Student Result Management System

A Report Submitted
In Partial Fulfillment
for award of Bachelor of Technology

for
Web Technologies (BCSE0555)

In
COMPUTER SCIENCE AND ENGINEERING

By

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Under the Supervision of

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DECLARATION

We hereby declare that the work presented in this report was carried out by us. We have not submitted the matter embodied in this report for the award of any other degree or diploma of any other University or Institute.

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CERTIFICATE

Certified that **Himanshu Pandey** (Roll No: 23013301000101), **Drishay Chauhan** (Roll No: 23013301000084) and **Durga Maddheshiya** (Roll No: 2301330100085), has carried out the Web Technologies (BCSE0555) minor project work presented in this Project Report at **Noida Institute Of Engineering and Technology, Greater Noida** in partial fulfilment of the requirements for the award of **Bachelor of Technology**, **Computer Science and Engineering** from Dr. APJ Abdul Kalam Technical University, Lucknow under our supervision.

Signature	Signature
Mr. Surya Prakash Sharma	Dr. Kumud Saxena
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ACKNOWLEDGEMENT

We would like to express our sincere gratitude to **Mr. Surya Prakash Sharma** for his invaluable guidance, encouragement, and constant supervision during the development of our **Web Technology Project – Student Result Management System**. His expertise, constructive feedback, and support throughout this project have been instrumental in helping us achieve our objectives successfully.

We also extend our heartfelt thanks to our respected **Head of Department (HOD)** for their continuous motivation and encouragement, which inspired us to put in our best efforts.

Finally, we are grateful to our faculty members, peers, and everyone who directly or indirectly contributed to the successful completion of this project.

ABSTRACT

The **Student Result Management System (SRMS)** is a comprehensive web-based application designed to streamline and automate the process of maintaining and managing academic records of students. In traditional institutions, result management is often carried out manually, making it prone to errors, delays, and inefficiencies, especially when dealing with a large number of students and courses. This project aims to overcome these challenges by offering a secure, scalable, and user-friendly digital platform for effective result management.

The system has been implemented using **PHP** for server-side scripting, **MySQL** as the relational database for structured data storage, and **Bootstrap** to provide a responsive and visually appealing frontend design. To ensure secure usage, a robust **user authentication module** has been integrated, allowing only authorized users to access and modify data. Each registered user is provided with a personalized dashboard to manage their records, ensuring privacy and security of information.

Key features of the application include the ability to **add, update, delete, and search student records** with ease. To improve interoperability and data portability, the system supports **XML synchronization**, allowing academic data to be shared or exported to other platforms in a standardized format. The modular design of the application also ensures that the system is highly adaptable and can be extended to incorporate advanced features in the future.

The SRMS has undergone rigorous testing for **accuracy, reliability, usability, and performance**. The results indicate that the system successfully achieves its intended objectives by minimizing errors, reducing administrative workload, and providing instant access to student results. Beyond its immediate application, the project lays the groundwork for future enhancements such as **result analytics, automated grading systems, statistical performance evaluation, and integration of export features in PDF/Excel formats**.

In conclusion, this project demonstrates a practical and efficient approach to modern academic record management. It not only addresses the drawbacks of manual result processing but also contributes towards the **digital transformation of educational institutions**, thereby enhancing transparency, accessibility, and efficiency in academic administration.

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CHAPTER 1

1.1 INTRODUCTION

Education is one of the most significant sectors in society, and with the growth of technology, digital systems have become essential for managing academic records effectively. Traditional methods of recording student results using registers or spreadsheets often lead to inefficiencies, errors, and difficulties in accessing data.

The Student Result Management System (SRMS) is a web-based application developed using PHP, MySQL, and Bootstrap. It is designed to automate the management of student records, including student details, courses, and marks. The system also provides authentication features, ensuring that each user manages their own data securely. Additionally, it incorporates XML synchronization, enabling easy export and integration with other platforms.

1.1.1 Motivation

- Manual result management is time-consuming and error-prone.
- Increasing student strength in educational institutions requires scalable solutions.
- Teachers and administrators need quick access to student performance data.
- A secure, web-based system ensures data integrity, multi-user support, and accessibility.

1.1.2 System Overview

The Student Result Management System is built around three primary modules:
Authentication, Student Management (CRUD), and XML Synchronization.

1.1.2.1 Authentication

- Signup and Login system with password hashing using bcrypt.

- Each user has a private dashboard.
- Prevents unauthorized access via session-based login management.

1.1.2.2 Student Management (CRUD)

- **Add, Edit, Delete, and Search** student records.
- Each student entry contains Roll Number, Name, Course, and Marks.
- Search functionality allows filtering students by roll number, name, or course.

1.1.2.3 XML Synchronization

- All database changes are mirrored in an **XML file (student_data.xml)**.
- Ensures interoperability with other platforms and supports data portability.

1.2 OBJECTIVE AND SCOPE

Objectives:

1. To provide an efficient digital platform for managing student results.
2. To eliminate redundancy and manual errors in traditional result systems.
3. To ensure multi-user support with secure authentication.
4. To enable portability of data through XML export.
5. To make the system scalable and user-friendly.

Scope:

- Suitable for **schools, colleges, and training institutes**.
- Can be extended to include **grading systems, analytics, and PDF exports**.
- Provides a foundation for future integration with **Learning Management Systems (LMS)**.

CHAPTER 2

LITERATURE REVIEW:

2.1 Related Work

Several systems exist for managing student information, ranging from manual registers to modern ERP solutions. Traditional systems rely heavily on paperwork and spreadsheets, which lack scalability and security. ERP-based solutions are powerful but often expensive and complex for smaller institutions.

2.2 Gap Analysis

- Existing systems are often centralized, limiting portability.
- Lack of user-specific dashboards in simple implementations.
- Many systems lack real-time synchronization with XML/other formats.
- Our SRMS addresses these gaps by being lightweight, secure, extensible, and portable.

CHAPTER 3

REQUIREMENT:

3.1 Functional Requirements

1. User Authentication (signup/login/logout).
2. Secure password storage with hashing.
3. CRUD operations for student records.
4. Search functionality for roll number, name, or course.
5. XML file generation for all records.

3.2 Non-Functional Requirements

- **Usability:** Simple Bootstrap interface.
- **Scalability:** Supports multiple users without conflicts.
- **Security:** Session management, password hashing.
- **Portability:** Data export via XML.
- **Reliability:** Database transactions with error handling.

3.3 System Requirements

- **Software:** XAMPP (PHP 8+, MySQL), Browser (Chrome/Edge/Firefox).
- **Hardware:** 2 GB RAM, 500 MB storage (minimum).
- **OS:** Windows/Linux/MacOS.

CHAPTER 4

4.1 Implementation

The system is implemented using:

- Frontend: HTML, CSS, Bootstrap 5.
- Backend: PHP with MySQLi (prepared statements).
- Database: MySQL with two main tables: users and students.
- XML Sync: DOMDocument in PHP to generate student_data.xml.

Modules:

1. Signup/Login: Secure authentication.
2. Dashboard: User-specific student list.
3. Add/Edit/Delete: CRUD with database + XML sync.
4. Search: Keyword-based filtering.

4.2 Testing

Test Cases:

1. Signup/Login
    - Valid user credentials → Success.
    - Invalid credentials → Error message.
2. Add Student
    - Valid input → Stored in DB + XML.

- Missing field → Error alert.

3. Edit Student
   - Changes update DB + XML.
4. Delete Student
   - Record deleted in DB + XML updated.
5. Search Function
   - Correct results returned for keywords.

Result:

System passed all functional and non-functional test cases successfully.

CHAPTER 5

Conclusion

The Student Result Management System provides a lightweight, secure, and extensible solution for managing academic records. It eliminates inefficiencies of manual systems, provides role-based dashboards, and ensures data portability with XML export. The system is suitable for small to medium institutions seeking a reliable digital solution.

Future Work

- Integration of grading system (A, B, C, etc.).
- Analytics and visualization (charts for marks distribution).
- Export results as PDF/Excel reports.
- Mobile-friendly responsive design.
- Integration with online learning platforms.

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APPENDICES

(□ **Appendix A:** Database Schema (users, students).

□ **Appendix B:** Sample student_data.xml file.

□ **Appendix C:** Screenshots of login, dashboard, CRUD operations.

□ **Appendix D:** Test case table with input/output.

CURRICULUM VITAE

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DR

SUMMARY

I am an engineering student in my third year of BTech in Computer Science & Engineering with practical experience in manual testing and a passion for UI/UX evaluation. Eager to enhance my skills in frontend development and contribute to tech and management roles in the future. Recognized for my adaptability and problem-solving abilities, I enjoy debugging and ensuring optimal user experiences across products

EXPERIENCE

Manual Tester (Freelance)

Confidential Startup

03/2025 - 05/2025 Remote

A startup focused on digital solutions

- Tested official website and web app for UI/UX, responsiveness, and functionality
- Identified, reported, and sometimes resolved bugs and interface issues
- Collaborated with developers and designers to improve product quality
- Provided actionable suggestions to enhance user experience
- Later contributed to the frontend development team with minor fixes and improvements

EDUCATION

BTech in Computer Science & Engineering

Noida Institute of Engineering & Technology (NIET)

07/2023 - 05/2027 Greater Noida

12th (Science)

Assisi Convent School

05/2011 - 05/2023 Noida

CERTIFICATION

ISTQB Foundation Syllabus

Self-paced study of the ISTQB Foundation Syllabus

Google Project Management Certificate (Coursera)

Currently enrolled in a course to learn project management methodologies

KEY ACHIEVEMENTS

Coding Competition Award

Winner of a college-level coding competition

LANGUAGES

English
Native

Hindi
Native

SKILLS

C/C++ CSS Git GitHub HTML ISTQB Java JavaScript Manual Testing Microsoft Excel Microsoft Power Point Python SDLC Unity Versatile Gmail

PROJECTS

Tic Tac Toe & Rock Paper Scissors, Personal Portfolio Website, Unity Games

Personal projects aimed at enhancing technical skills and knowledge

- Basic frontend projects to strengthen HTML, CSS, and JS concepts
- Currently developing a personal portfolio website to showcase projects and skills
- Built two prototypes while exploring game development in 3rd year