MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE

Deemed to be University
(Declared under Distinct Category by Ministry of Education, Government of India)
NAAC Accredited with A++ Grade

Project Report

On

Development of Student Management System

A project report submitted in partial fulfilment of the requirement for the degree of

MASTER IN COMPUTER APPLICATION

in

COMPUTER SCIENCE AND ENGINEERING

Submitted By

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Faculty Mentor

Dr. Parul Saxena
(Assistant Professor)

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE
GWALIOR - 474005 (MP) Estd. 1957

JAN-JUNE 2024

SHRIRAM TECHNOLOGIES
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CERTIFICATE

REG NO: _ S/1847630

Date: 24.04.2024

This Certificate is awarded to *Mr. Siddharth Thakur*

In appreciation for his accomplishments of Project in the company

Position Titled: Web Developer

Project Title: Student Management System

At Shriram Technologies Research & Development Center

From : 04 Jan 2024 to 24 Apr 2024

We take this opportunity to wish you a long, Happy and Successful Career.

SHRIRAM TECHNOLOGIES
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Anuradha

Anuradha Rajpoot
SHRIRAM TECHNOLOGIES
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8770200028,9144017323

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CERTIFICATE

This is certified that **Siddharth Thakur (0901CA221064)** has submitted the project report titled **Student Management System** under the mentorship of **Mr. Ankit Parashar** (Project Manager, Shriram Technologies Research & Development) in partial fulfilment of the requirement for the award of degree of **Master in Computer Application** in Computer Science and Engineering from **Madhav Institute of Technology and Science, Gwalior**.

Dr. Parul Saxena
(Assistant Professor)
Computer Science and Engineering

Dr. Manish Dixit
(Professor and Head)
Computer Science and Engineering

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DECLARATION

I hereby declare that the work being presented in this project report, for the partial fulfilment of requirement for the award of the degree of **Master in Computer Application** in Computer Science and Engineering at **Madhav Institute of Technology & Science, Gwalior** is an authenticated and original-record of my work under the mentorship of **Mr. Ankit Parashar,** Project Manager (Full Stack Developer Team, Shriram Technologies Research & Development).

I declare that I have not submitted the matter embodied in this report for the award of any degree or diploma anywhere else.

Siddharth Thakur
0901CA221064
2022-2024
Master in Computer Application
Computer Science and Engineering

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ACKNOWLEDGEMENT

The full semester project has proved to be pivotal to my career. I am thankful to my institute, **Madhav Institute of Technology and Science** to allow me to continue my disciplinary project. I extend my gratitude to the Director of the institute, **Dr. R. K. Pandit** and Dean Academics, **Dr. Manjaree Pandit** for this.

I would sincerely like to thank my department, **Department of Computer Science and Engineering,** for allowing me to explore this project. I humbly thank **Dr. Manish Dixit**, Professor and Head, Department of Computer Science and Engineering, for his continued support during the course of this engagement, which eased the process and formalities involved.

I would like to extend my heartfelt appreciation to **Mr. Ankit Parashar,** Project Manager (Full Stack Developer Team, Shriram technologies research & development) for their exceptional mentorship, guidance, and assistance throughout the project. Their valuable inputs and feedback have helped me enhance my knowledge and skills. Their constant encouragementand support have been instrumental in the successful completion of this project.

I am sincerely thankful to my faculty coordinator. I am grateful to the guidance of **Dr. Parul Saxena,** Assistant Professor, Computer Science and Engineering, for her continued support and guidance throughout the project. I am also very thankful to the faculty and staff of the department.

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Abstract

In the digital age, effective management of educational institutions has become increasingly complex, necessitating the integration of advanced technological solutions. This abstract presents the concept of an School Management System (SMS), designed to streamline administrative processes, enhance communication between stakeholders, and optimize overall efficiency within educational institutions.

The SMS offers a centralized database for managing student enrollment, admissions, and demographic information, simplifying the often complex process of student administration. By automating tasks related to enrollment and registration, educational institutions can ensure accurate record-keeping while reducing administrative burdens on staff. Additionally, the system's attendance tracking feature enables educators to monitor student attendance in real-time, identify trends, and intervene promptly to address any attendance-related issues, fostering a culture of accountability and engagement.

Resource management is streamlined through the SMS, which provides tools for managing educational resources such as classrooms, textbooks, and equipment. By optimizing resource allocation and utilization, educational institutions can maximize efficiency and minimize waste, ultimately enhancing the learning environment for students. The system also prioritizes security and data privacy, implementing robust measures to safeguard sensitive student information and ensure compliance with privacy regulations.

Furthermore, the SMS enhances communication and collaboration among stakeholders by integrating various communication channels, including email and messaging platforms. This facilitates seamless interaction between educators, students, parents, and administrators, fostering transparency and enhancing the overall educational experience. With its robust security measures in place to protect sensitive information, coupled with its flexibility and scalability to adapt to evolving institutional needs, the SMS stands as a cornerstone in promoting efficiency, transparency, and student success within educational settings.

In conclusion, The Student Management System (SMS) simplifies administrative tasks, Enhances communication, and improves educational outcomes. By centralizing data and streamlining processes, it fosters efficiency, Empowering stakeholders to collaborate effectively for institutional success.

सार

आज के डिजिटल माहौल में, शैक्षिक संस्थानों का प्रबंधन करना बढ़ती हुई जटिलताओं के साथ एकदम गहरा हो गया है, जिसके लिए उन्नत तकनीकी समाधानों की आवश्यकता है। यह सारांश एक स्कूल प्रबंधन प्रणाली (एसएमएस) की अवधारणा को प्रस्तुत करता है, जो प्रशासनिक प्रक्रियाओं को सरलीकृत करने, हितधारकों के बीच संचार को मजबूत करने, और शैक्षिक संस्थानों में कुल में दक्षता को अनुकूलित करने के लिए निर्मित किया गया है।

एसएमएस छात्र दर्जन, प्रवेश, और जनसांख्यिकीय जानकारी को प्रबंधित करने के लिए एक केंद्रीकृत डेटाबेस प्रदान करता है, जो छात्र प्रशासन के इस अक्सर जटिल प्रक्रिया को सरल बनाता है और स्टाफ पर प्रशासनिक बोझ को कम करता है। इसके अलावा, प्रणाली की उपस्थिति की ट्रैकिंग सुविधा शिक्षकों को छात्रों की उपस्थिति को वास्तविक समय में मॉनिटर करने की अनुमति देती है, और अनुपस्थिति से संबंधित किसी भी मुद्दे को तत्काल संबोधित करने में मदद करती है, जो जवाबदेही और संबोधन की एक संस्कृति को बढ़ावा देती है।

संसाधन प्रबंधन एसएमएस के माध्यम से संगठनीय किया जाता है, जो शैक्षणिक संसाधनों जैसे कक्षाएँ, पाठ्यक्रम, और उपकरणों को प्रबंधित करने के लिए उपकरण प्रदान करता है, संसाधन आवंटन और उपयोग को अधिकतम करके शैक्षणिक परिवेश को बेहतर बनाने। प्रणाली भी संवेदनशील छात्र जानकारी की सुरक्षा को प्राथमिकता देती है, जो नाजुक छात्र जानकारियों की सुरक्षा और गोपनीयता को सुनिश्चित करती है।

इसके अलावा, एसएमएस विभिन्न संचार साधनों, जैसे कि ईमेल और संदेशन प्लेटफ़ॉर्म, को शामिल करके हिंदी में संचार और सहयोग को बढ़ाता है। यह शिक्षकों, छात्रों, माता-पिता, और प्रशासकों के बीच अद्भुत बातचीत को सुगम बनाता है, जो पारदर्शिता को बढ़ाता है और कुल शैक्षिक अनुभव को बेहतर बनाता है।

इसके संवेदनशील जानकारी को सुरक्षित रखने के लिए मजबूत सुरक्षा उपाय के साथ, और उसकी लचीलापन और स्केलेबिलिटी के साथ जोड़ी गई, एसएमएस परिवर्तनशील संस्थागत आवश्यकताओं को ध्यान में रखकर अधिग्रहण के लिए एक स्थापना के रूप में खड़ा है, जो कि कुशलता, पारदर्शिता, और छात्र सफलता को बढ़ाने में मदद करता है।

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CHAPTER 1- Introduction

The Student Management System represents a pivotal software solution benefiting both students and school administrators. Presently, all tasks are handled manually, a process that consumes significant time and resources. Our system revolutionizes student-related activities by automating various processes, mitigating time constraints and reducing costs. In our Student Management System, we have two Users, First is admin and another is user (students). Within our software, students are registered using an authentication code, namely their unique student ID and a password. This enables students to log into their accounts, granting them access to view all notices disseminated by the admin. The Student Management System enables administrators to efficiently update and access student personal details, while also empowering students to maintain their profiles. It simplifies the storage of student records, including IDs, names, addresses, phone numbers, and dates of birth, ensuring quick retrieval of information when needed. By streamlining Student Information Management, it facilitates ease of use for both administrators and students within any organization. It assists educational admin in generating reports efficiently.

1.1 Problem Identification

Identifying key issues within School Management Systems (SMS) is crucial for enhancing their efficiency and effectiveness. Manual processes, such as enrollment and attendance tracking, lead to inefficiencies and errors. Additionally, disparate data sources often result in inconsistencies and hinder decision-making. Limited accessibility for stakeholders like parents and teachers, coupled with security vulnerabilities, further compounds the system's challenges. Scalability issues and integration complexities hamper system adaptability and data flow. Poor user experience, reporting limitations, and resource constraints exacerbate these problems, hindering the SMS's ability to support educational institutions effectively. Addressing these issues is paramount to optimizing student management processes and improving overall system performance.

(a) **Manual Process**: Many educational institutions still rely on manual methods for tasks like enrollment, attendance tracking, and grading, leading to inefficiencies, errors, and time consumption.

(b) **Data Discrepancies**: With data stored across multiple systems or in paper form, inconsistencies and inaccuracies in student records can arise, impacting decision-making and reporting accuracy.

(c) Security concerns: Insufficient security measures within the SMS pose a risk to the privacy and confidentiality of student information. Without robust data security protocols in place, student data may be vulnerable to breaches or unauthorized access, raising significant concerns about privacy and compliance.

(d) Integration issues: Incompatibility between the SMS and other systems or software used by the institution can impede seamless data flow and integration. This may lead to data silos, inefficiencies, and difficulties in accessing comprehensive information across different platforms.

(e) Limited accessbility: Lack of access to the SMS for stakeholders like parents, teachers, and students can hinder communication, transparency, and collaboration.

(f) User experience: Complex interfaces or outdated technology within the SMS can result in poor user experience for administrators, teachers, and other stakeholders. Difficulty in navigating the system or performing tasks may reduce user adoption and satisfaction, ultimately impacting the system's effectiveness and usability.

1.2 Parent Organization

Shriram Technologies stands out as a prominent figure in the Information Technology (IT) sector, committed to providing clients with innovative and advanced solutions. With an unwavering dedication to technological progress and ensuring customer contentment, Shriram Technologies has earned a reputation as a reliable ally for businesses aiming to utilize IT for their advancement and prosperity.

At Shriram Technologies, our team is composed of skilled professionals who excel in various domains of IT. From software development to web design, mobile application development, cloud computing, and cybersecurity, we cover a broad spectrum of services. Our commitment lies in staying at the forefront of the industry, constantly adapting to the latest trends and technologies. This dedication ensures that we deliver efficient and effective solutions tailored to the specific needs of our clients.

Our approach to client engagement is cantered around understanding their business objectives and challenges, allowing us to develop customized solutions that drive tangible results and create long-term value. We believe in fostering strong relationships with our clients based on trust, transparency, and collaboration, ensuring that we deliver solutions that exceed their expectations.

With a focus on quality, innovation, and customer satisfaction, Shriram Technologies is poised to continue its journey as a leader in the IT industry, helping businesses harness the power of technology to achieve their goals and stay ahead in today's rapidly evolving digital landscape.

Through our client-centric approach, we recognize that each business is unique, with its own set of challenges and aspirations. Therefore, we invest time and effort in thoroughly understanding our clients' needs, objectives, and pain points. This deep understanding forms the foundation upon which we build tailored solutions that not only address immediate concerns but also lay the groundwork for sustained growth and success.

Moreover, our commitment to excellence extends beyond the delivery of projects. We place great emphasis on fostering long-term partnerships with our clients, based on mutual trust, transparency, and open communication. We view ourselves not just as service providers but as strategic allies, dedicated to supporting our clients at every stage of their journey towards digital transformation.

1.3 Hardware and Software Specifications

1.3.1 Hardware Specification

Hardware Requirement: To ensure optimal performance and reliability, we've meticulously outlined the hardware specifications essential for our project. Initially, we've selected a Core i3 CPU from the 3000 series boasting a 2.30 GHz frequency. This processor's robust processing capability is vital for effectively managing our project's computational requirements. Our system will be equipped with ample memory to support multitasking and effortlessly handle large datasets, complemented by 4GB of RAM. For storage, we've opted for a 512 GB hard disk drive, providing ample space for project files and data. Additionally, we'll integrate a 512 GB SSD (Solid State Drive), enhancing overall system performance and accelerating data access rates. Operating on a 64-bit OS X64 H Processor ensures maximum performance and seamless compatibility with contemporary software. These meticulously chosen hardware components instill confidence as we embark on our project, knowing our system is adept at meeting the demands efficiently and effectively.

1.3.2 Software specification

Window 11 operating system: We've chosen Windows 11 as our operating system for its array of advanced features, fortified security measures, and streamlined user interfaces. Its contemporary design and refined performance not only enhance the user experience but also ensure a stable and secure environment conducive to software development.

Visual Studio Code: As our primary coding environment, VS Code presents an abundance of features finely tuned for modern development workflows. Its broad support for multiple programming languages, vast libraries of extensions, and seamless integration with version control systems all contribute to streamlining the coding process. This fosters enhanced productivity and facilitates collaboration among team members.

MySQL: Opting for MySQL for database management guarantees the efficient handling of data across the development lifecycle. Its user-friendly graphical interface simplifies tasks like database design, modeling, and administration, empowering developers to effortlessly create and optimize databases. Moreover, its seamless compatibility with Windows 11 ensures smooth integration into the development environment

XAMPP: XAMPP serves as a fundamental component in our project development due to its multifaceted utility in facilitating local web development environments. By integrating Apache, MySQL, PHP, and Perl, XAMPP offers a comprehensive solution for setting up a server environment on a local machine. This is particularly advantageous during the development phase as it allows us to emulate the production environment locally, enabling seamless testing and debugging of web applications before deployment.

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Harnessing the strengths of Windows 11, VS Code, Workbench, and XAMPP, our software development process is primed for scalability and peak performance. Whether managing extensive data loads, testing intricate APIs, or deploying software across varied environments, this comprehensive software stack furnishes the essential tools and resources to address the rigors of contemporary software development. In summary, the integrated use of Windows 11, Workbench, VS Code, and XAMPP constitutes a unified and robust software development ecosystem, adept at navigating the complexities of today's dynamic and interconnected digital terrain.

CHAPTER 2- System Analysis

2.1 Problem Analysis

Analyzing problems within a Student Management System (SMS) involves identifying root causes and understanding their impact on system functionality and user experience. This analysis typically includes.

(a) Complexity in Student Registration

Admins must handle various aspects of student registration, including personal details, academic records, and enrollment in specific classes. Managing this information efficiently while ensuring accuracy and compliance with regulations poses a significant challenge.

(b) Class Management

Admins need to oversee class schedules, allocate students to appropriate classes, and manage teacher assignments. Ensuring optimal class organization, avoiding scheduling conflicts, and accommodating changes in real-time require robust systems and processes.

(c) Notice Management

Admins are responsible for disseminating important notices to students regarding events, deadlines, or policy updates. Without an efficient notice management system, ensuring timely delivery and accessibility of information to all students becomes problematic.

(d) Accessibility and User Interface

The student interface must be user-friendly and intuitive to navigate, enabling easy access to notices and other relevant information. Designing a system that caters to diverse user needs and preferences while maintaining simplicity is crucial for user adoption and satisfaction.

(e) Data Security and Privacy

Safe guarding student data, including personal information and academic records, is paramount Developing and managing the system entails implementing strong security protocols to thwart unauthorized access and protect against data breaches. This task is further complicated by the need to adhere to stringent privacy regulations, adding an additional layer of complexity to the process.

(f) Scalability

Adapting to expanding student numbers and evolving organizational demands necessitates a scalable system capable of handling augmented data loads and user engagement. Maintaining optimal performance and user satisfaction mandates meticulous planning and resource distribution to ensure seamless scalability.

2.2 Feasibility Study

2.2.1 Economical Feasibility Study

Personnel Expenses

S.no	Personnel Expenses	Cost
1	System Analyst (1) [8 days/month]	5000/-
2	Programmer (1) [25 days/month]	5000/-
3	Database Specialist (1) [10 days/month]	3000/-
	Total	13000/-

Other Expenses

S.no	Other Expenses	Cost
1	Electricity (200 unit @ 8rs/unit)	1600/-
2	Stationary (for documentation)	500/-
3	Workspace facility (table, chairs)	1500/-
4	Wi-fi	1500/-
	Total	5100/-

Hardware & Software expenses

S.no.	Specification	Cost
1.	Development Server (Express JS)	3000/-
2.	Server Software (O.S.)	1000/-

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3.	DBMS Server (MYSQL)	1000/-
	Total	Rs. 23,100/-

2.2.2 Technical Feasibility Study

Programming Languages

S.no.	Specification	Details
1.	Frontend	HTML,CSS,JAVASCRIP
2.	Backend	PHP
3.	Database	MySQL

Hardware Requirements

S.no.	Specification	Description
1.	Processor	Intel core i3 and above generation
2.	RAM	Up to 4 GB
3.	SSD	256 GB
4.	Hard-disk	1TB

Software requirements

S.no.	Specification	Description
1.	Front-End	HTML,CSS,JAVASCRIP
2.	Back-End	PHP
3.	Application	Visual Studio Code, MySQL

4.	Operating System	64 bit (Window 11)
5.	Network	MySQL

2.2.3 Behavioral Feasibility Study

(a) Intuitive interface

Ensure that the Student Management System interface is designed with intuitive navigation and clear information presentation to facilitate ease of use for all users, including administrators, teachers, students, and parents.

(b) User Needs Assessment

Conduct surveys or interviews with administrators, teachers, students, and parents to understand their requirements, preferences, and expectations from the Student Management System (SMS).

(c) User Training and Support

Evaluate the availability of resources and plans for providing comprehensive training and ongoing support to users to ensure they can effectively utilize the SMS.

(d) Change Management Strategies

Identify potential resistance to change among users and develop strategies to address it, such as communication plans, stakeholder engagement, and incentives for adoption.

(e) User Experience Design

Assess the usability and user-friendliness of the SMS interface to ensure it meets the diverse needs of users and provides an intuitive experience for navigation and interaction.

## 2.3 Data Flow Diagram

2.3.1 DFD 0

2.3.2 DFD 1 For Admin

Admin —Login→ (Login 1) ←verify— Login

(Login 1) —ok→ (Dashboard 2)

Dashboard 2:
- classid → (Class 2.1)
- Studentid → (Student 2.2)
- Noticeid → (Notice 2.3)
- publicnoticeid → (Public Notice 2.4)
- reportsid → (Reports 2.5)

(Class 2.1) → Class_Info
Classname, section, creationdate → ClassInfo

(Student 2.2) → Student_Info
studentname, studentimg studentemail, etc → StudentInfo

(Notice 2.3) → Notice_Info
noticedetail, noticemsg, creationdate etc → NoticeInfo

(Public Notice 2.4) → PublicNotice_Info
publicnoticedetail, publicnoticemsg, creationdate etc → PublicNotice Info

(Reports 2.5) → Student_Info
studentid, studenidoa studentclass, etc → Between dates reports

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2.2.3 DFD 1 For Student

CHAPTER 3- System Design

3.1 Table Structure

a) Admin Table

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
1	ID	int(10)			No	None		AUTO_INCREMENT
2	AdminName	varchar(120)	utf8mb4_general_ci		Yes	NULL		
3	UserName	varchar(120)	utf8mb4_general_ci		Yes	NULL		
4	MobileNumber	bigint(10)			Yes	NULL		
5	Email	varchar(200)	utf8mb4_general_ci		Yes	NULL		
6	Password	varchar(200)	utf8mb4_general_ci		Yes	NULL		
7	AdminRegdate	timestamp			Yes	current_timestamp()		

b) Class Table

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
1	ID	int(5)			No	None		AUTO_INCREMENT
2	ClassName	varchar(5C)	latin1_swedish_ci		Yes	NULL		
3	Section	varchar(20)	latin1_swedish_ci		Yes	NULL		
4	CreationDate	timestamp			Yes	current_timestamp()		

c) Notice Table

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
1	ID	int(5)			No	None		AUTO_INCREMENT
2	NoticeTitle	mediumtext	latin1_swedish_ci		Yes	NULL		
3	ClassId	int(10)			Yes	NULL		
4	NoticeMsg	mediumtext	latin1_swedish_ci		Yes	NULL		
5	CreationDate	timestamp			Yes	current_timestamp()		

d) Public Notice Table

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
1	ID	int(5)			No	None		AUTO_INCREMENT
2	Notice Title	varchar(200)	latin1_swedish_ci		Yes	NULL		
3	NoticeMessage	mediumtext	latin1_swedish_ci		Yes	NULL		
4	CreationDate	timestamp			Yes	current_timestamp()		

e) Student Table

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
1	ID	int(10)			No	None		AUTO_INCREMENT
2	StudentName	varchar(200)	latin1_swedish_ci		Yes	NULL		
3	StudentEmail	varchar(200)	latin1_swedish_ci		Yes	NULL		
4	StudentClass	varchar(100)	latin1_swedish_ci		Yes	NULL		
5	Gender	varchar(50)	latin1_swedish_ci		Yes	NULL		
6	DOB	date			Yes	NULL		
7	StuID	varchar(200)	latin1_swedish_ci		Yes	NULL		
8	FatherName	mediumtext	latin1_swedish_ci		Yes	NULL		
9	MotherName	mediumtext	latin1_swedish_ci		Yes	NULL		
10	ContactNumber	bigint(10)			Yes	NULL		
11	AltenateNumber	bigint(10)			Yes	NULL		
12	Address	mediumtext	latin1_swedish_ci		Yes	NULL		
13	UserName	varchar(200)	latin1_swedish_ci		Yes	NULL		
14	Password	varchar(200)	latin1_swedish_ci		Yes	NULL		
15	Image	varchar(200)	latin1_swedish_ci		Yes	NULL		
16	DateofAdmission	timestamp			Yes	current_timestamp()		

f) Page Table

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra
1	ID	int(10)			No	None		AUTO_INCREMENT
2	Page Type	varchar(200)	latin1_swedish_ci		Yes	NULL		
3	Page Title	mediumtext	latin1_swedish_ci		Yes	NULL		
4	PageDescription	mediumtext	latin1_swedish_ci		Yes	NULL		
5	Email	varchar(200)	latin1_swedish_ci		Yes	NULL		
6	MobileNumber	bigint(10)			Yes	NULL		
7	UpdationDate	date			Yes	NULL		

3.2 Entity Relationship Diagram
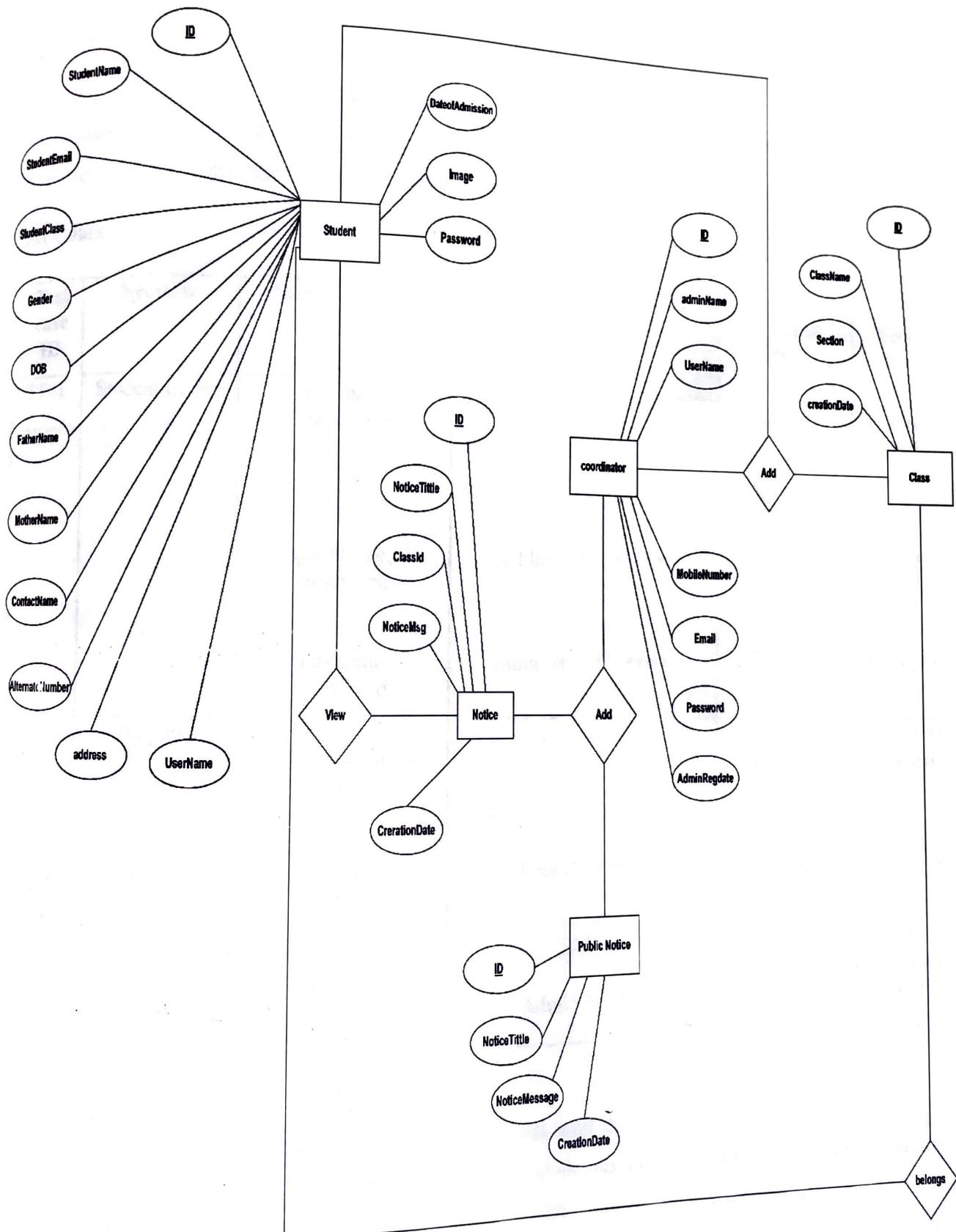
CHAPTER 4- Testing

4.1 Unit Testing

We conduct unit testing on each small component of the website individually to ensure proper functionality. This involves testing various inputs to validate their corresponding outputs and overall behavior. Specifically, we've executed these tests extensively on the user login feature.

Test Cases

Test case ID	Section	Element name	Testdata	Expected result	Actual result
TC-1	Student Login	username, password	No Data	Please fill out this field.	Test case passed.
		username, password	Siddharth1/********	Error Occurred.	Test case passed.
		username, Password	Siddharth/********	Successfully logged in.	Test case passed.
TC-2	Admin Login	username, password	No Data	Please fill out this field.	Test case passed
		username, password	Admin11/********	Error Occurred.	Test case passed
		username, Password	Admin/******	Successfully Registered	Test case passed

The login button on the Login Page is disabled by default until the user enters both their valid email and password in the input fields. This measure ensures that the admin has provided the required information before attempting to log in. Once both fields are filled, the user is able to log in and access the dashboard, but only if

the entered data is valid and correct. Logging in as a user will navigate to the user dashboard, and will allow users to make changes to their profiles.

4.2 System testing

System testing is a type of software testing that evaluates the entire system including all its components. Tests how the different component of the application navigate to another component. Verify that only user can able to access the user module. Verify that user dashboard has all the required option to manage all types of data.

Test Case ID	Description
Test Case 1	Only authorized user can login
Test Case 2	Only the login user can give review
Test Case 3	Verify that user dashboard has all the required option to manage all the types of data

4.3 Compatibility Testing

Compatibility testing refers to the process of testing its compatibility across different platforms, devices, browsers, operating system, and network environments. The objective is to ensure that the website functions work properly and consistently for users.

Test Cases

Test Scenario	Element Name	Element Type	Input	Expected Result	Actual Result	Test Result
1	Device Compatibility	Responsiveness on different devices	Checking Responsiveness on devices for e.g., Laptops, tablets, Smartphones	Website will adapt different screen sizes on different devices without any disbalancing	As expected, the website is full responsive and working perfectly	Passed
2	Operating System Compatibility	Checking website behavior on different operating systems	Working on different Operating Systems e.g., Android systems, macOS, iOS, Windows, etc.	There shouldn't be any changes in website Designing, Working, Accessibility and Performance speed, while switching the Operating System	As Expected, The Website is working all same even on different Operating System expect Linux operating system	Passed
3	End-user Security	Data Security	Testing security measures of users	The logged in user will be able to see his/her own details related information only or correct user-profile is opened for user while logging in	As Expected, Details of login Email is shown, no details of other user are visible to all. Hence Secured	Passed

CHAPTER 5- Implementation

5.1 Visual studio Code

a. Firstly go to the official website of visual studio code https://visualstudio.microsoft.com/downloads.

b. Now select the one which you want to install according to your system click on the download button.

c. Now click on install button

d. Follow up installation process and choose options that are suitable to your need

e. Click on exit

5.2 MySQL

a. First go to the official website of MySQL https://www.mysql .

b. There you will find the download button

c. Then click on MySQL community (GPL) downloads

d. Click on MySQL installer for windows

e. Click on the first download link

f. Then click on he custom button

g. Expand MySQL server then expand MySQL server 8.0

h. Then double click on the latest version

i. Click on next

j. Click on execute

k. Set your password click on next

l. Then automatically MySQL workbench window will open

5.3 XAMPP

a. Visit the official XAMPP website at https://www.apachefriends.org

b. Navigate to the download section.

c. Choose the appropriate version for your operating system (Windows, macOS, Linux).

d. Set the destination folder where you want to install XAMP select next.

e. Click on next and then finish.

f. Verify the XAMPP properly installed or not.

In this project, the user journey begins with the registration process, where individuals are required to create an account by providing necessary details such as name, email address, and password. Upon successful registration, users gain access to the platform's functionalities. A key feature of the dashboard is the ability for users to view parking status and receipts for vehicles registered under their mobile number. Users can input their registered mobile number and retrieve information regarding the parking status of their vehicles. This includes details such as current parking location, duration, and any associated fees.

CHAPTER 6- Sample Forms and Reports

a) **Home Page**

d) **Admin Login Page**

f) Admin Dashboard

SMS

Admin

DASHBOARD

Dashboard
Class
Students
Notice
Public Notice
Pages
Reports
Search

Admin Welcome dashboard!

Admin

Report Summary

Updated Report

Total Class	Total Students	Total Class Notice	Total Public Notice
9	5	4	2
View Classes	View Students	View Notices	View PublicNotices

Student Management System

i) Add Class

SMS

Admin

DASHBOARD

Dashboard
Class
  > Add Class
  > Manage Class
Students
Notice
Public Notice
Pages
Reports
Search

Admin Welcome dashboard!

Admin

Add Class

Dashboard / Add Class

Add Class

Class Name

Section

Add

Student Management System

j) Manage Class

SMS

Admin

DASHBOARD

Dashboard

Class

> Add Class

> Manage Class

Students

Notice

Public Notice

Pages

Reports

Search

Admin Welcome dashboard!
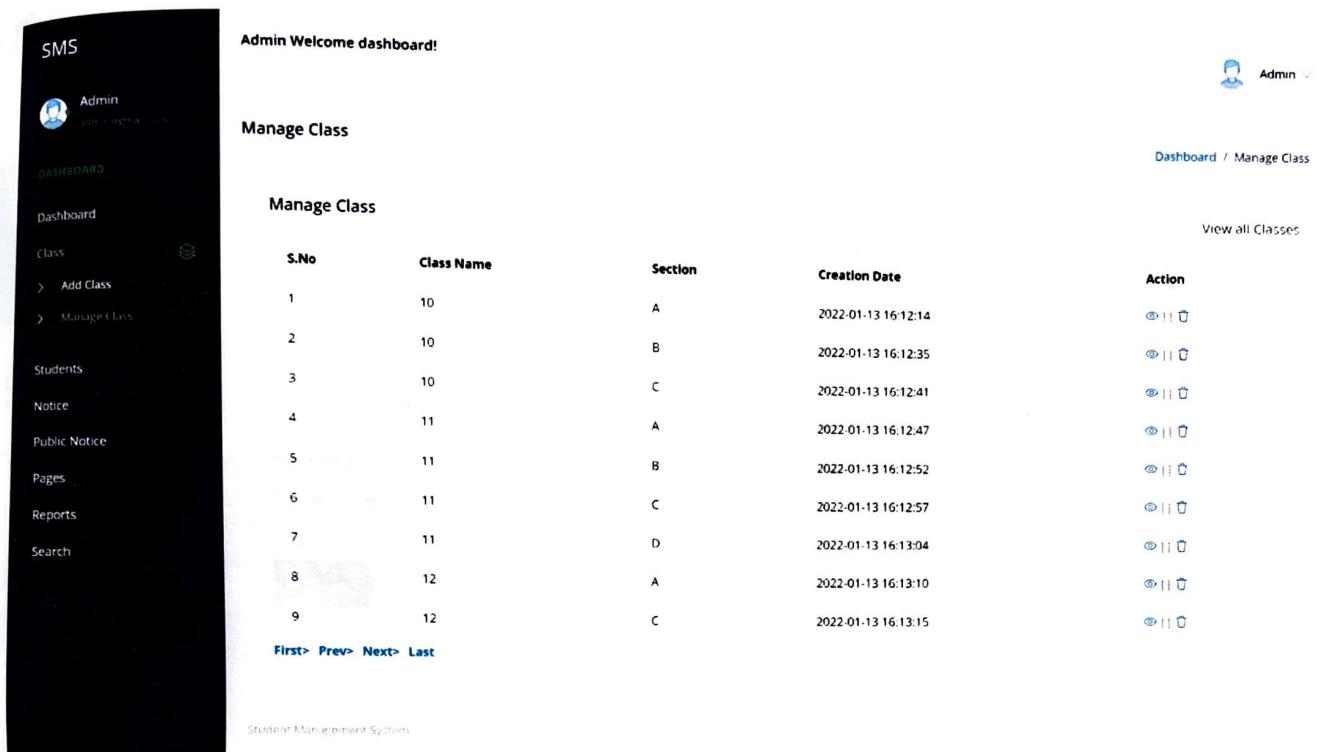
Admin

Manage Class

Manage Class

View all Classes

S.No	Class Name	Section	Creation Date	Action
1	10	A	2022-01-13 16:12:14	👁 ‖ 🗑
2	10	B	2022-01-13 16:12:35	👁 ‖ 🗑
3	10	C	2022-01-13 16:12:41	👁 ‖ 🗑
4	11	A	2022-01-13 16:12:47	👁 ‖ 🗑
5	11	B	2022-01-13 16:12:52	👁 ‖ 🗑
6	11	C	2022-01-13 16:12:57	👁 ‖ 🗑
7	11	D	2022-01-13 16:13:04	👁 ‖ 🗑
8	12	A	2022-01-13 16:13:10	👁 ‖ 🗑
9	12	C	2022-01-13 16:13:15	👁 ‖ 🗑

First> Prev> Next> Last

Student Management System

k) View Class

SMS

Admin

DASHBOARD

Dashboard

Class

Students

Notice

Public Notice

Pages

Reports

Search
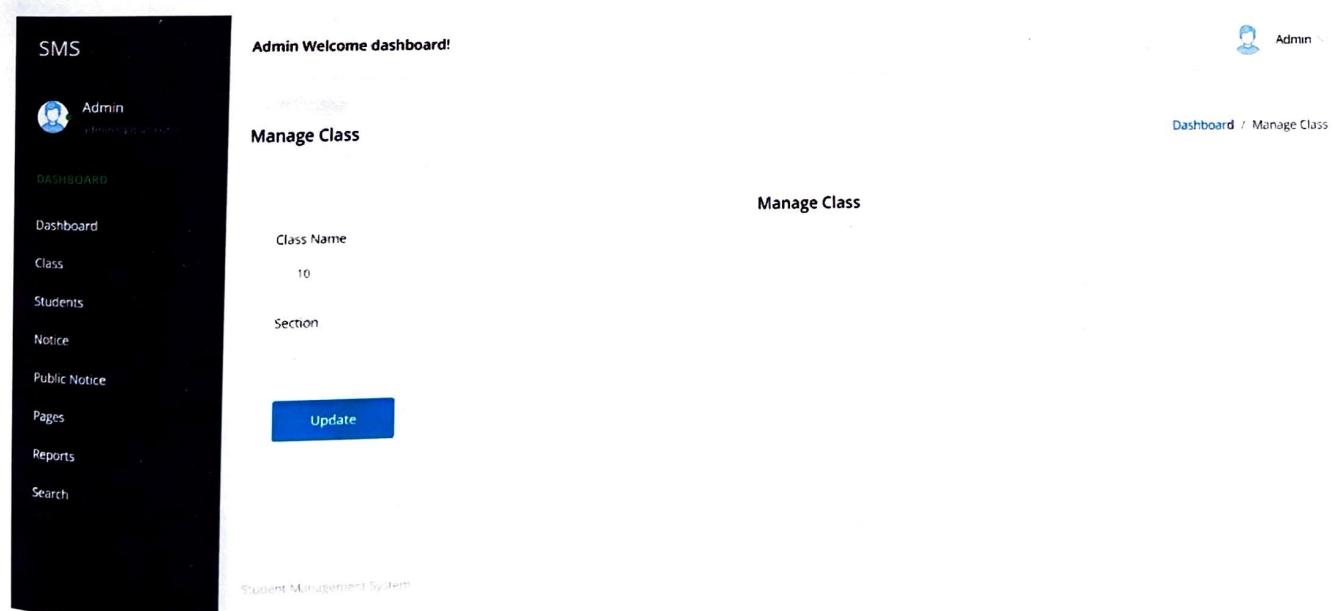
Admin Welcome dashboard!

Admin

Manage Class

Manage Class

Class Name

10

Section

Update

Student Management System

24

o) Add Notice

SMS

Admin

DASHBOARD

Dashboard
Class
Students
Notice
> Add Notice
> Manage Notice

Public Notice
Pages
Reports
Search
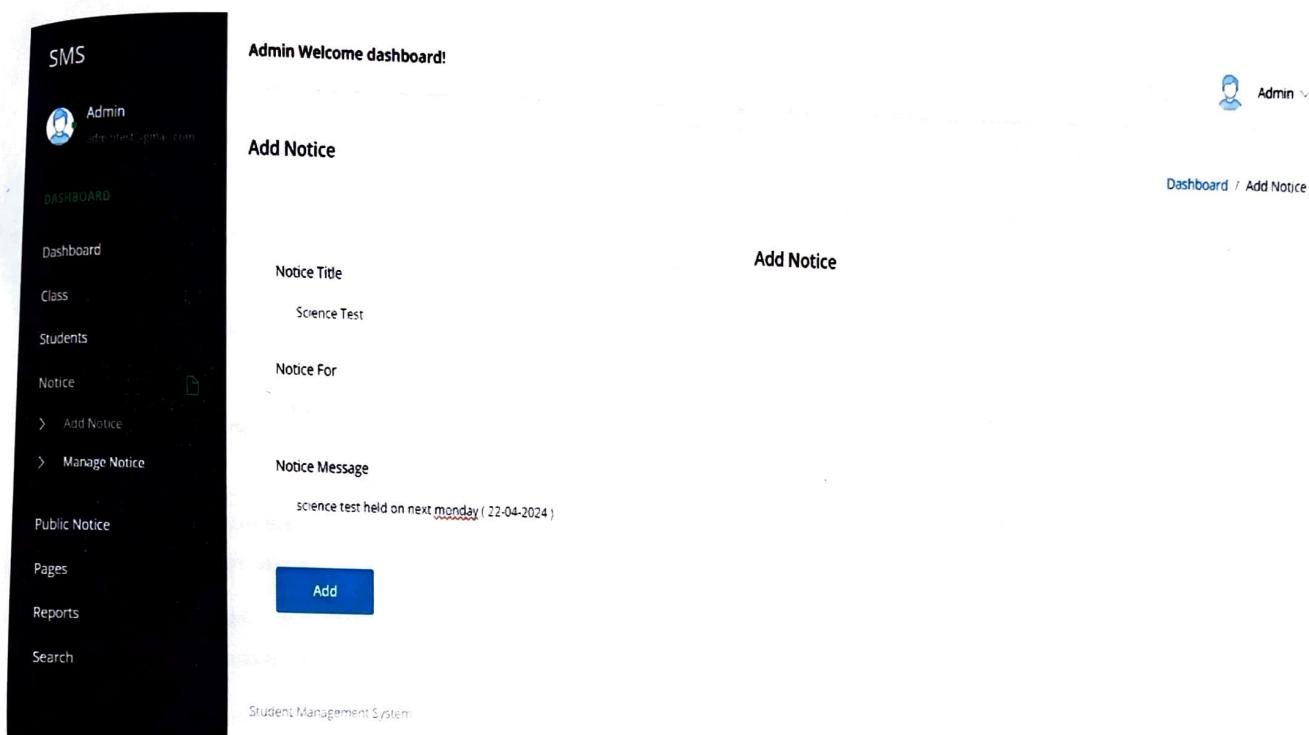
Admin Welcome dashboard!

Admin

Add Notice

Add Notice

Notice Title

Science Test

Notice For

Notice Message

science test held on next monday (22-04-2024)

Add

Student Management System

r) Add Public Notice

SMS

Admin

DASHBOARD

Dashboard
Class
Students
Notice
Public Notice
> Add Public Notice
> Manage Public Notice

Pages
Reports
Search
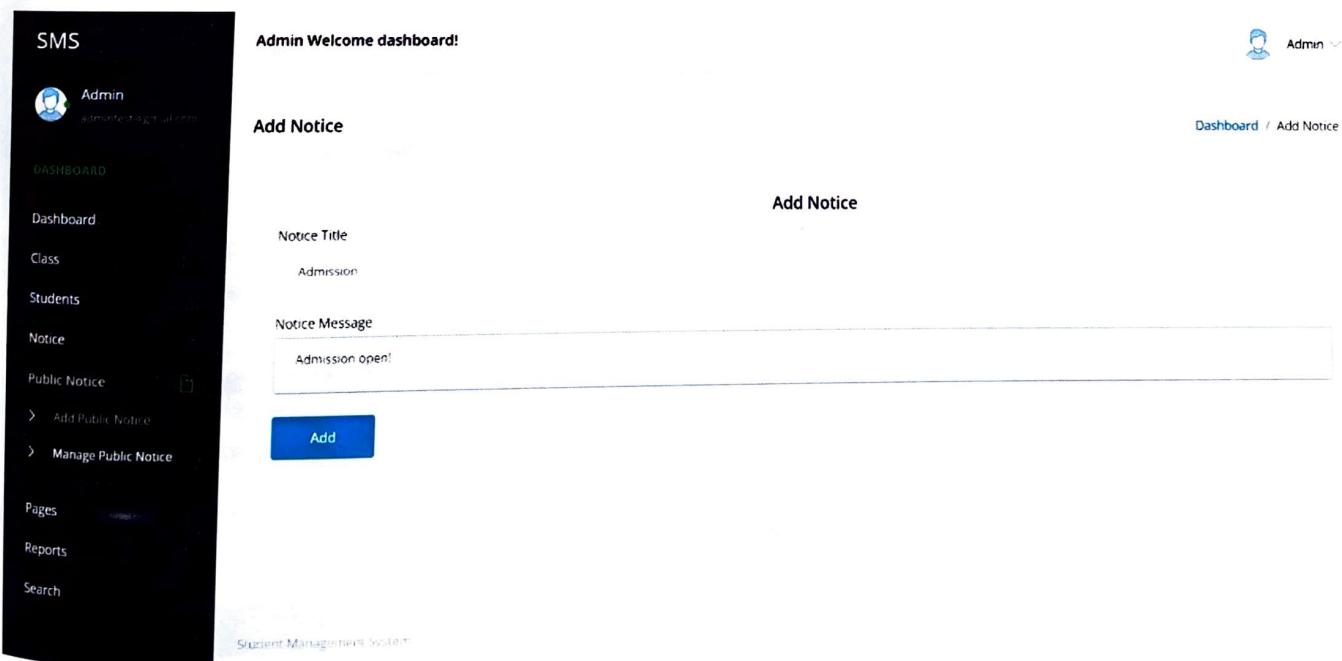
Admin Welcome dashboard!

Admin

Add Notice

Add Notice

Notice Title

Admission

Notice Message

Admission open!

Add

Student Management System

25

I) Add Student

Add Students

Student Name

siddharth Thakur

Student Email

siddharth1@gmail.com

Student Class

12 A

Gender

Male

Date of Birth

01-01-2001

Student ID

SIDDHARTH

Student Photo

[Choose File] images.png

Parents/Guardian's details

Father's Name

Father

Mother's Name

Mother

Contact Number

1111111111

Alternate Contact Number

2222222222

Address

City center gwalior

Login details

User Name

Siddharth

Password

....

Add

m) Manage Student

Admin Welcome dashboard!
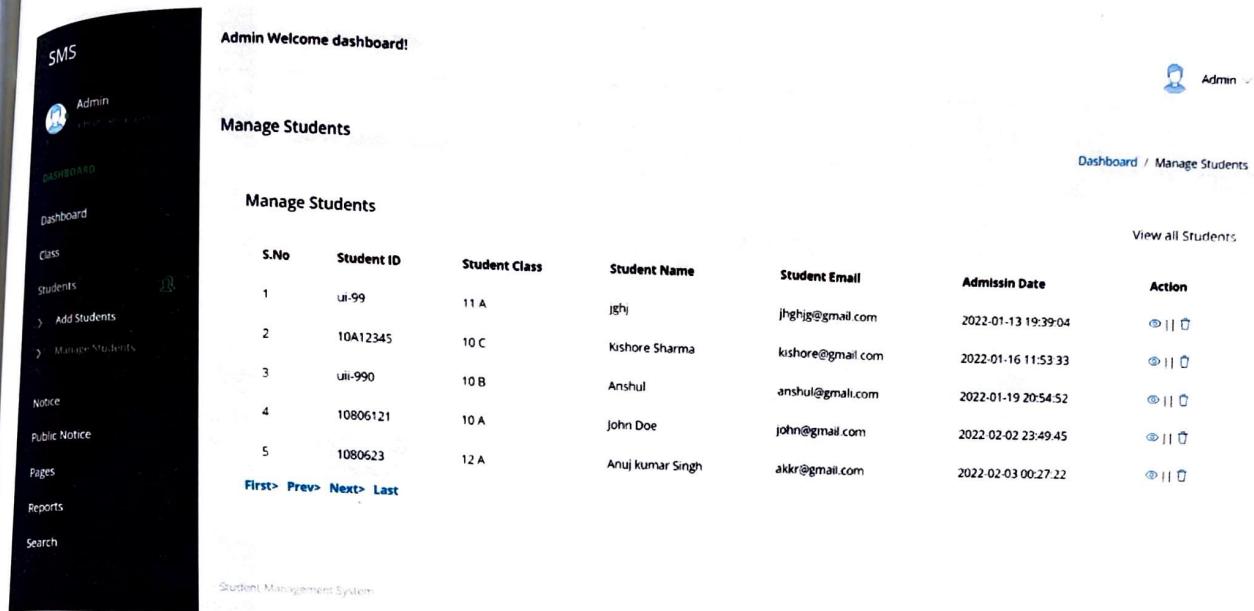
Admin

Admin

Manage Students

Dashboard / Manage Students

Dashboard

Class

Students

> Add Students

> Manage Students

Notice

Public Notice

Pages

Reports

Search

Manage Students

View all Students

S.No	Student ID	Student Class	Student Name	Student Email	Admissin Date	Action
1	ui-99	11 A	jghj	jhghjg@gmail.com	2022-01-13 19:39:04	👁 ‖ 🗑
2	10A12345	10 C	Kishore Sharma	kishore@gmail.com	2022-01-16 11:53:33	👁 ‖ 🗑
3	uii-990	10 B	Anshul	anshul@gmali.com	2022-01-19 20:54:52	👁 ‖ 🗑
4	10806121	10 A	John Doe	john@gmail.com	2022-02-02 23:49:45	👁 ‖ 🗑
5	1080623	12 A	Anuj kumar Singh	akkr@gmail.com	2022-02-03 00:27:22	👁 ‖ 🗑

First> Prev> Next> Last

Student Management System

n) Update Student

SMS

Admin Welcome dashboard!
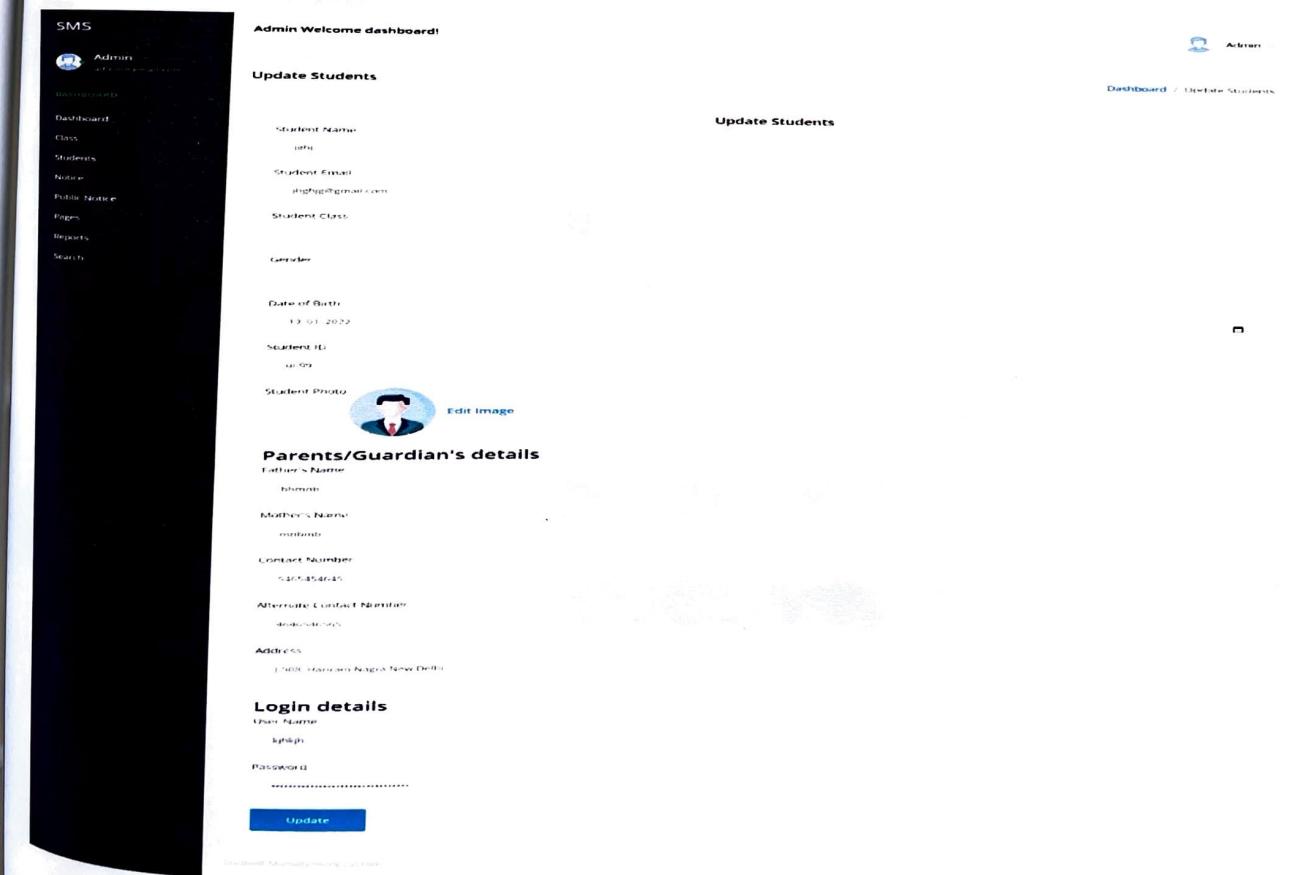
Admin

Admin

Update Students

Dashboard / Update Students

Dashboard

Class

Students

Notice

Public Notice

Pages

Reports

Search

Update Students

Student Name

jghj

Student Email

jhghjg@gmail.com

Student Class

Gender

Date of Birth

13-01-2022

Student ID

ui-99

Student Photo

Edit Image

Parents/Guardian's details

Father's Name

bhmnb

Mothers Name

mnbmb

Contact Number

545454545

Alternate Contact Number

dsdodfdsds

Address

1300 Hanuam Nagar New Delhi

Login details

User Name

kjhkjh

Password

....

Update

Student Management System

27

u) Between dates report

SMS

Admin

DASHBOARD

Dashboard
Class
Students
Notice
Public Notice
Pages
Reports
Search
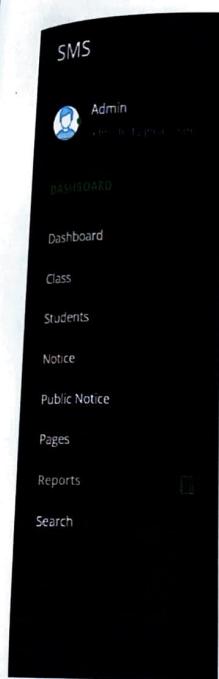
Admin Welcome dashboard!

Admin

Between Dates Reports

Between Dates Reports

From Date:

29-03-2024

To Date:

01-04-2024

Submit

Student Management System

x) Student Login page
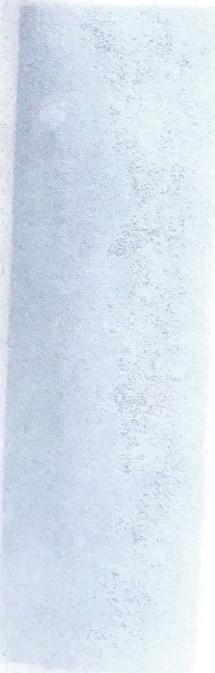
SMS

Hello! let's get started
Sign in to continue

10A12345

....

Login

☐ Keep me signed in   Forgot password?

Back Home

y) Student dashboard
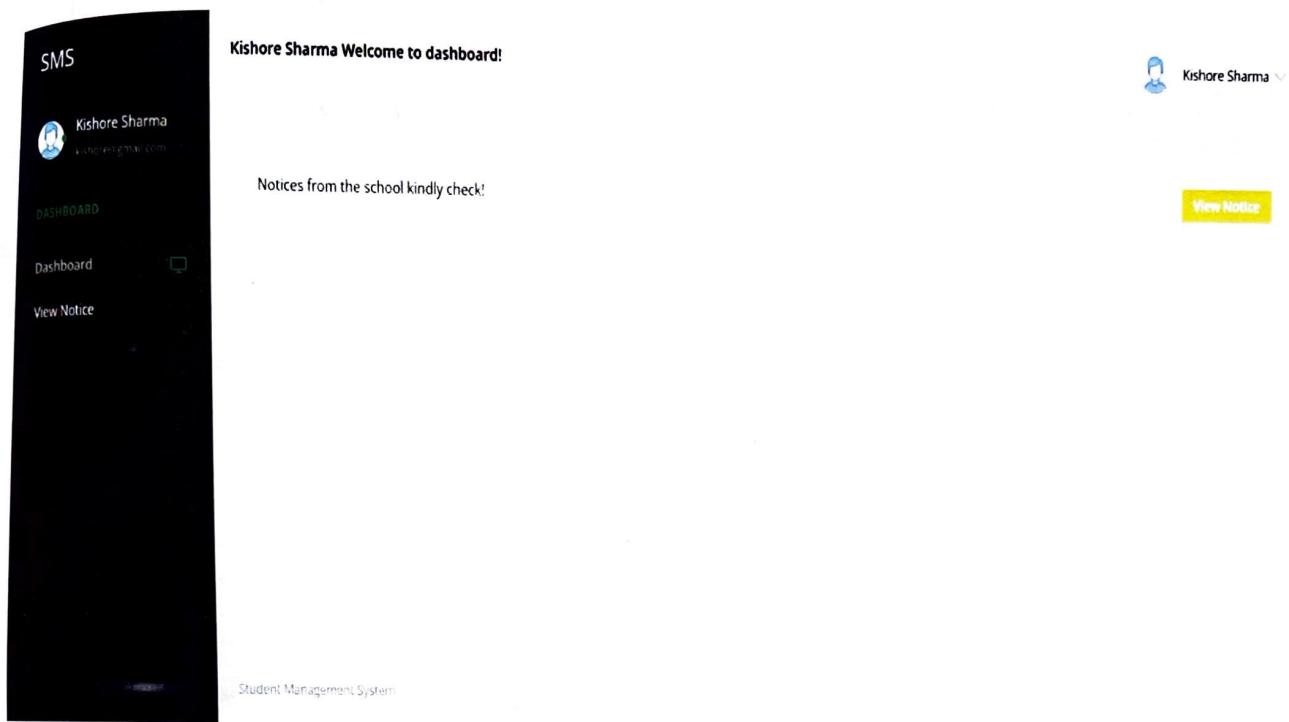
z) View Notice
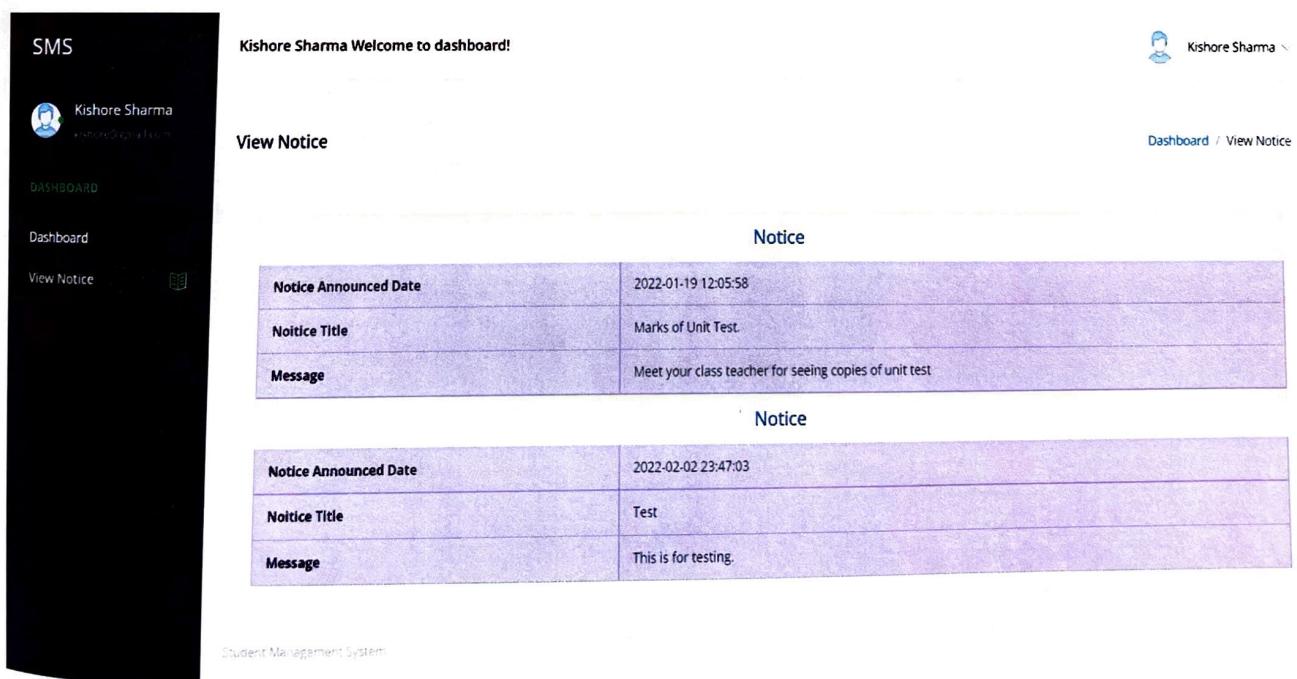
CHAPTER 7- Conclusion & Future Scope

In conclusion, Student Management System (SMS) represents a significant advancement in educational administration, streamlining processes and enhancing communication between stakeholders. By centralizing student data, automating administrative tasks, and providing intuitive interfaces, the SMS contributes to greater efficiency and effectiveness within educational institutions. Its implementation holds the promise of improving administrative workflows, enhancing student engagement, and ultimately fostering better educational outcomes.

Looking ahead, the future scope for the Student Management System is promising. Additional advancements may involve incorporating artificial intelligence and machine learning algorithms into the system to analyze student data comprehensively. This integration would enable the generation of personalized recommendations for academic assistance, enhancing the overall support provided to students. Additionally, expanding the SMS to incorporate features such as virtual classrooms, online assessments, and collaborative learning tools could better meet the evolving needs of modern education. Furthermore, ongoing development and updates to the SMS interface and functionality will ensure its relevance and usability in an ever-changing educational landscape. With continued innovation and adaptation, the Student Management System will continue to play a crucial role in facilitating administrative efficiency and supporting student success in the years to come.

Efficiency Enhancement: The Student Management System (SMS) has significantly improved administrative workflows, reducing manual tasks and streamlining processes for enrollment, attendance tracking, and academic record management.

Improved Communication: By providing a centralized platform for communication, the SMS has facilitated better collaboration between administrators, teachers, students, and parents, leading to enhanced transparency and engagement.

Data-driven Decision Making: With comprehensive student data readily available, the SMS enables educational institutions to make informed decisions about resource allocation, curriculum planning, and student support initiatives.

Enhanced User Experience: The intuitive interface and user-friendly features of the SMS have contributed to a positive user experience, increasing user satisfaction and adoption rates among stakeholders.

Greater Accountability: By incorporating features like attendance tracking and performance monitoring, the Student Management System (SMS) encourages accountability among both students and educators. This cultivates a culture of responsibility within the institution, promoting a sense of ownership and commitment to academic progress.

Integration of Advanced Technologies: Future iterations of the SMS could leverage emerging technologies such as artificial intelligence and predictive analytics to provide personalized recommendations for academic interventions and support services.

Expansion of Features: The SMS could be expanded to include additional functionalities such as virtual classrooms, online assessments, and learning analytics tools, catering to the evolving needs of modern education and facilitating innovative teaching and learning practices.

Cost-effectiveness: The implementation of the SMS has resulted in cost savings for educational institutions by reducing the need for paper-based processes, minimizing administrative overheads, and optimizing resource utilization.

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6. https://www.mysql.com/

7. https://visualstudio.microsoft.com/downloads

8. https://www.apachefriends.prg/download.html/

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Siddharth Thakur

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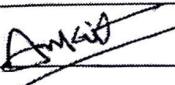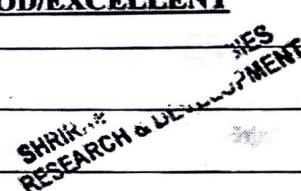
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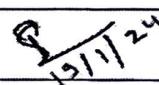
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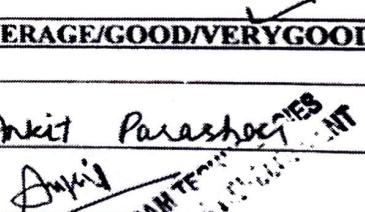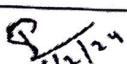
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Industry/Organization	SHRIRAM TECHNOLOGIES RESEARCH & DEVELOPMENT		Date/Duration	01/01/24 - 15/01/24		
Criterion	Poor	Average	Good	Very Good	Excellent	
Punctuality/Timely completion of assigned work				✓		
Learning capacity/Knowledge up gradation				✓		
Performance / Quality of work			✓			
Behaviors /Discipline/Team work				✓		
Sincerity/Hardwork			✓			
Comment on nature of work done/Area/Topic	Learning HTML , CSS and Javascript					
OVERALLGRADE (Anyone)	POOR/AVERAGE/GOOD/VERYGOOD/EXCELLENT ✓					
Name of Industry Mentor	Ankit Parashar					
Signature of Industry Mentor	Ankit			SHRIRAM RESEARCH & DEVELOPMENT		

Receiving Date	13/1/24	Name of Faculty Mentor	DR PARUL SAXENA	Sign	13/1/24

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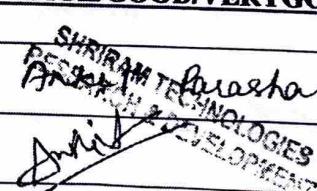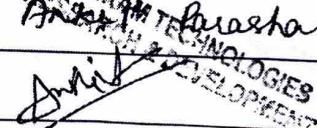
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Criterion	Poor	Average	Good	VeryGood	Excellent
Punctuality/Timely completion of assigned work				✓	
Learning capacity/Knowledge up gradation				✓	
Performance / Quality of work			✓		
Behaviors /Discipline/Team work				✓	
Sincerity/Hardwork				✓	
Comment on nature of work done/Area/Topic		learned about database (Mango DB) and connectivity			
OVERALLGRADE (Anyone)	POOR/AVERAGE/GOOD/VERYGOOD/EXCELLENT				
Name of Industry Mentor	Ankit Parashoer				
Signature of Industry Mentor					

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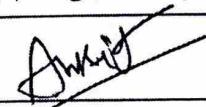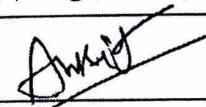
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Criterion	**Poor**	**Average**	**Good**	**VeryGood**	**Excellent**
Punctuality/Timely completion of assigned work				✓	
Learningcapacity/Knowledge up gradation			✓		
Performance/Qualityofwork				✓	
Behaviour/Discipline/Team work				✓	
Sincerity/Hardwork				✓	
Commenton nature of work done/Area/Topic	Engaged in the comprehensive development of website using HTML CSS & Javascript				
OVERALLGRADE(Any one)	**POOR/AVERAGE/GOOD/VERYGOOD/EXCELLENT**				
Name of Industry Mentor	Parashar				
Signature of Industry Mentor					

Receiving Date	13/3/24	Name of Faculty Mentor	Dr. Parul saxena	Sign	✓

36
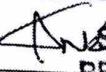
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Industry/Organization	SHRIRAM TECHNOLOGIES RESEARCH & DEVELOPMENT	Date/Duration	16/02/24 - 29/02/24

Criterion	Poor	Average	Good	VeryGood	Excellent
Punctuality/Timely completion of assigned work				✓	
Learning capacity/Knowledge up gradation			✓		
Performance / Quality of work				✓	
Behaviors /Discipline/Team work			✓		
Sincerity/Hardwork				✓	

Comment on nature of work done/Area/Topic	Design and maintain database write queries and ensure efficient data storage and retrieval
OVERALLGRADE (Anyone)	POOR/AVERAGE/GOOD/VERYGOOD/EXCELLENT
Name of Industry Mentor	Ankit
Signature of Industry Mentor	

Receiving Date	13/3/24	Name of Faculty Mentor	Dr. Parul Saxena	Sign	

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Name of student	Siddharth Thakur	Department	CSE (Program: MCA)		
Industry/Organization	SHRIRAM TECHNOLOGIES RESEARCH & DEVELOPMENT	Date/Duration	01/03/24 - 15/03/24		
Criterion	**Poor**	**Average**	**Good**	**Very Good**	**Excellent**
Punctuality/Timely completion of assigned work				✓	
Learning capacity/Knowledge up gradation				✓	✓
Performance/Quality of work				✓	
Behaviour/Discipline/Team work					✓
Sincerity/Hard work			✓		
Comment on nature of work done/Area/Topic	worked on admin portal and its functionalities and user dashboard				
OVERALL GRADE (Any one)	POOR/AVERAGE/GOOD/VERYGOOD/**EXCELLENT**				
Name of Industry Mentor	Ankit Parashar				
Signature of Industry Mentor	SHRIRAM TECHNOLOGIES RESEARCH & DEVELOPMENT				

Receiving Date	22/4/24	Name of Faculty Mentor	Dr. Kunal Somere	Sign	✓

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Name of student	Siddharth Thakur		Department	CSE (Program: MCA)	
Industry/Organization	SHRIRAM TECHNOLOGIES RESEARCH & DEVELOPMENT		Date/Duration	16/03/24 - 31/03/24	
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Punctuality/Timely completion of assigned work				✓	
Learning capacity/Knowledge up gradation					✓
Performance/Quality of work				✓	
Behaviour/Discipline/Team work				✓	
Sincerity/Hard work					✓
Comment on nature of work done/Area/Topic	marked on backend Php connecting				
OVERALL GRADE (Any one)	POOR/AVERAGE/GOOD/VERY GOOD/EXCELLENT ✓				
Name of Industry Mentor	Ankit Parashar				
Signature of Industry Mentor	SHRIRAM TECHNOLOGIES RESEARCH & DEVELOPMENT				

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Learning capacity/Knowledge up gradation				✓	
Performance/Quality of work					✓
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Sincerity/Hard work				✓	
Comment on nature of work done/Area/Topic	worked on furniture finishing the project and testing				
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Name of Industry Mentor	Ankit Parashar				
Signature of Industry Mentor	SHRIRAM TECHNOLOGIES RESEARCH & DEVELOPMENT				

Receiving Date	22/4/24	Name of Faculty Mentor	Er. Parul Somera	Sign	✓