



**IJIRCCCE**

e-ISSN: 2320-9801 | p-ISSN: 2320-9798



# INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN COMPUTER & COMMUNICATION ENGINEERING

Volume 12, Issue 6, June 2024

**ISSN** INTERNATIONAL  
STANDARD  
SERIAL  
NUMBER  
INDIA

**Impact Factor: 8.379**

 9940 572 462

 6381 907 438

 [ijircce@gmail.com](mailto:ijircce@gmail.com)

 [www.ijircce.com](http://www.ijircce.com)

# Web Application Mark Management System

Manikandan V, A Mary Joycy

Student, Department of Computer Applications, RVS College of Engineering, Dindigul, Tamil Nadu, India

Assistant Professor, Department of Computer Applications, RVS College of Engineering, Dindigul, Tamil Nadu, India

**ABSTRACT:** Web Application Mark Management System is a web-based platform designed to provide users with a comprehensive and the process of managing and organizing academic marks or grades. This system offers educators, administrators, and students a centralized interface for efficiently inputting, storing, analyzing and accessing academic performance data. The system supports multiple user roles such as administrators, teachers, and students, each with specific permissions to access and manipulate data. Educators can assessments, exams, or assignments directly into the system, which then securely stores the data in a centralized database. The System can automate calculations for grades, averages, and other performance metrics based on predefined formula or customizable grading schemes. It provides tools for analyzing academic performance trends, generating reports, and visualizing data to aid decision-making processes for educators and administrators. The system ensures accessibility across different devices and browsers while implementing robust security measures to protect sensitive student data. A Web-based Mark Management System offers educational institutions a comprehensive solution to manage academic marks effectively, enhance communications, and facilitate data-driven decisions-making processes to support student success.

## I. INTRODUCTION

In today's digital era, the management and tracking of student performance are crucial tasks for educational institutions. Traditional methods of mark management, relying on paper-based records or standalone software, often prove to be inefficient, prone to errors, and lack accessibility. To address these challenges and streamline the process of managing student marks, we propose the development of a web-based mark management system. Our mark management system aims to provide a comprehensive solution for educators to efficiently record, track, and analyze student performance data. By leveraging the power of web technologies, our system will offer accessibility from any internet-enabled device, eliminating the constraints of physical location and enabling seamless collaboration among teachers, students, and administrators. The web-based mark management system aims to provide a user-friendly platform for managing marks, grades, and academic performance. It will serve as a centralized hub for teachers, students, and administrators to input, view, and analyze academic data. Implement secure user authentication to ensure only authorized users (teachers, students, administrators) can access the system. Define different user roles (e.g., teacher, student, administrator) with corresponding permissions. Teachers can input marks, students can view their grades, and administrators can manage users and system settings. Teachers can input marks for various assessments, including exams, quizzes, assignments, and projects. The system should support different grading scales (e.g., numerical, letter grades). Automatically calculate overall grades based on weighted averages of individual assessments. Allow customization of weightage for different assessment types. Provide students with a dashboard where they can view their grades, performance trends, and feedback from teachers. Offer teachers a dashboard to input marks, track student progress, and generate reports. Teachers should also be able to communicate feedback to students through the system. Administrators can manage user accounts, reset passwords, and configure system settings such as grading scales and course information. Implement data visualization tools to analyze class performance, identify trends, and generate insights for teachers and administrators.

The implementation of this software would involve a number of steps, including:

**Requirements gathering:** Identifying the purpose and goals of the web application, understand the needs and expectations of stakeholders such as teachers, students, administration, and possibly parents.

**System design:** Define the overall architecture of the application including frontend, backend, and database components and also the database schema to store every year graduate student marks in attendance, internal, external and overall marks can be calculated in automatically.

**Development:** Implement the Frontend using HTML and develop the backend a using server side language and web framework like MYSQL.

**Testing:** Test for performance, scalability, and security vulnerabilities.

**Deployment:** Set up hosting environment using cloud services like AWS, Google Cloud, or Azure Configure servers, databases, and other infrastructure components.

**Maintenance:** Continuously monitor and maintain your system to ensure it remains secure and performs well. Update it regularly based on user feedback and changing requirements.

## II. EXISTING SYSTEM

The Existing system for the primary problems faced by educational institutions without a dedicated web-based mark management system the educators spend a considerable amount of time manually entering marks into spreadsheets or paper-based records, leading to inefficiencies, data duplication, and increased likelihood of errors. Storing sensitive student information in spreadsheets or paper-based records raises security concerns regarding unauthorized access, data breaches, and compliance with data protection regulations.

## III. PROPOSED SYSTEM

The Proposed system for a mark management system a user-friendly interfaces for educators to input marks quickly and accurately, reducing manual effort and minimizing errors. A secure centralized database to store academic marks and related information, ensuring data integrity and accessibility from anywhere at any time. Integration with existing academic system (LMS) to streamline workflows and enhance interoperability. Therefore, the development of a web-based Mark Management System will address these challenges, improve efficiency, enhance collaboration, and empower educational stakeholders with actionable insights to support student success.

### 3.1 BASIC WORKING

A web application mark management system is a software platform that facilitates the storage, retrieval, and management of student marks and related data using a web-based interface. It typically involves a backend database (such as MySQL) to store information about students, subjects, and marks, a server-side application (e.g., using Flask in Python) to handle data processing and business logic, and a frontend interface (using HTML, CSS, and JavaScript) to enable users to interact with the system, such as adding new students, subjects, and marks, and retrieving student marks.

### 3.2 DESIGN METHODOLOGY

Design methodology refers to a structured approach used to plan, develop, and implement systems or solutions. It involves a series of steps and techniques to ensure the final product meets specified requirements and goals. Design methodologies provide a framework for problem-solving, creativity, and efficiency throughout the development process. Key components often include:

**Problem Definition:** Clearly identifying the problem or need.

**Research and Analysis:** Gathering information, analyzing data, and understanding constraints and requirements.

**Conceptual Design:** Generating ideas and potential solutions.

**Detailed Design:** Developing detailed plans, specifications, and models.

**Prototyping and Testing:** Creating prototypes and testing them to identify issues and improvements.

**Implementation:** Developing and deploying the final solution.

**Evaluation and Iteration:** Reviewing the outcome, making necessary adjustments, and refining the solution.

Design methodologies can vary depending on the field (such as engineering, software development, or architecture) and specific project needs, but they all aim to deliver effective and efficient solutions through a systematic process

IV. SYSTEM ARCHITECTURE

The basic architecture is given below:

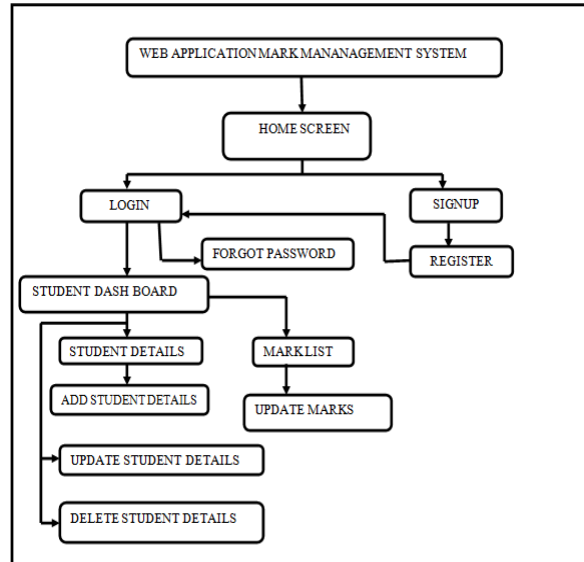


Fig-1: Architecture Diagram

4.1 DFD DIAGRAM

A data flow diagram (DFD) for a web application mark management system illustrates the flow of data within the system. Here's a basic definition:

A data flow diagram for a web application mark management system outlines the various processes, data stores, and data flows involved in managing marks or grades within the application. It typically includes entities such as students, teachers, administrators, and the system itself. The diagram visually represents how data moves between these entities, showing inputs, processes, outputs, and storage points. This helps to understand the overall functioning of the system and how data is processed and stored throughout different stages.

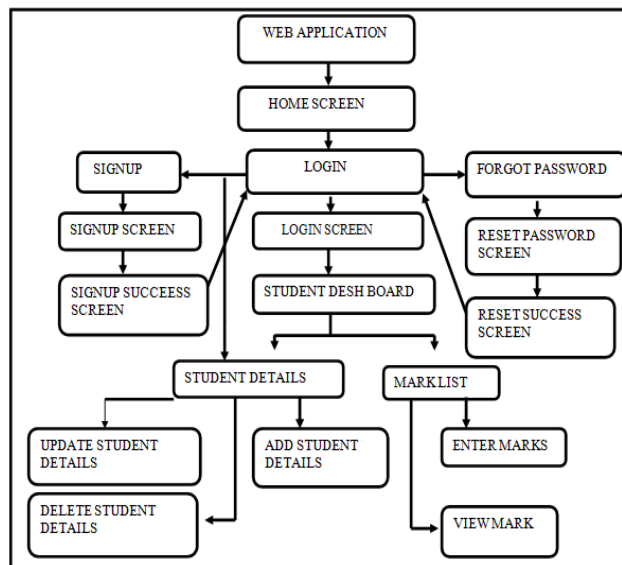


Fig-2: Data flow diagram

## V. IMPLEMENTATION

Developing a web application mark management system requires careful consideration of various components to ensure a seamless user experience and robust functionality. Here's a concise outline of the system implementation process for a web application mark management system:

The implementation of a web-based Mark Management System involves the integration of various technologies to handle user interfaces, data storage, and business logic.

Implementation refers to the process of executing a plan, model, or design to create a functional system or solution. It involves the practical application of ideas, methods, and resources to bring a project from concept to reality. Key aspects of implementation typically include:

**Preparation:** Setting up necessary resources, tools, and environments.

**Execution:** Carrying out the tasks and activities defined in the plan or design.

**Testing:** Verifying that the implementation works as intended and meets specified requirements.

**Deployment:** Making the system or solution available for use by end-users.

**Maintenance and Support:** Providing ongoing support and making necessary updates or improvements.

Implementation is a critical phase in project development, where theoretical plans and designs are transformed into operational systems or products.

## VI. RESULTS

### Create A Home Page

The home page of a mark management system is the primary landing page that users encounter after logging in. It offers a user-friendly interface that provides an overview of the system's features, displays relevant user-specific information, and facilitates easy navigation to different sections such as mark entry, report generation, student profiles, and system administration.

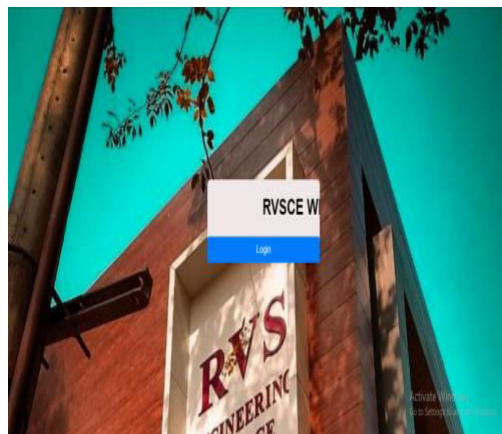


Fig-3: Home Page

### Create A Login Page

A login page is an interface that allows users to enter their credentials (username and password) to gain access to a web application. For a mark management system, the login page serves as a secure gateway where users can authenticate their identity to access and manage academic records, grades, and other sensitive information.

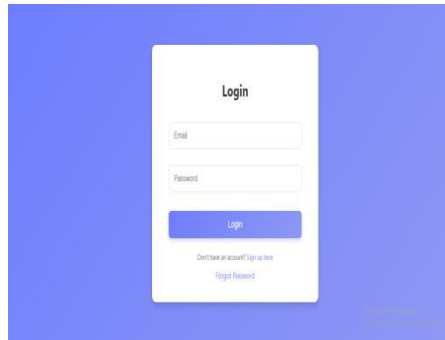


Fig-4: Login Page

### Create A Signup Page

A signup page is a web interface that allows new users to create an account within the mark management system. It typically includes fields for entering user details such as username, password, email, and other relevant information. The signup page ensures that new users are properly registered in the system with the necessary credentials to access and utilize the system's features.

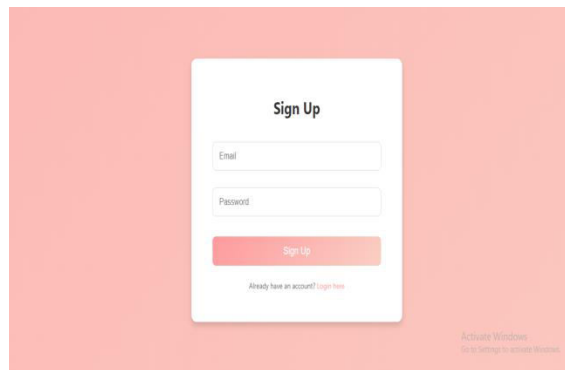
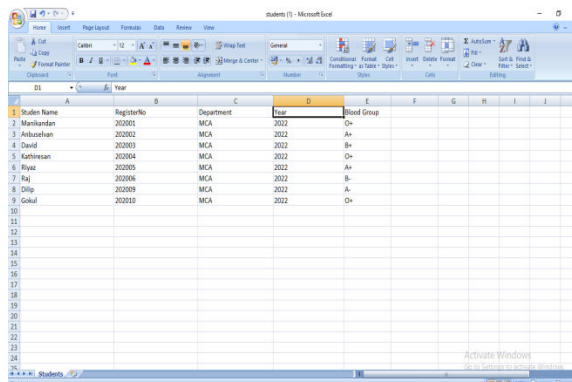


Fig-5: Signup Page

### Student Details

A student details page is a dedicated interface within a mark management system that provides comprehensive information about an individual student. This page allows authorized users (such as teachers, administrators, and the student themselves) to view and manage various aspects of the student's academic records, personal information, and other relevant details.

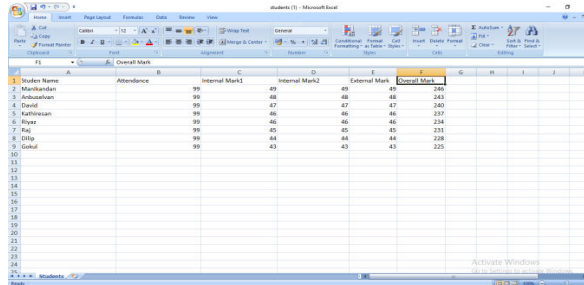


Sl	Student Name	RegisterNo	Department	Year	Blood Group
1	Manikandan	202001	MCA	2022	O+
2	Anshukhale	202002	MCA	2022	A+
3	David	202003	MCA	2022	B+
4	Karthresan	202004	MCA	2022	O+
5	Rajeev	202005	MCA	2022	A+
6	Raj	202006	MCA	2022	B-
7	Dilip	202009	MCA	2022	A-
8	Geetha	202010	MCA	2022	O+
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					

Fig-6: Student Details

### Mark List

A mark list page is an interface within a mark management system that displays the detailed marks or grades of a student across various subjects and assessments. This page allows students, teachers, and administrators to view and analyze the student's academic performance over a specified period, such as a term or academic year.



Student Name	Attendance	Internal Mark1	Internal Mark2	External Mark	Grand Mark
Mankundan	99	49	49	49	246
Abhishek	99	48	48	48	243
David	99	47	47	47	240
Karthikeyan	99	46	46	46	237
Riya	99	46	46	46	237
Raj	99	45	45	45	225
Uthp	99	44	44	44	220
Gokul	99	43	43	43	215

Fig-7: Mark List

### VII. FUTURE SCOPE

Future enhancements for the mark management system can significantly bolster its functionality and user experience. One critical area of improvement is the implementation of advanced analytics and reporting features, which would allow for data visualization, customizable reports, and predictive analytics to better understand student performance trends and identify those needing support. Ensuring mobile compatibility through a responsive design and potentially developing dedicated mobile apps for Android and IOS will make the system more accessible on various devices. Security can be enhanced with advanced encryption, role-based access control, and two-factor authentication to safeguard sensitive student data. Integrating the system with other educational platforms like Learning Management Systems (LMS) and School Information Systems (SIS) will streamline data flow and ensure consistency across all platforms. Automated notifications via email, SMS, and in-app alerts can keep users informed about critical updates and deadlines. To enhance user experience, personalized dashboards for different roles and a feedback mechanism for continuous improvement are essential. Additional functionalities such as assignment and homework management, attendance tracking, and communication tools will make the system a more comprehensive solution for educational institutions, improving efficiency and supporting a better educational experiences.

### VIII. CONCLUSION

The development of the web application for mark management system using HTML has been a significant step towards streamlining the process of handling student marks in an educational institution. This system provides a robust platform for teachers and administrators to efficiently manage, update, and retrieve student grades, ensuring accuracy and ease of use. Key benefits of this web application include: User-Friendly Interface: The application leverages the simplicity and accessibility of HTML to provide a clean and intuitive interface for users. This makes it easy for users of all technical levels to navigate and operate the system effectively. Efficiency in Data Management: By digitizing the mark management process, the application reduces the time and effort required for entering, calculating, and storing student marks. This leads to increased efficiency and allows educators to focus more on teaching rather than administrative tasks. Real-Time Updates and Accessibility: The web-based nature of the application ensures that data can be updated in real-time and accessed from anywhere with an internet connection. This enhances the responsiveness and flexibility of the educational institution in managing student information. Accuracy and Consistency, Automated calculations and standardized data entry processes minimize the risk of human error, ensuring that student marks are recorded accurately and consistently.

### REFERENCES

1. Jon Duckett, "Design and Build websites", Wiley Publishing, Inc, 1<sup>st</sup> Edition, 2011, ISBN:978-1118008188.
2. Jennifer Robbins, "Learning Web Design", O'Reilly Media, Inc, 5<sup>th</sup> Edition, 2018, ISBN:978-1491960202.
3. Mathew MacDonald, "HTML5", O'Reilly Media, Inc, 2<sup>nd</sup> Edition, 2013, ISBN:978-1449363260.
4. Elizabeth Castro and Bruce Hyslop, "HTML and CSS: Visual QuickStart Guide", Inc, 8<sup>th</sup> Edition, 2018.
5. Andry Harris, "HTML5 and CSS3 All-in-one For Dummies", Inc 3<sup>rd</sup> Edition, 2014.



INTERNATIONAL  
STANDARD  
SERIAL  
NUMBER  
INDIA



# INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN COMPUTER & COMMUNICATION ENGINEERING

 9940 572 462  6381 907 438  [ijircce@gmail.com](mailto:ijircce@gmail.com)



[www.ijircce.com](http://www.ijircce.com)

Scan to save the contact details