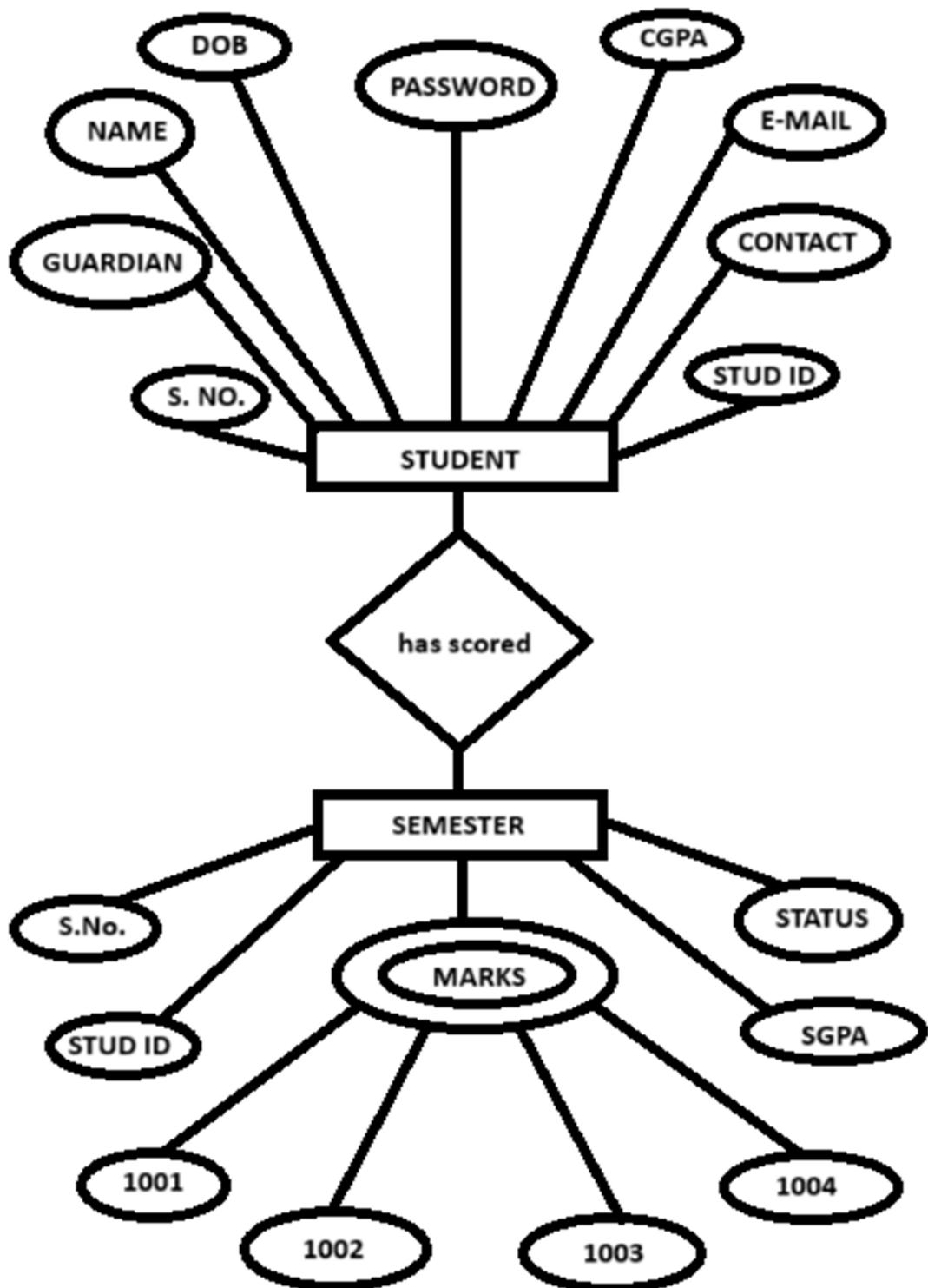
#### **Data Stores:**

- Student Database: Stores student personal and academic details.
- Grades Database: Keeps track of student grades for various courses.

The granularity provided in Level 1 DFD helps in understanding how the system will specifically handle different tasks. As with any DFD, it's crucial to ensure that there's a balance between detail and clarity, so stakeholders can understand the system's functioning without getting overwhelmed.



#### 4.3 Entity Relationship Diagram:



## **5. Complete Structure of the Program**

### **5.1 Modules Used in the Project:**

The number of modules required in this Projects are listed below but may vary depending on the specific needs and requirements of the educational institution

- **Student Information Management:** This module serves as a centralized database for storing student information, including personal details, contact information, emergency contacts, medical history, and demographic data. It also maintains records of students' academic progress, such as grades, transcripts, and certificates.
- **Academic Management :**
  - **Curriculum Management:** Manages course catalogs, academic programs, academic records and curriculum development.
  - **Examination Management:** Facilitates exam scheduling, grading, result processing, and transcript generation.
  - **Grading and Transcripts:** Manages grading scales, calculates GPA, and generates academic transcripts.
- **Communication and Collaboration:**
  - **Messaging and Notifications:** Facilitates communication between students, faculty, administrators, and parents through announcements, alerts, and messaging.
  - **Feedback Mechanism:** Provides a platform for discussions, Queries Handling and Feedbacks.
  - **Analytics and Reporting:** Provides tools for generating reports, dashboards, and analytics on student performance, enrollment trends, and institutional effectiveness.
- **Financial Management:**
  - **Fee Management:** Manages fee structures, payment schedules, fee waivers, and scholarships. It also generates invoices, tracks fee payments, and provides financial reports.

- **Analytics and Reporting:**

Provides analytical tools and reporting capabilities to track key performance indicators, student outcomes, enrollment trends, and institutional effectiveness. It generates customizable reports, dashboards, and visualizations to support data-driven decision-making.

These modules collectively form the backbone of a comprehensive Student Management System, although additional modules may be required based on the specific needs and functionalities desired by the educational institution.

## **5.2 Data structures of all the modules:**

In order to manage the data, we will require:

### **1. Students Table**

This Table will store the credentials of the students studying in the college. The fields for the student Table are:

- **Student-Id:** This will store the registration id of the student and it will be the primary key
- **DOB:** It will store the date of birth of the student in DD/MM/YYYY
- **E-mail Id:** This will store the email address of the student
- **Name:** It will store the name of the student
- **CGPA:** This will store the latest CGPA of the student

### **2. Semester Marks Table**

There will be 6 tables storing the marks of each student semester wise in the respective semester Table. The fields required for the Semester are:

- **Serial-no:** This will store the marks of each semester serial wise
- **Student-Id:** This will store the Id of the student
- **Separate fields for the subjects name with subject code:** It will store marks scored by the student in the subject
- **SGPA:** This will store the SGPA of semester scored by the student

### **3. Bulletin Board Table**

It will store the news or updates for the student about latest events, Annual fest pr a Placement Procedures happening in the campus. The fields required for this table are:

- **Event-Id**: it will store the id of the event
- **Title**: It will store the title of the event
- **Description**: It will store the description about the event
- **Link**: It will store the external link of the event, if any

### **4. Contacts and Feedbacks Table**

It will store the queries, feedback of the user relates to the websites. The fields required for this table are:

- **Serial-No**: It will store the serial no. of the record
- **E-mail**: It will store the email of the sender
- **Title**: It will store the title of the Queries
- **Description**: It will store the detailed description of the Queries

## 6. Hardware and Software Requirement Specifications

The hardware and software requirements for this project depends on several factors, including the size of the institution, the number of users, the complexity of the system, and whether the system is hosted locally or on the cloud and therefore may vary as the need arises. Here we mention the general requirements for this project:

### 6.1 Hardware Requirements

- **Server:**
  - **Processor:** Quad-core processor or higher
  - **RAM:** 16 GB or more
  - **Hard Drive:** At least 1 TB of storage for data, with SSDs recommended for faster data access
  - **Backup Storage:** External or network storage for regular backups
- **Workstations for Users (Administrators, Faculty, etc.):**
  - **Processor:** Dual-core processor or better
  - **RAM:** 4 GB or more
  - **Hard Drive:** 500 GB or more
  - **Display:** Any standard monitor with 1024x768 resolution or higher

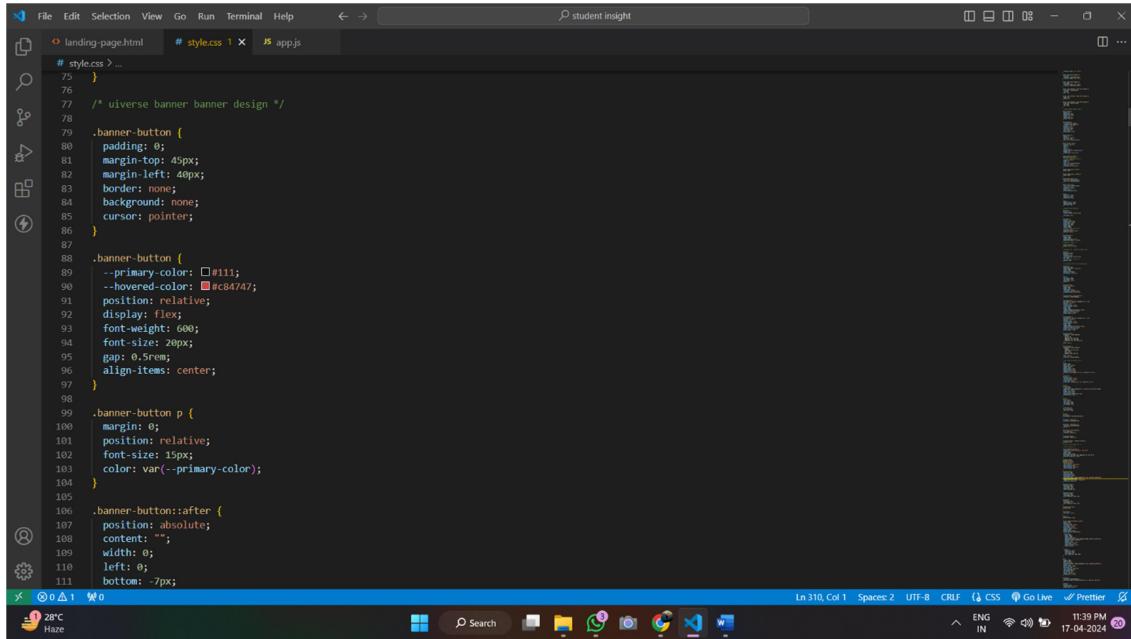
### 6.2 Software Requirements

- **Server Software:**
  - **Operating System:** Ubuntu Linux Server
  - **Database Management System:** SQLite
  - **Web Server:** Apache HTTP Server
  - **Middleware:** Python Flask Framework
  - **Backup Software:** To manage regular backup routines

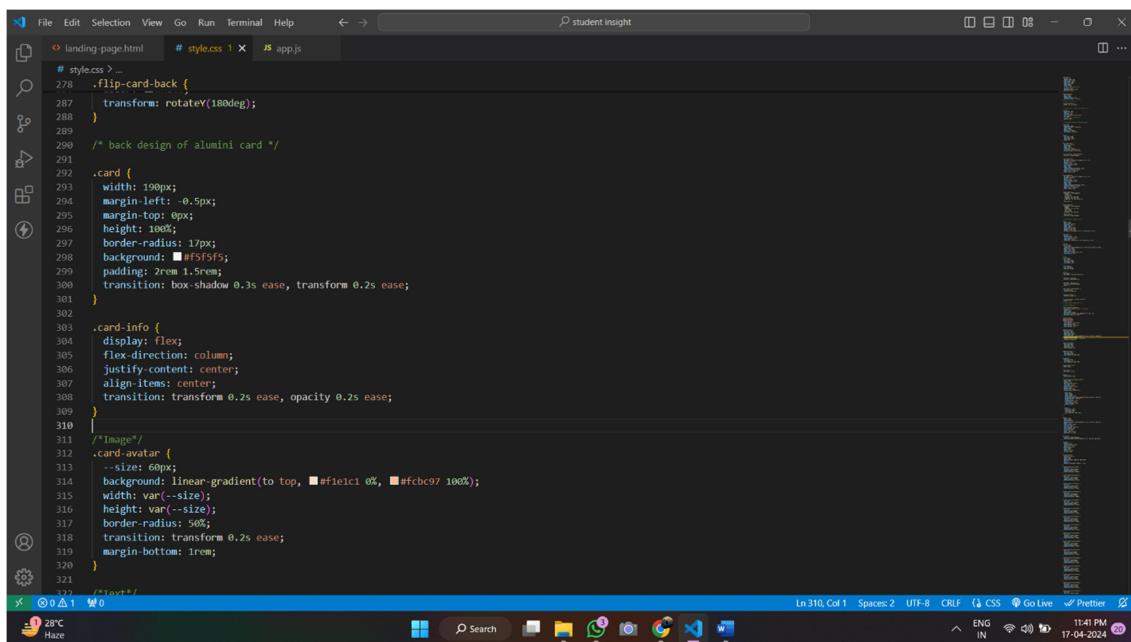
- **Client Software:**

- **Operating System:** Windows 10/11, macOS, or Linux
- **Web Browser:** Google Chrome, Mozilla Firefox, Microsoft Edge, or Safari in their latest versions
- **PDF Reader:** For viewing documents
- **Office Suite:** Microsoft Office, or similar for document handling

## 7. PROJECT SNAP SHOTS



```
# style.css > ...
75 }
76 /* universe banner banner design */
77 .banner-button {
78   padding: 0;
79   margin-top: 45px;
80   margin-left: 40px;
81   border: none;
82   background: none;
83   cursor: pointer;
84 }
85 .banner-button {
86   --primary-color: #111;
87   --hovered-color: #c84747;
88   position: relative;
89   display: flex;
90   font-weight: 600;
91   font-size: 15px;
92   gap: 0.5rem;
93   align-items: center;
94 }
95 .banner-button p {
96   margin: 0;
97   position: relative;
98   font-size: 15px;
99   color: var(--primary-color);
100 }
101 .banner-button::after {
102   position: absolute;
103   content: "";
104   width: 0;
105   left: 0;
106   bottom: -7px;
107 }
```



```
# style.css > ...
278 .flip-card-back {
279   transform: rotate(180deg);
280 }
281 /* back design of alumini card */
282 .card {
283   width: 190px;
284   margin-left: -0.5px;
285   margin-top: 0px;
286   height: 100%;
287   border-radius: 1px;
288   background: #1f5f5f;
289   padding: 2rem 1.5rem;
290   transition: box-shadow 0.3s ease, transform 0.2s ease;
291 }
292 .card-info {
293   display: flex;
294   flex-direction: column;
295   justify-content: center;
296   align-items: center;
297   transition: transform 0.2s ease, opacity 0.2s ease;
298 }
299 .card-avatar {
300   --size: 60px;
301   background: linear-gradient(to top, #fe1e1e 0%, #fcfc97 100%);
302   width: var(--size);
303   height: var(--size);
304   border-radius: 50%;
305   transition: transform 0.2s ease;
306   margin-bottom: 1rem;
307 }
```

GUEST

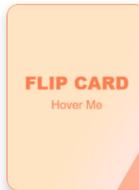
- Delloite
- TCS**
- HCL

Lorem ipsum dolor sit amet consectetur, adipisciing elit. Itaque quia adipisci dicta velit, illum eos amet assumenda nisi blanditiis? Delectus deleniti nesciunt quis, tempora mollitia voluptatem dolor harum adipisci asperiores! Tempora deleniti, illo, velit itaque odio repellendus eius nihil saepe est deserunt

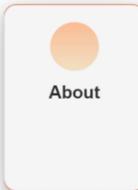




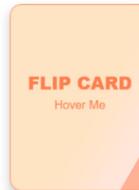
**FLIP CARD**  
Hover Me



**FLIP CARD**  
Hover Me



About



**FLIP CARD**  
Hover Me

28°C Haze

Search

ENG IN 11:47 PM 17-04-2024

GUEST

### TOP 10 STUDENT



Harshit Mishra  
CGPA-9.67

Have Something in Mind ,  
Write Something SMART

Email

Enter Text

28°C Haze

Search

ENG IN 11:46 PM 17-04-2024

Screenshot of a web browser showing a landing page for "Dr. Virendra Swarup Institute of Professional Studies".

The header features a large orange banner with the text "STUDENT INSIGHT , Result in a Click" and "Everything your college does , we digitil". A "SignUp →" button is visible on the left side of the banner.

The main content area includes a "What's New" section with tabs for "All News", "Placement", and "Course". Below this is a "Latest News" section containing three bullet points:

- In case of Ragging related concern feel free to immediately connect us on - vsef.antiragging@gmail.com
- VSICS Attained 1st position amongst self financed colleges of Kanpur for the semester examinations as officially declared by AKTU.
- Regarding the Session 2023-24 revised examination schedule of LLB 5th semester and BALLB 5th, 7th and 9th semester examination.

To the right of the news section is a large group photo of students in blue uniforms. The top right corner of the page displays the institution's name and degree program: "Dr. Virendra Swarup Institute of Professional Studies", "MBA [ 2017-2019 ]", and "Sec - B".

The bottom of the screen shows a Windows taskbar with various icons and system status information.

Screenshot of a web browser showing a landing page for "Dr. Virendra Swarup Institute of Professional Studies".

The header features a purple banner with the text "GUEST". Below it is a navigation menu with links: "Home", "About", "Dropdown ▾", and "Result".

The main content area includes a "What's New" section with tabs for "All News", "Placement", and "Course". Below this is a "Companies Visited" section titled "Componies Visited". It lists several companies: IGT, Accenture, Deloitte, TCS, and HCL. To the right of this list is a detailed description of IGT:

**IGT**  
Lorem ipsum dolor sit amet consectetur adipisicing elit. Sunt amet, ipsam excepturi tenetur iure autem cum quo asperiores dolore numquam facere reiciendis laudantium accusamus recusandae perspicatis ratione eveniet maxime harum. Consectetur iste fugit debitis at possimus, explicabo officia temporibus cum officiis accusamus error corporis est ea odit delectus ipsa vitae a quaerat iure aut aperiam repellat amet.

To the right of the text is a large group photo of students in blue uniforms. The top right corner of the page displays the institution's name and degree program: "Dr. Virendra Swarup Institute of Professional Studies", "MBA [ 2017-2019 ]", and "Sec - B".

The bottom of the screen shows a Windows taskbar with various icons and system status information.

```
194 }
195 /* container div , inside all element lies */
196 .container {
197   margin-top: 50px;
198   display: flex;
199   flex-wrap: wrap;
200   justify-content: space-around;
201   gap: 100px;
202   /* border: 1px solid red; */
203   padding: 20px;
204 }
205 /*
206 top alumini placed from college design */
207 .flip-card {
208   margin-top: 30px;
209   background-color: transparent;
210   width: 190px;
211   height: 254px;
212   perspective: 1000px;
213   font-family: sans-serif;
214 }
215 .title {
216   font-size: 1.5em;
217   font-weight: 900;
218   text-align: center;
219   margin: 0;
220 }
221 .flip-card-inner {
222   position: relative;
223   width: 100%;
224   height: 100%;
225   -webkit-align-items: center;
226   align-items: center;
227   -webkit-backface-visibility: hidden;
228   backface-visibility: hidden;
229   border: 1px solid #coral;
230   border-radius: 1rem;
231 }
232 .flip-card-front {
233   width: 100%;
234   height: 100%;
235   -webkit-backface-visibility: hidden;
236   backface-visibility: hidden;
237   border: 1px solid #coral;
238   border-radius: 1rem;
239 }
240 .flip-card-back {
241   box-shadow: 0 8px 14px 0 #rgba(0, 0, 0, 0.2);
242   position: absolute;
243   display: flex;
244   flex-direction: column;
245   justify-content: center;
246   width: 100%;
247   height: 100%;
248   -webkit-backface-visibility: hidden;
249   backface-visibility: hidden;
250   border: 1px solid #coral;
251   border-radius: 1rem;
252 }
253 .flip-card-front {
254   background: linear-gradient(
255     120deg,
256     #bisque 60%,
257     #rgb(255, 231, 222) 88%,
258     #rgb(255, 211, 195) 40%,
259     #rgba(255, 127, 80, 0.603) 48%
260   );
261   color: #coral;
262 }
263 .flip-card-back {
264   background: linear-gradient(
265     120deg,
```

```
266     #bisque 60%,
267     #rgb(255, 231, 222) 88%,
268     #rgb(255, 211, 195) 40%,
269     #rgba(255, 127, 80, 0.603) 48%
270   );
271   color: #coral;
272 }
273 .flip-card-back {
274   background: linear-gradient(
275     120deg,
```

A screenshot of a code editor window titled "student insight". The main pane displays the following CSS code:

```
154 .typed1 {
155   margin: 50px 0 0 20px;
156   padding-bottom: 20px;
157   font-size: 25px;
158 }
159 }

160 /* design of news section */
161 .news-flex {
162   display: flex;
163   justify-content: space-around;
164   flex-wrap: wrap;
165 }

166 .news-flex2 {
167   display: flex;
168   padding-right: 10px;
169   align-items: center;
170   margin-left: 10px;
171   margin-top: 10px;
172   width: 500px;
173   height: 400px;
174   /* border: 2px solid red; */
175   overflow: hidden;
176   background-size: contain;
177   background-repeat: no-repeat;
178 }

179 /* design of crousel */
180 
```

The status bar at the bottom shows "Ln 310, Col 1" and "11:40 PM 17-04-2024".

A screenshot of a code editor window titled "student insight". The main pane displays the following CSS code:

```
118 .banner-button p::before {
119   position: absolute;
120   /* box-sizing: border-box; */
121   content: "Sign up";
122   width: 0;
123   inset: 0;
124   color: var(--hovered-color);
125   overflow: hidden;
126   transition: 0.3s ease-out;
127 }

128 .banner-button:hover::after {
129   width: 100%;
130 }

131 .banner-button:hover p::before {
132   width: 100%;
133 }

134 .banner-button:hover svg {
135   transform: translateX(4px);
136   color: var(--hovered-color);
137 }

138 .banner-button svg {
139   color: var(--primary-color);
140   transition: 0.2s;
141   position: relative;
142   width: 15px;
143   transition-delay: 0.2s;
144 }

145 .typed {
146   margin-left: 20px;
147   font-size: 18px;
148   padding-top: 40px;
149 }

150 
```

The status bar at the bottom shows "Ln 310, Col 1" and "11:40 PM 17-04-2024".

```
about.html # style.css app.js
about.html > html > body > div#main-id
2   <html lang="en">
16    <body>
17      <div id="main-id">
354       <div class="foot">
355         <div class="foot1">
373           <label for="input" class="label">Enter Text</label>
374           <div class="underline"></div>
375         </div>
376       </div>
377     </div>
378   </div>
379 </div>
380 </div>
381 </div>
382
383
384   <!-- result declared animation -->
385 <div class="container-result-off">
386   <div class="results-primary-container">
387     <div class="confetti">
388       <div class="confetti-piece"></div>
389       <div class="confetti-piece"></div>
390       <div class="confetti-piece"></div>
391       <div class="confetti-piece"></div>
392       <div class="confetti-piece"></div>
393       <div class="confetti-piece"></div>
394       <div class="confetti-piece"></div>
395       <div class="confetti-piece"></div>
396       <div class="confetti-piece"></div>
397       <div class="confetti-piece"></div>
398       <div class="confetti-piece"></div>
399       <div class="confetti-piece"></div>
400       <div class="confetti-piece"></div>
401       <div class="confetti-piece"></div>
402       <div class="confetti-piece"></div>
403       <div class="confetti-piece"></div>
404     </div>
Ln 287, Col 1 Spaces: 2 UTF-8 CR/LF ( ↴ HTML ⚡ Go Live ⚡ Prettier ⚡
28°C Haze ENG IN 11:36 PM 17-04-2024
```

```
about.html # style.css app.js
about.html > html > body > div#main-id
2   <html lang="en">
16    <body>
17      <div id="main-id">
304       <div class="container">
343
344       <!-- design of testimonials -->
345       <div class="container">
346
347
348       </div>
349
350       <!-- design of footer -->
351
352
353
354       <div class="foot">
355         <div class="foot1">
356           <div class="footv1">
357             s
358           </div>
359
360           <div class="footv2">
361             <span class="text-value">Have Something in Mind ,</span>
362             <span class="text-value">Write Something SMART</span>
363
364           <div class="input-box">
365             <label class="input-label">Email:</label>
366             <input placeholder="user@mail.com" class="input" name="email" type="email">
367             <span class="input-helper">Enter a valid email</span>
368
369           </div>
370
371           <div class="input-container">
372             <input type="text" id="input" required="">
373             <label for="input" class="label">Enter Text</label>
374             <div class="underline"></div>
375           </div>
Ln 287, Col 1 Spaces: 2 UTF-8 CR/LF ( ↴ HTML ⚡ Go Live ⚡ Prettier ⚡
28°C Haze ENG IN 11:36 PM 17-04-2024
```

```
index.html
1 <!DOCTYPE html>
2 <html lang="en">
3   <head>
4     <meta charset="UTF-8" />
5     <meta name="viewport" content="width=device-width, initial-scale=1.0" />
6     <title>Student Insight</title>
7     <link href="style.css" rel="stylesheet" />
8   </head>
9   <body>
10    <div id="main-id">
11      <div class="news-flex">
12        <div class="news-f&lt;&gt;1">
13          <div class="scrollpy-example bg-body-tertiary p-3 rounded-2">
14            <div class="row">
15              <div class="col-4">
16                <p>Top 10 Students</p>
17                <table border="1">
18                  <thead>
19                    <tr>
20                      <th>Rank</th>
21                      <th>Name</th>
22                      <th>CGPA</th>
23                    </tr>
24                  </thead>
25                  <tbody>
26                    <tr>
27                      <td>1</td>
28                      <td>John Doe</td>
29                      <td>3.85</td>
30                    </tr>
31                    <tr>
32                      <td>2</td>
33                      <td>Jane Smith</td>
34                      <td>3.75</td>
35                    </tr>
36                    <tr>
37                      <td>3</td>
38                      <td>Mike Johnson</td>
39                      <td>3.65</td>
40                    </tr>
41                    <tr>
42                      <td>4</td>
43                      <td>Sarah Lee</td>
44                      <td>3.55</td>
45                    </tr>
46                    <tr>
47                      <td>5</td>
48                      <td>David Wilson</td>
49                      <td>3.45</td>
50                    </tr>
51                    <tr>
52                      <td>6</td>
53                      <td>Emily Davis</td>
54                      <td>3.35</td>
55                    </tr>
56                    <tr>
57                      <td>7</td>
58                      <td>Aaron Green</td>
59                      <td>3.25</td>
60                    </tr>
61                    <tr>
62                      <td>8</td>
63                      <td>Olivia Brown</td>
64                      <td>3.15</td>
65                    </tr>
66                    <tr>
67                      <td>9</td>
68                      <td>Jordan White</td>
69                      <td>3.05</td>
70                    </tr>
71                    <tr>
72                      <td>10</td>
73                      <td>Liam Clark</td>
74                      <td>2.95</td>
75                    </tr>
76                  </tbody>
77                </table>
78              </div>
79            </div>
80          </div>
81        </div>
82      </div>
83    </div>
84  </body>
85 </html>
```

index.css

```
body {
  font-family: Arial, sans-serif;
  margin: 0;
  padding: 0;
}

#main-id {
  width: 1000px;
  margin: auto;
}

.news-f&lt;&gt;1 {
  background-color: #f2f2f2;
  padding: 10px;
  border-radius: 5px;
}

.scrollpy-example {
  position: relative;
  height: 300px;
  overflow: hidden;
}

.scrollpy-example::before {
  content: "SCROLL ME";
  position: absolute;
  top: 50px;
  left: 50px;
  font-size: 20px;
  color: #ccc;
  transform: rotate(-45deg);
}

.scrollpy-example::after {
  content: "TOP 10 STUDENTS";
  position: absolute;
  bottom: 10px;
  left: 50px;
  font-size: 14px;
  color: #ccc;
  transform: rotate(45deg);
}
```

```
index.html
1 <!DOCTYPE html>
2 <html lang="en">
3   <head>
4     <meta charset="UTF-8" />
5     <meta name="viewport" content="width=device-width, initial-scale=1.0" />
6     <title>Student Insight</title>
7     <link href="style.css" rel="stylesheet" />
8   </head>
9   <body>
10    <div id="main-id">
11      <div class="news-flex">
12        <div class="news-f&lt;&gt;1">
13          <div class="scrollpy-example bg-body-tertiary p-3 rounded-2">
14            <div class="row">
15              <div class="col-4">
16                <p>Top 10 Students</p>
17                <table border="1">
18                  <thead>
19                    <tr>
20                      <th>Rank</th>
21                      <th>Name</th>
22                      <th>CGPA</th>
23                    </tr>
24                  </thead>
25                  <tbody>
26                    <tr>
27                      <td>1</td>
28                      <td>John Doe</td>
29                      <td>3.85</td>
30                    </tr>
31                    <tr>
32                      <td>2</td>
33                      <td>Jane Smith</td>
34                      <td>3.75</td>
35                    </tr>
36                    <tr>
37                      <td>3</td>
38                      <td>Mike Johnson</td>
39                      <td>3.65</td>
40                    </tr>
41                    <tr>
42                      <td>4</td>
43                      <td>Sarah Lee</td>
44                      <td>3.55</td>
45                    </tr>
46                    <tr>
47                      <td>5</td>
48                      <td>David Wilson</td>
49                      <td>3.45</td>
50                    </tr>
51                    <tr>
52                      <td>6</td>
53                      <td>Emily Davis</td>
54                      <td>3.35</td>
55                    </tr>
56                    <tr>
57                      <td>7</td>
58                      <td>Aaron Green</td>
59                      <td>3.25</td>
60                    </tr>
61                    <tr>
62                      <td>8</td>
63                      <td>Olivia Brown</td>
64                      <td>3.15</td>
65                    </tr>
66                    <tr>
67                      <td>9</td>
68                      <td>Jordan White</td>
69                      <td>3.05</td>
70                    </tr>
71                    <tr>
72                      <td>10</td>
73                      <td>Liam Clark</td>
74                      <td>2.95</td>
75                    </tr>
76                  </tbody>
77                </table>
78              </div>
79            </div>
80          </div>
81        </div>
82      </div>
83    </div>
84  </body>
85 </html>
```

index.css

```
body {
  font-family: Arial, sans-serif;
  margin: 0;
  padding: 0;
}

#main-id {
  width: 1000px;
  margin: auto;
}

.news-f&lt;&gt;1 {
  background-color: #f2f2f2;
  padding: 10px;
  border-radius: 5px;
}

.scrollpy-example {
  position: relative;
  height: 300px;
  overflow: hidden;
}

.scrollpy-example::before {
  content: "SCROLL ME";
  position: absolute;
  top: 50px;
  left: 50px;
  font-size: 20px;
  color: #ccc;
  transform: rotate(-45deg);
}

.scrollpy-example::after {
  content: "TOP 10 STUDENTS";
  position: absolute;
  bottom: 10px;
  left: 50px;
  font-size: 14px;
  color: #ccc;
  transform: rotate(45deg);
}

/* DESIGN OF TOP 3 STUDENT */
.container-t {
  display: flex;
  justify-content: space-around;
  align-items: center;
  gap: 20px;
}

.container-t div {
  text-align: center;
}

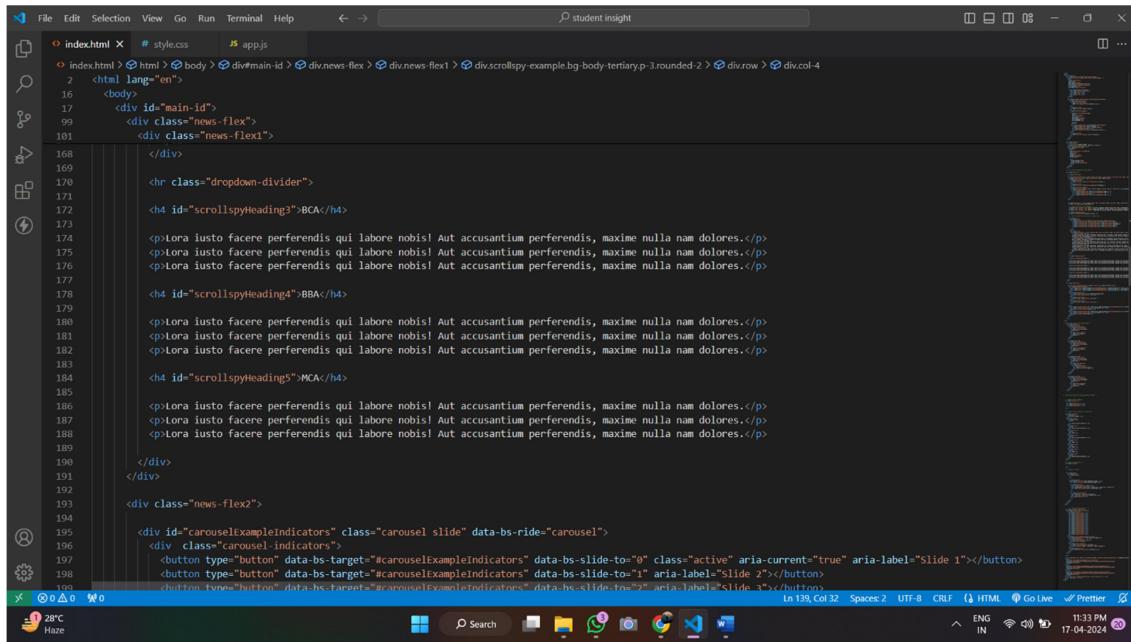
.container-t div h3 {
  font-size: 1.5em;
  margin-bottom: 10px;
}

.container-t div p {
  font-size: 0.9em;
}

/* DESIGN OF TOP 10 STUDENT OF CURRENT SEM */
.container {
  display: flex;
  justify-content: space-around;
  align-items: center;
  gap: 20px;
}

.stats {
  text-align: center;
}

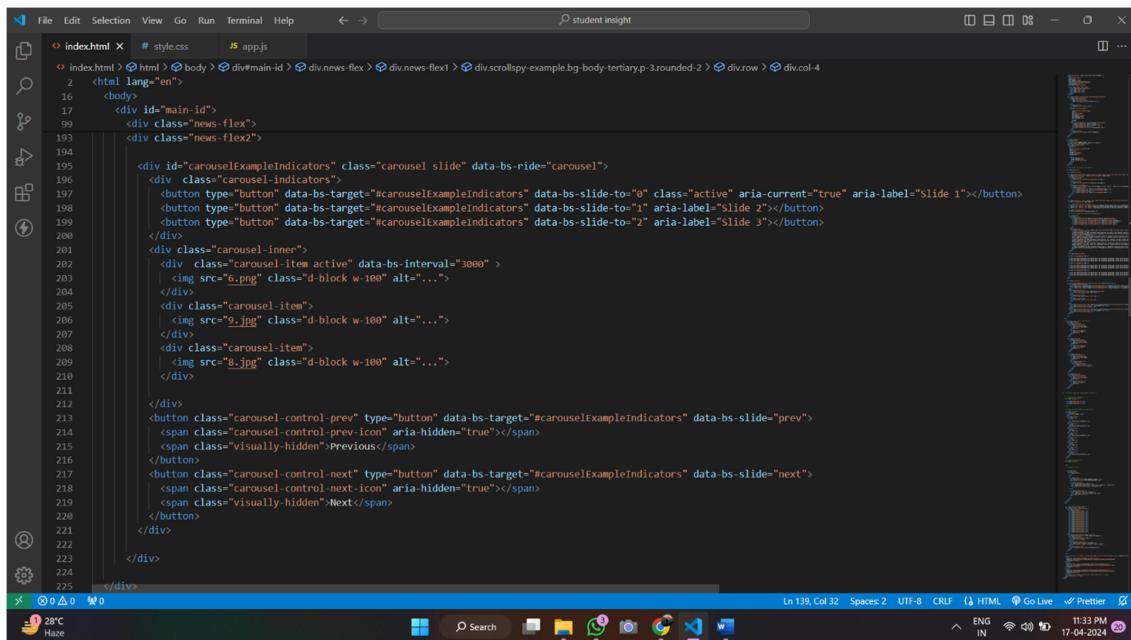
.stats p {
  font-size: 0.9em;
}
```



```
File Edit Selection View Go Run Terminal Help student insight
index.html # style.css app.js
index.html > html > body > div#main-id > div.news-flex > div.news-flex > div.scrollspy-example.bg-body-tertiary.p-3.rounded-2 > div.row > div.col-4
2 <html lang="en">
3   <body>
4     <div id="main-id">
5       <div class="news-flex">
6         <div class="news-flex1">
7           ...
8           ...
9           ...
10          ...
11        </div>
12        <hr class="dropdown-divider">
13        <h4 id="scrollspyHeading3">BCA</h4>
14        <p>Iusto facere perferendis qui labore nobis! Aut accusantium perferendis, maxime nulla nam dolores.</p>
15        <p>Iusto facere perferendis qui labore nobis! Aut accusantium perferendis, maxime nulla nam dolores.</p>
16        <p>Iusto facere perferendis qui labore nobis! Aut accusantium perferendis, maxime nulla nam dolores.</p>
17        ...
18        ...
19        ...
20        ...
21      </div>
22      <div class="news-flex2">
23        ...
24        ...
25        ...
26        ...
27        ...
28        ...
29        ...
30        ...
31      </div>
32    </div>
33    <div id="carouselExampleIndicators" class="carousel slide" data-bs-ride="carousel">
34      <div class="carousel-indicators">
35        <button type="button" data-bs-target="#carouselExampleIndicators" data-bs-slide-to="0" class="active" aria-current="true" aria-label="Slide 1"></button>
36        <button type="button" data-bs-target="#carouselExampleIndicators" data-bs-slide-to="1" aria-label="Slide 2"></button>
37        <button type="button" data-bs-target="#carouselExampleIndicators" data-bs-slide-to="2" aria-label="Slide 3"></button>
38      </div>
39      <div class="carousel-inner">
40        ...
41        ...
42        ...
43        ...
44      </div>
45      <button class="carousel-control-prev" type="button" data-bs-target="#carouselExampleIndicators" data-bs-slide="prev">
46        ...
47      </button>
48      <button class="carousel-control-next" type="button" data-bs-target="#carouselExampleIndicators" data-bs-slide="next">
49        ...
50      </button>
51    </div>
52  </div>
53</body>
54</html>
```

index.html Ln 139, Col 32 Spaces: 2 UTF-8 CR/LF ⓘ HTML ⓘ Go Live ⓘ Prettier ⓘ

28°C Haze ENG IN 11:33 PM 17-04-2024



```
File Edit Selection View Go Run Terminal Help student insight
index.html # style.css app.js
index.html > html > body > div#main-id > div.news-flex > div.news-flex > div.scrollspy-example.bg-body-tertiary.p-3.rounded-2 > div.row > div.col-4
2 <html lang="en">
3   <body>
4     <div id="main-id">
5       <div class="news-flex">
6         <div class="news-flex1">
7           ...
8           ...
9           ...
10          ...
11        </div>
12        <hr class="dropdown-divider">
13        <h4 id="scrollspyHeading3">BCA</h4>
14        <p>Iusto facere perferendis qui labore nobis! Aut accusantium perferendis, maxime nulla nam dolores.</p>
15        <p>Iusto facere perferendis qui labore nobis! Aut accusantium perferendis, maxime nulla nam dolores.</p>
16        <p>Iusto facere perferendis qui labore nobis! Aut accusantium perferendis, maxime nulla nam dolores.</p>
17        ...
18        ...
19        ...
20        ...
21      </div>
22      <div class="news-flex2">
23        ...
24        ...
25        ...
26        ...
27        ...
28        ...
29        ...
30        ...
31      </div>
32    </div>
33    <div id="carouselExampleIndicators" class="carousel slide" data-bs-ride="carousel">
34      <div class="carousel-indicators">
35        <button type="button" data-bs-target="#carouselExampleIndicators" data-bs-slide-to="0" class="active" aria-current="true" aria-label="Slide 1"></button>
36        <button type="button" data-bs-target="#carouselExampleIndicators" data-bs-slide-to="1" aria-label="Slide 2"></button>
37        <button type="button" data-bs-target="#carouselExampleIndicators" data-bs-slide-to="2" aria-label="Slide 3"></button>
38      </div>
39      <div class="carousel-inner">
40        ...
41        ...
42        ...
43        ...
44      </div>
45      <button class="carousel-control-prev" type="button" data-bs-target="#carouselExampleIndicators" data-bs-slide="prev">
46        ...
47      </button>
48      <button class="carousel-control-next" type="button" data-bs-target="#carouselExampleIndicators" data-bs-slide="next">
49        ...
50      </button>
51    </div>
52  </div>
53</body>
54</html>
```

index.html Ln 139, Col 32 Spaces: 2 UTF-8 CR/LF ⓘ HTML ⓘ Go Live ⓘ Prettier ⓘ

28°C Haze ENG IN 11:33 PM 17-04-2024

A screenshot of a code editor window titled "landing page.html". The file contains HTML, CSS, and JavaScript code. The CSS includes a media query for "student insight". The JS file contains logic for scrollspy, specifically targeting elements with IDs like "list-item-1" through "list-item-5". The code uses href attributes to point to sections of the page. A sidebar on the right shows a tree view of the project structure.

```
File Edit Selection View Go Run Terminal Help student insight
landing page.html # style.css JS app.js
landing page.html > html > body > div#main-id > div.banner > button.banner-button > svgh-h-w-6
2 <html lang="en">
  <body>
    <div id="main-id">
      <div class="news-flex">
        <div class="news-flex1">
          ...
        </div>
      </div>
    </div>
  </body>
</html>
<hr class="dropdown-divider">
<h4 id="scrollspyHeading3">BCA</h4>
<p>Iusta facere perferendis qui labore nobis! Aut accusantium perferendis, maxime nulla nam dolores.</p>
<p>Iusta facere perferendis qui labore nobis! Aut accusantium perferendis, maxime nulla nam dolores.</p>
<p>Iusta facere perferendis qui labore nobis! Aut accusantium perferendis, maxime nulla nam dolores.</p>
<h4 id="scrollspyHeading4">BBA</h4>
<p>Iusta facere perferendis qui labore nobis! Aut accusantium perferendis, maxime nulla nam dolores.</p>
<p>Iusta facere perferendis qui labore nobis! Aut accusantium perferendis, maxime nulla nam dolores.</p>
<p>Iusta facere perferendis qui labore nobis! Aut accusantium perferendis, maxime nulla nam dolores.</p>
<h4 id="scrollspyHeading5">MCA</h4>
<p>Iusta facere perferendis qui labore nobis! Aut accusantium perferendis, maxime nulla nam dolores.</p>
<p>Iusta facere perferendis qui labore nobis! Aut accusantium perferendis, maxime nulla nam dolores.</p>
<p>Iusta facere perferendis qui labore nobis! Aut accusantium perferendis, maxime nulla nam dolores.</p>
</div>
</div>
Ln 82, Col 28 Spaces 2 UTF-8 CRLF ⓘ HTML ⓘ Go Live ⓘ Prettier ⓘ
ENG IN 11:28 PM 17-04-2024
```

A screenshot of a code editor window titled "landing page.html". The file contains HTML, CSS, and JavaScript code. The CSS includes a media query for "student insight". The JS file contains logic for scrollspy, specifically targeting elements with IDs like "list-item-1" through "list-item-5". The code uses href attributes to point to sections of the page. A new section of code has been added, starting at line 131, which includes a cursor style for a link and a descriptive comment about the session schedule. The code editor interface is similar to the one in the first screenshot.

```
File Edit Selection View Go Run Terminal Help student insight
landing page.html # style.css JS app.js
landing page.html > html > body > div#main-id > div.banner > button.banner-button > svgh-h-w-6
2 <html lang="en">
  <body>
    <div id="main-id">
      <div class="news-flex">
        <div class="news-flex1">
          <p style="cursor: pointer; color: blue;"> Regarding the Session 2023-24 revised examination schedule of LLB 5th semester and BALLB 5th, 7th and 9th semester <a href="#">click here</a></p>
        <hr class="dropdown-divider">
        <h4 id="scrollspyHeading2">Companies Visited </h4>
        <!-- internal design of each section of heading news -->
        <div class="row">
          <div class="col-4">
            <div style="border: 1px solid black" id="list-example" class="list-group">
              <a class="list-group-item list-group-item-action" href="#list-item-1">IGT</a>
              <a class="list-group-item list-group-item-action" href="#list-item-2">Accenture</a>
              <a class="list-group-item list-group-item-action" href="#list-item-3">Deloitte</a>
              <a class="list-group-item list-group-item-action" href="#list-item-4">TCS</a>
              <a class="list-group-item list-group-item-action" href="#list-item-5">HCL</a>
            </div>
          </div>
        </div>
        <div class="col-8">
          <div style="overflow-y: scroll; padding-right: 10px; max-height: 300px; max-width: 360px; margin-left: 5px; " data-bs-spy="scroll" data-bs-target="#list-example">
            <h6 id="list-item-1">IGT</h6>
            <p>Iusta facere perferendis qui labore nobis! Aut accusantium perferendis, maxime nulla nam dolores. Tempora delectus, illa, velit itaque odio repellendus eius nihil saepe est deserunt nam expedita incidunt ea, aliquid blanditiis nesciunt ad eligendi soli. Consectetur iste fugit debitis at possumus, explicabo officia temporibus cum officiis accusamus error corporis est ea edit delectus ipsa vita a querat i. Saepe assumenda veritatis quisquam reiciendis ea quae minus vero ut culpa, qui, porruto ab corporis eius quod expedita velit omnis. Obcaecati, aliquam, sapiente, molestiae, a excepturi obcaecati unde hic recusandae blanditiis nemo officia velit ab distinctio querat nihil itaque. Nam necessitatibus Alias, sapiente, molestiae, a excepturi obcaecati unde hic recusandae blanditiis nemo officia velit ab distinctio querat nihil itaque. Nam necessitatibus <h6 id="list-item-3">Deloitte</h6>
            <p>Iusta facere perferendis qui labore nobis! Aut accusantium perferendis, maxime nulla nam dolores. Tempora delectus, illa, velit itaque odio repellendus eius nihil saepe est deserunt nam expedita incidunt ea, aliquid blanditiis nesciunt ad eligendi soli. Consectetur iste fugit debitis at possumus, explicabo officia temporibus cum officiis accusamus error corporis est ea edit delectus ipsa vita a querat i. Saepe assumenda veritatis quisquam reiciendis ea quae minus vero ut culpa, qui, porruto ab corporis eius quod expedita velit omnis. Obcaecati, aliquam, sapiente, molestiae, a excepturi obcaecati unde hic recusandae blanditiis nemo officia velit ab distinctio querat nihil itaque. Nam necessitatibus Alias, sapiente, molestiae, a excepturi obcaecati unde hic recusandae blanditiis nemo officia velit ab distinctio querat nihil itaque. Nam necessitatibus <h6 id="list-item-4">TCS</h6>
            <p>Iusta facere perferendis qui labore nobis! Aut accusantium perferendis, maxime nulla nam dolores. Tempora delectus, illa, velit itaque odio repellendus eius nihil saepe est deserunt nam expedita incidunt ea, aliquid blanditiis nesciunt ad eligendi soli. Consectetur iste fugit debitis at possumus, explicabo officia temporibus cum officiis accusamus error corporis est ea edit delectus ipsa vita a querat i. Saepe assumenda veritatis quisquam reiciendis ea quae minus vero ut culpa, qui, porruto ab corporis eius quod expedita velit omnis. Obcaecati, aliquam, sapiente, molestiae, a excepturi obcaecati unde hic recusandae blanditiis nemo officia velit ab distinctio querat nihil itaque. Nam necessitatibus Alias, sapiente, molestiae, a excepturi obcaecati unde hic recusandae blanditiis nemo officia velit ab distinctio querat nihil itaque. Nam necessitatibus <h6 id="list-item-5">HCL</h6>
            <p>Iusta facere perferendis qui labore nobis! Aut accusantium perferendis, maxime nulla nam dolores. Tempora delectus, illa, velit itaque odio repellendus eius nihil saepe est deserunt nam expedita incidunt ea, aliquid blanditiis nesciunt ad eligendi soli. Consectetur iste fugit debitis at possumus, explicabo officia temporibus cum officiis accusamus error corporis est ea edit delectus ipsa vita a querat i. Saepe assumenda veritatis quisquam reiciendis ea quae minus vero ut culpa, qui, porruto ab corporis eius quod expedita velit omnis. Obcaecati, aliquam, sapiente, molestiae, a excepturi obcaecati unde hic recusandae blanditiis nemo officia velit ab distinctio querat nihil itaque. Nam necessitatibus Alias, sapiente, molestiae, a excepturi obcaecati unde hic recusandae blanditiis nemo officia velit ab distinctio querat nihil itaque. Nam necessitatibus </div>
        </div>
      </div>
    </div>
  </body>
</html>
Ln 62, Col 28 Spaces 2 UTF-8 CRLF ⓘ HTML ⓘ Go Live ⓘ Prettier ⓘ
ENG IN 11:31 PM 17-04-2024
```

A screenshot of a code editor window titled "student insight". The main pane displays the file "landing page.html". The code includes a navigation bar with a dropdown menu. The dropdown menu has items for "BCA", "BBA", "MCA", and "Latest News". The "Latest News" item is highlighted with a red border. The code uses Bootstrap classes like "dropdown", "dropdown-item", and "dropdown-toggle". The status bar at the bottom shows "Ln 82, Col 28" and "11:17 PM 17-04-2024".

```
<!-- news section heading only with design -->
<div class="news-flex">
  <div class="news-flex1">
    <nav style="border-bottom-style: dashed; margin-top: 50px; justify-content: flex-start; gap: 140px;" id="navbar-example2" class="navbar bg-body-tertiary px-3 mb-3">
      <a style="margin-left: 5px;" class="navbar-brand" href="#">What's New</a>
      <ul class="nav nav-pills">
        <li class="nav-item">
          <a class="nav-link" href="#scrollspyHeading1">All News</a>
        </li>
        <li class="nav-item">
          <a class="nav-link" href="#scrollspyHeading2">Placement</a>
        </li>
        <li class="nav-item dropdown">
          <a class="nav-link dropdown-toggle" data-bs-toggle="dropdown" href="#" role="button" aria-expanded="false">Course</a>
          <ul class="dropdown-menu">
            <li><a class="dropdown-item" href="#scrollspyHeading3">BCA</a></li>
            <li><a class="dropdown-item" href="#scrollspyHeading4">BBA</a></li>
            <li><hr class="dropdown-divider"></li>
            <li><a class="dropdown-item" href="#scrollspyHeading5">MCA</a></li>
          </ul>
        </li>
      </ul>
    </nav>
    <div style="overflow-y: scroll; padding-right: 10px; max-height: 300px; max-width: 500px; margin-left: 5px;" data-bs-spy="scroll" data-bs-target="#navbar-example2">
      <h4 id="scrollspyHeading1">Latest News</h4>
```

A screenshot of a code editor window titled "student insight". The main pane displays the file "landing page.html". The code includes a banner element with a button and a SVG icon. The button has a "typedi" class and a "STUDENT INSIGHT" label. The SVG icon is a path element with a specific d attribute. The code uses Bootstrap classes like "banner", "button", and "typedi". The status bar at the bottom shows "Ln 82, Col 28" and "11:17 PM 17-04-2024".

```
<!-- banner elements -->
<div class="banner">
  <!-- universe banner button design -->
  <p class="typedi STUDENT INSIGHT , Result in a Click</p>
  <span class="auto-type typedi"></span>
  <button class="banner-button">
    <p>Signup</p>
    <img alt="Universe banner button design" data-bbox="180 100 250 150" />
    <svg>
      <use href="http://www.w3.org/2000/svg" />
      <path d="M14.517 7m0 0l-7 7m7-7H3" />
    </svg>
  </button>
</div>
<div style="border-bottom-style: dashed; margin-top: 50px; justify-content: flex-start; gap: 140px;" id="navbar-example2" class="navbar bg-body-tertiary px-3 mb-3">
  <a style="margin-left: 5px;" class="navbar-brand" href="#">What's New</a>
```

## **8. SECURITY MECHANISM**

A security mechanism refers to a set of measures, protocols, or technologies implemented to safeguard systems, networks, applications, or data from unauthorized access, misuse, alteration, or destruction. These mechanisms are designed to mitigate risks, protect assets, and ensure the confidentiality, integrity, and availability of information. Security mechanisms encompass a wide range of practices and tools, including encryption, authentication, authorization, access control, monitoring, and incident response, among others. They are essential components of cybersecurity strategies aimed at protecting against various threats and vulnerabilities in digital environments.

### **8.1 HTTPS (SSL/TLS):**

HTTPS (Hypertext Transfer Protocol Secure) ensures secure communication between a user's browser and the website's server by encrypting data exchanged between them. It employs SSL/TLS (Secure Sockets Layer/Transport Layer Security) protocols to establish a secure connection. This encryption prevents eavesdropping and tampering with data transmitted over the network. For example, when a user enters their credit card information on an e-commerce website's checkout page, HTTPS ensures that this sensitive data is securely transmitted to the server, protecting it from interception by malicious actors.

### **8.2 Authentication:**

Authentication verifies the identity of users accessing a website, ensuring that only authorized individuals can access protected resources. Common authentication methods include passwords, biometrics (such as fingerprint or facial recognition), two-factor authentication (2FA), and multi-factor authentication (MFA). For instance, when a user logs into their email account, they typically enter their username/email and password. If the credentials match those stored in the system, the user is granted access to their account.

### **8.3 Authorization:**

Authorization determines what actions authenticated users are permitted to perform within a website or application. It ensures that users have access only to the resources and functionalities appropriate for their roles or permissions. For example, in a web-based project

management tool, project managers may have permission to create, edit, and delete projects, while team members have access only to view project details and update their assigned tasks.

#### **8.4 Input Validation:**

Input validation ensures that data provided by users through input fields or forms is safe and adheres to expected formats, preventing security vulnerabilities such as SQL injection or cross-site scripting (XSS) attacks. Websites validate user input by checking its type, length, format, and range before processing it. For instance, a website might validate user-submitted email addresses to ensure they contain a valid format (e.g., username@example.com) and are not potentially harmful.

#### **8.5 Session Management:**

Session management tracks and manages user sessions to maintain secure interactions between users and the website. It involves generating and validating session tokens, handling session timeouts, and protecting against session hijacking. For example, after a user logs into an online banking website, a unique session token is generated and associated with their session. This token is used to authenticate subsequent requests, ensuring that only the authenticated user can access their account.

#### **8.6 Security Headers:**

Security headers are HTTP response headers that provide additional security protections for websites. They help mitigate various types of attacks, such as XSS, clickjacking, and MIME sniffing. For example, Content Security Policy (CSP) allows websites to define a whitelist of trusted sources for loading resources (scripts, stylesheets, images), reducing the risk of XSS attacks by preventing the execution of malicious scripts injected into the page.

By implementing these security mechanisms effectively, websites can enhance their resilience against a wide range of security threats and protect both their users and sensitive data from exploitation or compromise.

## **9. SCOPE OF FUTURE APPLICATION**

### **9.1 Advanced Analytics and Reporting:**

Implementing data analytics to provide insights into student performance trends, subject-wise performance, and overall academic growth. Advanced reporting can help educators and administrators make data-driven decisions.

- Data Visualization: Implementing tools like charts, graphs, and dashboards can help visualize student performance, attendance trends, and event participation.
- Predictive Analytics: Using machine learning algorithms, predict future academic performance based on current and past data.
- Custom Reports: Allow faculty and administrators to create custom reports based on specific criteria or time periods.

### **9.2 Integration with Learning Management Systems (LMS):**

Integration with popular Learning Management Systems to streamline the process of sharing assignments, quizzes, and course materials. This can enhance the learning experience for students and instructors.

- Seamless Integration: Connect SMS with existing or future LMS platforms to streamline data sharing and automate administrative tasks.
- Course Enrollment: Automate the course enrollment process based on student's academic performance and preferences.
- Assignment and Grading: Sync assignment submissions, grading, and feedback between LMS and SMS.

### **9.3 Mobile Application Support:**

Developing a mobile application to allow students, parents, and faculty to access the system on-the-go. This will increase accessibility and convenience.

- Student Portal: Develop a mobile app for students to access their academic records, upcoming events, and receive notifications
- Faculty Portal: Enable faculty members to mark attendance, enter grades, and communicate with students through a dedicated app.
- Parental Access: Provide parents with a mobile app to monitor their child's academic progress, attendance, and school events.

#### **9.4 Online Examination System and Virtual Classroom:**

Implementing an online examination module where students can take tests and quizzes online. This can automate grading and reduce workload.

- Virtual Classroom Integration: Enable virtual classroom sessions with video conferencing, chat, and collaborative tools.
- Online Examination System: Develop an online examination system with secure proctoring, automated grading, and result processing.

#### **9.5 Feedback and Continuous Improvement:**

Adding features for students to provide feedback on courses, faculty, and overall learning experience. This can help in continuous improvement of academic programs.

- Feedback Mechanism: Incorporate a feedback system for students, faculty, and administrators to provide suggestions for system improvements.
- Agile Development: Adopt agile methodologies for continuous development and regular updates based on feedback and changing requirements.

#### **9.6 Multi-language Support and Localization:**

Adding multi-language support to cater to international students and faculty. This can make the system more inclusive and user-friendly for non-native speakers.

- Global Reach: Implement multi-language support to cater to international students and faculty.

- Localization: Adapt the system to comply with local educational standards, regulations, and cultural preferences.

### **9.7 Parent-Teacher Communication and Notifications:**

Developing a portal for seamless communication between parents and teachers to discuss student progress, attendance, and behavior. This can strengthen the parent-teacher-student relationship.

- Real-Time Alerts: Set up automated notifications for important updates, deadlines, and announcements.
- Communication Channels: Integrate SMS, email, and in-app notifications for effective communication between stakeholders.

### **9.8 Enhanced Security Features:**

Implementing advanced security features such as data encryption, two-factor authentication, and regular security audits to protect sensitive student information.

- Two-Factor Authentication (2FA): Implement 2FA for added security when accessing the system.
- Data Encryption: Ensure data is encrypted both in transit and at rest to protect sensitive information.
- Role-Based Access Control (RBAC): Define user roles and permissions to restrict access to confidential data based on job roles and responsibilities.

### **9.9 Cloud-Based Infrastructure:**

Integrating with cloud storage solutions to ensure scalability, data backup, and disaster recovery. This can provide flexibility and reliability in managing data.

- Scalability: Migrate to a cloud-based infrastructure to easily scale the system based on growing data and user demands.
- Accessibility: Ensure 24/7 accessibility to the system from any device with an internet connection.

- Disaster Recovery: Implement cloud backup and disaster recovery solutions to prevent data loss and ensure business continuity.

## **9.10 AI-Powered Personalized Learning and Chatbots:**

Leveraging artificial intelligence to offer personalized learning paths, content recommendations, and tutoring assistance based on individual student needs and learning styles.

- Automated Assistance: Implement AI-powered chatbots to assist students, faculty, and administrators with queries related to course information, event schedules, and more.
- Personalized Learning: Use AI to provide personalized learning recommendations and resources based on students' learning styles and academic needs.

## **Some Additional Points:**

- **Customizable Dashboards:** Offering customizable dashboards for students, faculty, and administrators to display relevant information and metrics. This can provide a personalized user experience and quick access to important data.
- **Attendance Management System:** Incorporating an automated attendance tracking system using biometrics or RFID to monitor student attendance. This can improve accuracy and reduce manual effort.
- **Financial Management and Fee Collection:** Implementing a module for managing student fees, scholarships, and financial aid. This can automate fee collection and provide transparency in financial transactions.
- **Career Counselling and Placement Assistance:** Integrating career counselling services and job placement assistance by connecting with industry partners. This can help students in career planning and job readiness.
- **Integration with Social Media Platforms:** Integrating with social media platforms to foster a collaborative learning environment and enable easy sharing of resources and information among students and faculty.

## **10. REFERENCES**

### **Websites:**

- <https://www.frontendmentor.io/>
- <https://www.frontendpractice.com/projects>
- <https://flask.palletsprojects.com/>
- <https://www.geeksforgeeks.org/flask-tutorial/>
- <https://www.upwork.com/resources/beginners-guide-back-end-development>
- <https://blog.hubspot.com/website/back-end-developer>
- <https://www.sqlite.org/>
- <https://jinja.palletsprojects.com/en/3.1.x/>
- <https://www.geeksforgeeks.org/dbms/>
- <https://codepen.io/erikterwan/pen/EVzeRP>
- <https://uiverse.io/>
- <https://www.w3schools.com/bootstrap>
- <https://www.blackbox.ai/>
- <https://tailwindcss.com/>
- <https://web.dev/explore/progressive-web-apps>
- <https://bootcamp.uxdesign.cc/>
- <https://www.ffnext.io/blog/python-backend-with-flask-for-beginners>

### **Books:**

- HTML & CSS: Design and Build Web Sites by Jon Duckett
- Responsive Web Design with HTML5 and CSS by Ben Frain
- Clean Code by Robert Cecil Martin
- Flask Web Development by Miguel Grinberg
- Flask Framework Cookbook by Shalabh Aggarwal
- Learning SQL by Alan Beaulieu
- Designing Data-Intensive Applications by Martin Kleppmann
- Designing Interfaces by Jenifer Tidwell

# Curriculum Vitae

## Dev Nathani

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6388253026

[linkedin.com/in/dev-nathani](https://linkedin.com/in/dev-nathani)

### Professional Summary

Responsible and motivated individual ready to apply education in the workplace. Offers excellent technical abilities with software and applications, ability to handle challenging work, and excellent time management skills. Seeking entry-level opportunities to expand skills while facilitating company growth.

### Proficient Skills

- Python Developer
- Flask BackEndDeveloper
- Skilled in
  - Python
  - C & C++
  - PHP
- Communication and Interpersonal Skills
- Attention to detail

### Educational Details

Qualification	Institute	University	Percentage	Year
BCA (Appearing)	Dr. Virendra Swarup Institute of Computer Studies	CSJMU	84.17%	2024
Class XII	Sanatan Dharm Education Centre	CBSE	96%	2021
Class X	Sanatan Dharm Education Centre	CBSE	94%	2019

### Certifications

- **Python Training**  
Zero to Mastery 2023
- **C and C++ Programming**  
NexGen InfoTech 2021
- **Cyber Security Training**  
Teachnook 2022
- **PHP Training**  
SKDeft 2022

### Achievement

- Winner in VSCISian (An EventMaster of Mathematician)
- RunnerUp in Colloquim 2021 Technical Event
- RunnerUp in International Forum 2022