Project Title: STUDENT MANAGEMENT SYSTEM

Synopsis Submitted

To

Maharishi Markandeshwar (Deemed to be University)

In partial fulfillment of the requirement for the award of the degree of

Bachelor of Technology

In

Computer Science and Engineering

Name of project Incharge:

Dr. Naveen Malik

Submitted by:

Shubham Kumar(11233004)

Vikash Kumar(11232947)

Vishal Kumar(11232905)

Vanshik (11233006)

Maharishi Markandeshwar Deemed to be University

(Computer Science & Engineering Department, M. M. Engineering College, Mullana, Ambala – 133207, Haryana, India)

(2024-2025)

ACKNOWLEDGEMENT

First and foremost I would like to thank the Lord Almighty for His presence and immense blessings throughout the project work.

I wish to express my heartfelt gratitude to Dr. Sandeep Goyal, Head of the Department, School of Computer Science & Engineering for much of his valuable support and encouragement in carrying out this work.

I would like to thank my internal guide Mr. Naveen Malik , for continually guiding and actively participating in my project, giving valuable suggestions to complete the project work.

I would like to thank all the technical and teaching staff of the MMDU CSE , who extended directly or indirectly all support.

CHAPTER-1

INTRODUUCTION,MOTIVATION TO WORK,PROBLEM , ORGANIZATION OF THE PROJECT,SUMMARY

INTRODUCTION:

Currently, we keep records on paper, but our student information system will be created and put into place to replace them, through a secure and better online user interface that has been applied properly and well.

The admin will have direct access to all aspects of a student's academic achievements, student data, notes, . The college administrator manages the cloud servers where all the data is stored, ensuring the highest level of security.

MOTIVATION TO WORK:

In the olden days, we used to have a record system to store the data (It may be from the Schools and Colleges in the form of Pen and Paper). This kind of recommendation will be secured for temporary purposes. Due to some natural calamities like floods or heavy rains, tsunamis, earthquakes, and maybe some kind of man-made activities like Fire Accidents, Short Circuits, etc will destroy the records in physical format.

To avoid these kinds of issues or problems, we will propose one new system which will store the student's data in a digital format. Our Student Management System will update the data in a form of a website and the admin will have the access to add or delete the student data. The website contains Student information, faculty details and additional information like class, marks, attendance, sessions, terms, etc. In this way, our project is going to provide additional security for the student data or information.

PROBLEM STATEMENT:

To offer an integrated system that tracks all academic-related activity for students, like everything as a service, for educational institutions. In general, the project concept can be compared to the SMS or Student Management System. It functions and behaves like

a tool that gives tasks while managing and monitoring student performance and activities using their data.

OBJECTIVES:

•Centralized Data Management: Provide a unified platform to store and manage student information, including personal details, academic records.

•To provide a proper registration channel to the student.

•To maintain all the account of student in the digital form enrollment up to the end of the study.

•To update the information that is essential to transmit to the users.

ORGANIZATION OF THE PROJECT:

We have faced some difficulties in our childhood and based on true events, we have come forward to propose one idea on the basis of the management of the data to avoid all those mistakes and problems for future purposes. So we decided to do a project and it helps the schools and college management to work effectively.

SUMMARY:

Finally, from this project, we hope at least a few schools and colleges will come ahead and update their student details and data with advanced technologies. Nowadays, most people want to learn some good and new stuff and are willing to implement it in their day-to-day lives. With the help of this project, there might be some chances of the data to make it as safe, and secure, also avoiding cyber crimes like Theft, Corrupting and Manipulation of the data, etc., being decreased to a greater and higher level. Hence, therefore this idea will bring some drastic and greater changes in the education department and keeping or providing security of the public data or information is really much important and crucial.

CHAPTER 2

CORE IDEA OF THE PROJECT, PROS & CONS OF THE EXISTING APPROACHES/METHODS, SUMMARY

CORE IDEA OF THE PROJECT:

The core idea of this project is to provide a solution to convert paper records into paperless i.e., digital records. This will reduce the consumption of paper and become environmentally friendly. Children will get aware of technology and its development.

PROS & CONS OF THE EXISTING APPROACHES/METHODS:

Pros:

•Better Utilization of Time & Resources.

•There's absolutely no need for maintaining files and papers.

•The system contains a simple and easy User Interface. Hence no prior knowledge and experience are required for the Users.

•Enhanced Productivity.

•Improved Inter-Relations Between Departments.

•Identifying & Improving Learning Gaps.

Student's Personal Safety

Cons:

User-Interface.

Absence and Lacking Good Internet Facility.

User's Device or System Requirements.

SUMMARY:

From the above mentioned the student management system should have a clean/fresh user interface and a proper security measure so that we make a better student management system. This helps the society and school/college department to come forward to take this initiative in the coming future.

CHAPTER 3

INTRODUCTION ,HARDWARE AND SOFTWARE REQUIREMENT,SPECIFIC PRODUCT REQUIREMENT,SUMMARY

INTRODUCTION:

The student management system needs many requirements that include hardware, software and security requirements.

HARDWARE AND SOFTWARE REQUIREMENTS:

Hardware requirements include SSD for smoothest performance, should have at least 2 GB of RAM for memory, Input devices for data entering and output devices like a monitor for checking and reviewing the data.

Software requirements include Front end and Back end tools along with database management tools.

SPECIFIC PRODUCT REQUIREMENTS:

•DATA REQUIREMENT

We need faculty and student data to be entered and saved in the database.

• FUNCTION REQUIREMENT

For the functioning of this project we need software and hardware requirements along with the required software installed for better function of this project.

•LOOK AND FEEL REQUIREMENT

We have a clean and simple User Interface for a better experience.

SUMMARY:

Student management system needs some requirements to fulfill the project to be completed. we need to provide the requirement for better working of the project to provide its best results.

CHAPTER 4
DESIGN METHODOLOGY

METHODOLOGY AND GOAL:

To offer an integrated system that tracks all academic-related activity for faculties and students, like everything as a service, for educational institutions.

FUNCTIONAL MODULES, DESIGN AND ANALYSIS:

Technologies that we used for front-end development: PYTHON(Tkinter).

Technologies that we used for back-end development: MYSQL.

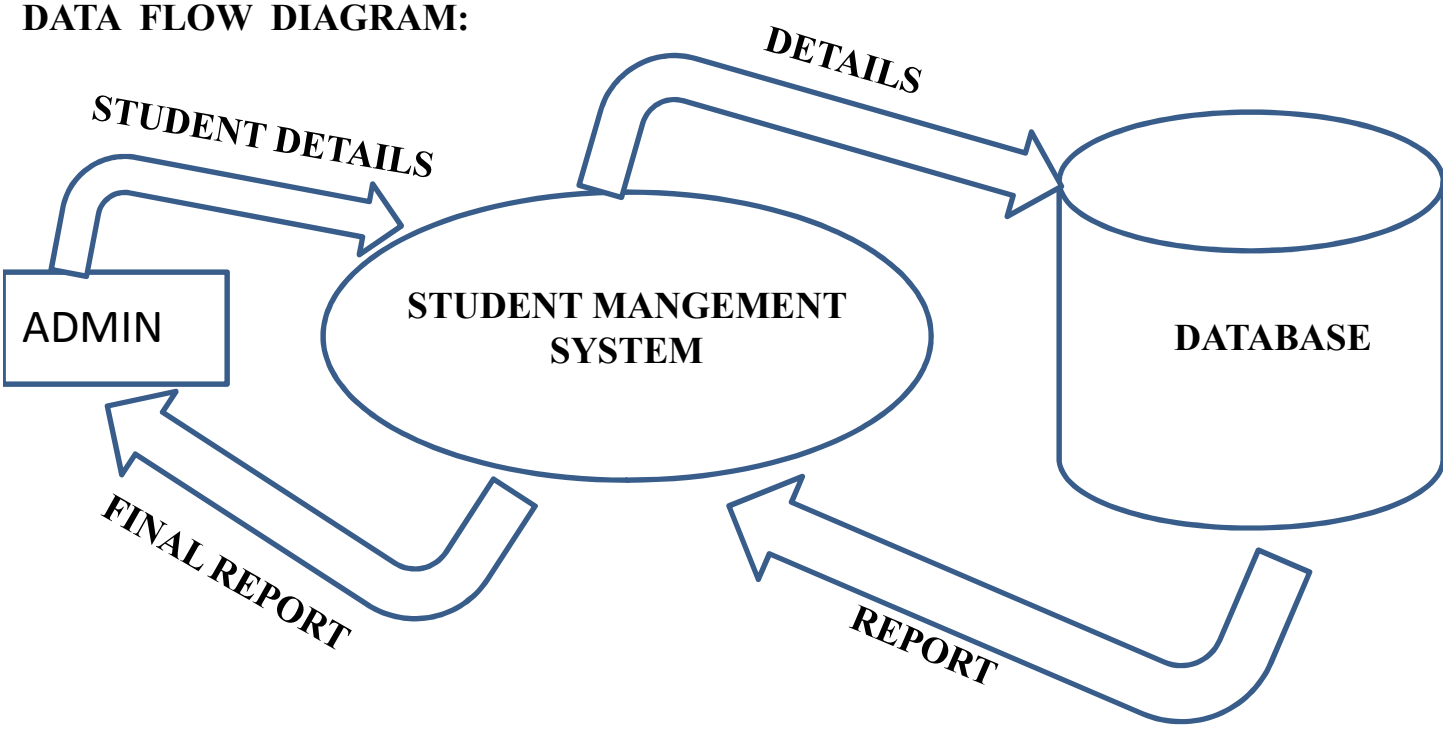
Modules we used for this project: pip, regex, cxfreeze, db-sqlite3, import, etc.

Analysis: First, With the help of front-end tools like PYTHON(Tkinter). Then we used MYSQL to develop back-end package to store data. MYSQL database will store the students information. Finally, the admin will login and he has the complete access to add or remove the data.

USER INTERFACE DESIGNS:

The User Interface that we created will be very easy to access and simple to view. Here is the output of our User Interface page.

DATA FLOW DIAGRAM:



CHAPTER 5

TECHANICAL IMPLEMENTATION AND ANALYSIS

OUTLINE:

We used some of the advanced technologies to gain more knowledge and attention towards the schools and college management.

Front-End:

We used python as a skeleton of our website. python provides the structure to the website. we added CSS (Cascading Style Sheets) to give some attributes like style, color, font-size, font-style, background color / image, etc.

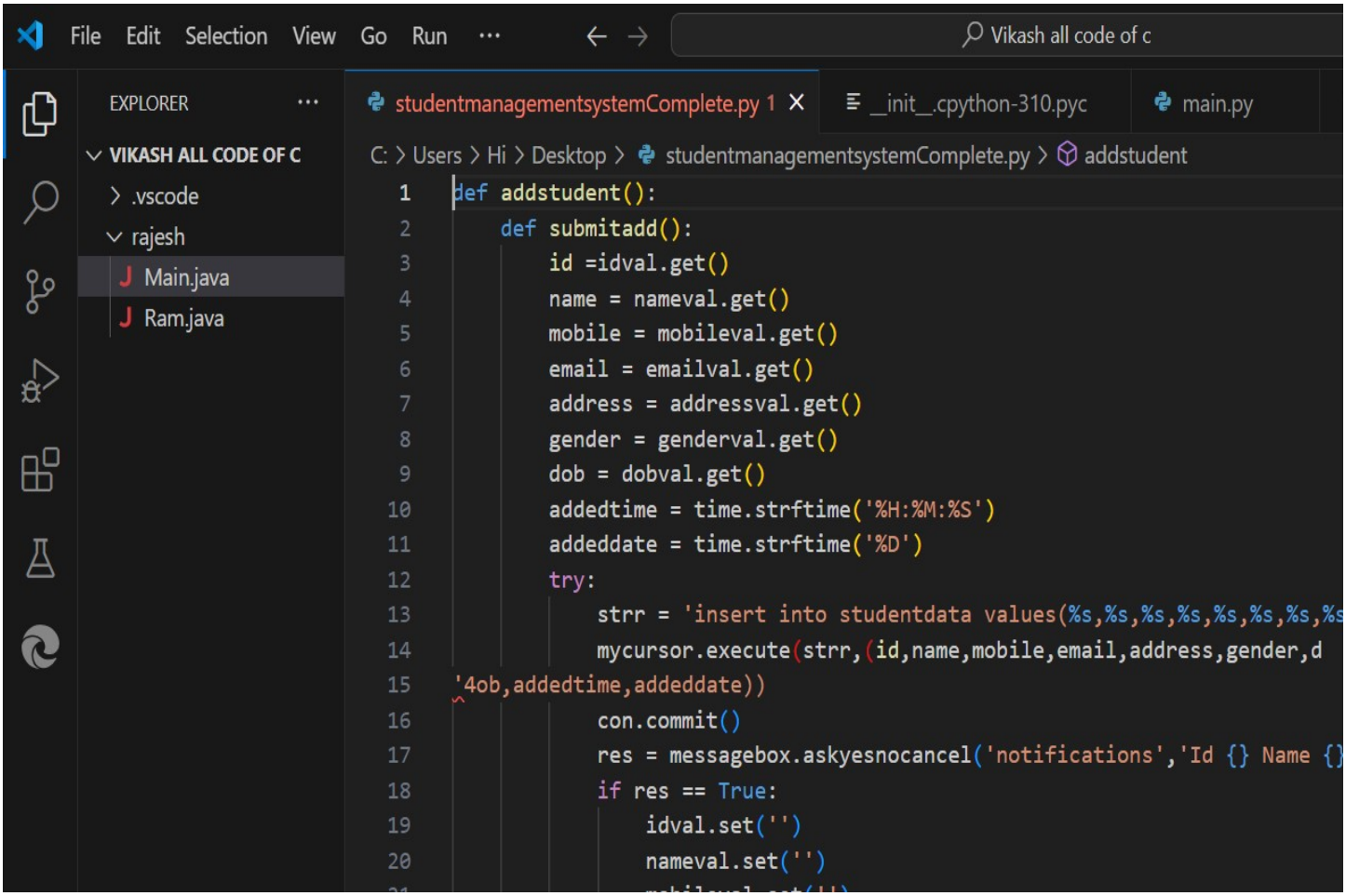
Back-End:

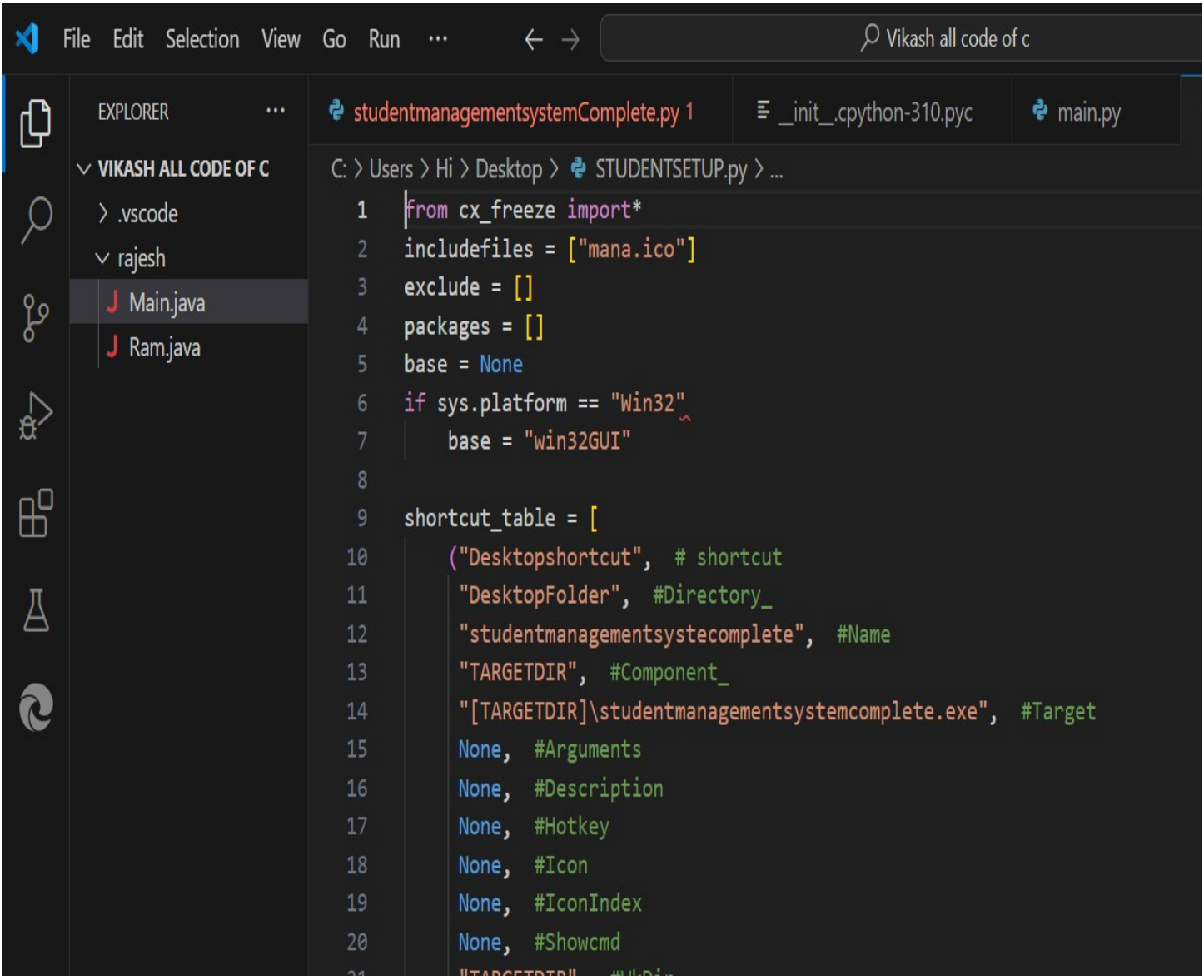
MYSQL is the key role for complete back-end development.

Server-side:

Only one technology will help to store the data. So, here MYSQL plays the most important role.

TECHNOLOGY CODING AND CODE SOLUTION:



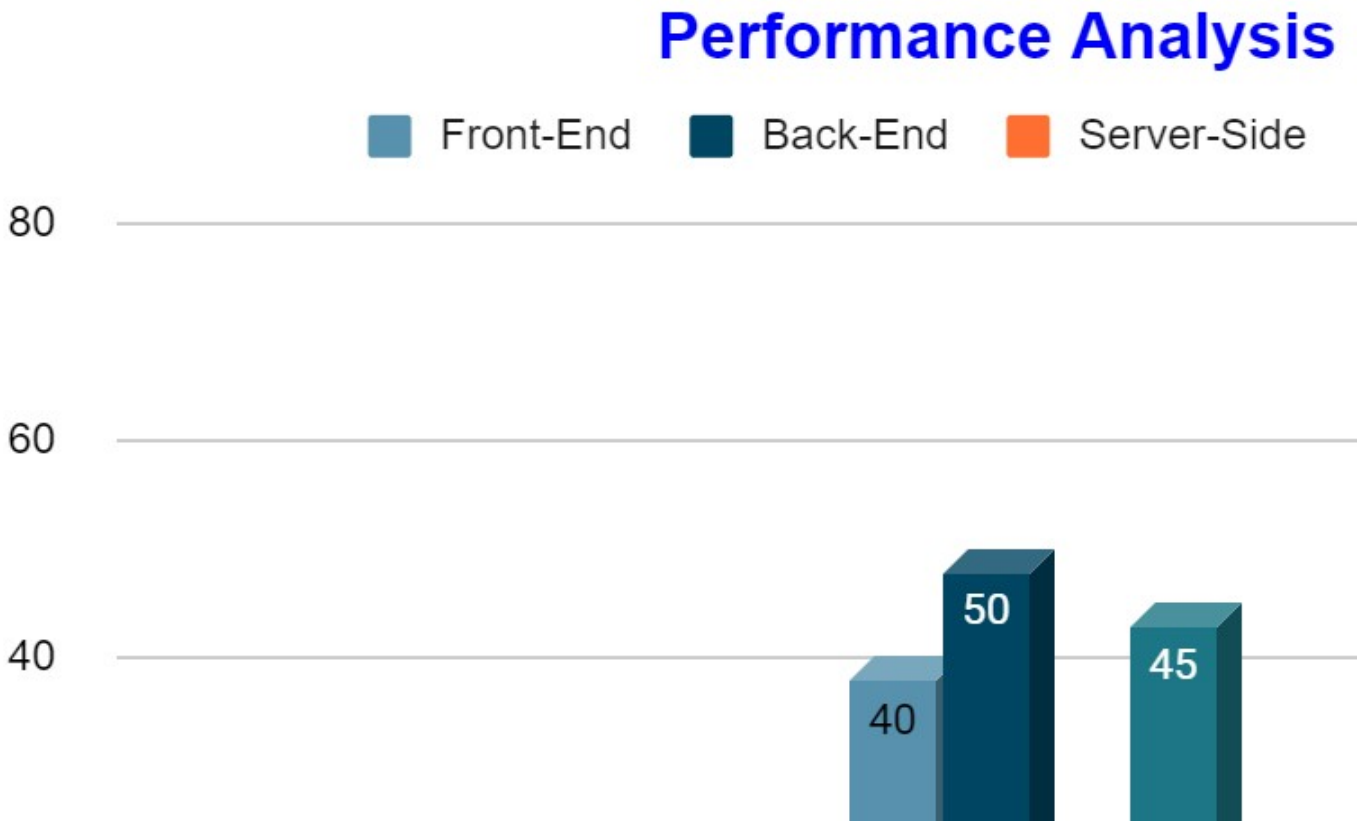


TEST AND VALIDATION:

First, we have taken a raw data of students biodata and the faculty biodata as a form of tables. Then we loaded the data into the MYSQLdatabase and it worked successfully.

Then we integrated it to the frontend as a website. It was able to display the student information in a correct manner.

PERFORMANCE ANALYSIS (GRAPHS, CHARTS):



SUMMARY:

Here, we have discussed in detail about the project, source codes, performance, layouts, color, styles and sizes, data entry, etc.

CHAPTER 6
PROJECT OUTCOME AND APPLICABILITY

OUTLINE:

The main aim of this project is to maintain and publish the complete information in a digital format and we have successfully completed this project with the help of our team or project members. Our aims and goals were matched exactly while working on this project.

KEY IMPLEMENTATION OUTLINE OF THE SYSTEM:

The implementation of using these advanced technologies like HTML, and CSS in the front-end of the tour website; Python as a key programming language along with the Javascript, and Django framework in the back-end development and finally SQLite is the database language that we used to gather and store the data.

SIGNIFICANT PROJECT OUTCOMES:

Yes, Our significant project output is exactly the same as what we expected at the beginning. Our main goal was to create a website that includes all the data regarding the student and the faculty. Hence, we have successfully created or developed a full stack project that is our Student Management System.

PROJECT APPLICABILITY ON REAL-WORLD APPLICATIONS:

Yes, we thought to share this project with the schools and colleges after making it successful. Initially, our thought was to provide the entire information in digital form. Now, after the completion of this project, We are feeling that our tasks were accomplished successfully. Hence, we are always willing to share this project with any of the school and college management.

INFERENCE:

Our team got official permission to gather the relevant information from open sources like Google, GitHub, etc. Finally, we shared our ideas with our supervisor and then we got official permission to do the project. Our team is thanking everyone who has supported us to do this project in a successful way.

CHAPTER7

CONCLUSIONS AND RECOMMENDATION

OUTLINE:

Hence, we are here to conclude our project. This project was designed for the sake of storing useful information about the student and faculty in the form of a database, and then linking it with the help of backend tools like MYSQL technologies. Finally, the combination of frontend and backend along with the server-side management helps us to fulfill the dreams of this project and thus we made this project a full-stack Student Management System.

LIMITATION/CONSTRAINTS OF THE SYSTEM:

We can add only a limited number of students and faculties for this project.

The Student Management System project is completely done as an offline project.

There is a big obstacle that is to overcome in the connection of cloud services.

Everyone will do this project either as a frontend or backend development.

FUTURE ENHANCEMENTS:

- This software can be made for all OS.
- Higher security features can be included in this software.
- Program scheduling can be also be included in this software.
- WE INCLUDES :-

I. Hostel Management

II. Library Management

III. Attendance Management

IV. Id Card Generation

V. Student Fees Management

Etc……..

REFERENCES

Liu, Zhibing, Huixia Wang, and Hui Zan. "Design and implementation of student information management system." 2010 International symposium on intelligence information processing and trusted computing. IEEE, 2010.

Bharamagoudar, S. R., R. B. Geeta, and S. G. Totad. "Web based student information management system." *International Journal of Advanced Research in Computer and Communication Engineering* 2.6 (2013): 2342-2348.

Weaver, Debbi, Christine Spratt, and Chenicheri Sid Nair. "Academic and student use of a learning management system: Implications for quality." *Australasian journal of educational technology* 24.1 (2008).

Patel, Unnati A., and S. Priya. "Development of a student attendance management system using RFID and face recognition: a review." *International Journal of Advance Research in Computer Science and Management Studies* 2.8 (2014): 109-119.

Natek, Srečko, and Moti Zwilling. "Student data mining solution–knowledge management system related to higher education institutions." Expert systems with applications 41.14 (2014): 6400-6407.