MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

(A Govt. Aided UGC Autonomous & NAAC Accredited Institute Affiliated to RGPV, Bhopal)

Project Report

On

Result Publishing System

Submitted by:

Manish Khanal

0901CS191055

Kunal Rohitas

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Faculty Mentor:

Mr. Mir Shahnawaz Ahmad

Assistant Professor, Computer Science and Engineering

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE

GWALIOR - 474005 (MP) est. 1957

MAY-JUNE 2022

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On

Result Publishing System

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

BACHELOR OF TECHNOLOGY

in

COMPUTER SCIENCE AND ENGINEERING

Submitted by:

Manish Khanal

0901CS191055

Kunal Rohitas

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Faculty Mentor:

Mr. Mir Shahnawaz Ahmad

Assistant Professor, CSE Department

Submitted to:

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CERTIFICATE

This is certified that **Manish Khanal** (0901CS191055) has submitted the project report titled **Result Publishing System** under the mentorship of **Mir Shahnawaz Ahmad**, in partial fulfilment of the requirement for the award of degree of Bachelor of Technology in Computer Science and Engineering from Madhav Institute of Technology and Science, Gwalior.

07/05/22

Mr. Mir Shahnawaz Ahmad
Faculty Mentor
Assistant Professor
Computer Science and Engineering

09/05/2022

Dr. Manish Dixit
Professor and Head,
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Dr. Manish Dixit
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CERTIFICATE

This is certified that **Kunal Rohitas** (0901CS191052) has submitted the project report titled **Result Publishing System** under the mentorship of **Mr. Mir Shahnawaz Ahmad**, in partial fulfilment of the requirement for the award of degree of Bachelor of Technology in Computer Science and Engineering from Madhav Institute of Technology and Science, Gwalior.

09/05/22

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MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

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DECLARATION

We hereby declare that the work being presented in this project report, for the partial fulfilment of requirement for the award of the degree of Bachelor of Technology in Computer Science and Engineering at Madhav Institute of Technology & Science, Gwalior is an authenticated and original record of our work under the mentorship of **Mr. Mir Shahnawaz Ahmad, Assistant Professor,** Computer Science and Engineering.

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

Manish Khanal
0901CS191055
3rd Year
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MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

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ACKNOWLEDGEMENT

The full semester project has proved to be pivotal to our career. We are thankful to our institute, **Madhav Institute of Technology and Science** to allow us to continue our disciplinary/interdisciplinary project as a curriculum requirement, under the provisions of the Flexible Curriculum Scheme (based on the AICTE Model Curriculum 2018), approved by the Academic Council of the institute. We extend our gratitude to the Director of the institute, **Dr. R. K. Pandit** and Dean Academics, **Dr. Manjaree Pandit** for this.

We would sincerely like to thank our department, **Department of Computer Science and Engineering, for allowing** us to explore this project. We 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.

We am sincerely thankful to our faculty mentors. We am grateful to the guidance of **Mr. Mir Shahnawaz Ahmad**, Assistant Professor, CSE Department, for his continued support and guidance throughout the project. We are also very thankful to the faculty and staff of the department.

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ABSTRACT

The main objective of the project is to provide the examination result to the student in a simple way. This project is useful for students and institutions for getting the results in simple manner. By a result generator with semester, subject and marks is an application tool for displaying the results in the form pdf of mark sheet in a simple way. The system is intended for the student as well as teachers. And the privileges that are provided to teachers are to read and execute the result by providing user name and password for secure login and in case of student the login is available so they can access their mark sheet easily. The whole result analyser will be under the control of the teacher as the full privileges to read, write and execute the result. The student can download his/her result in a pdf format which then can be used easily anywhere.

Keyword: result, mark sheet pdf, privileges

सार

परियोजना का मुख्य उद्देश्य छात्र को परीक्षा परिणाम सरल तरीके से प्रदान करना है। सरल तरीके से परिणाम प्राप्त करने के लिए यह परियोजना छात्रों और संस्थानों के लिए उपयोगी है। परिणाम विश्लेषक द्वारा सेमेस्टर, विषय और अंकों के साथ परिणाम को मार्कशीट के रूप में प्रदर्शित करने के लिए एक सरल तरीका है। यह प्रणाली छात्रों के साथ-साथ शिक्षकों के लिए भी है और शिक्षकों को जो विशेषाधिकार प्रदान किए जाते हैं, वे हैं प्रोविडिन द्वारा परिणाम को पढ़ना और निष्पादित करना ।

कीवर्ड: परिणाम, मार्कशीट पीडीएफ, विशेषाधिकार

Chapter 1: PROJECT OVERVIEW

1.1 Introduction:

The "Student Result Publishing System" has been developed to override the problems prevailing in the current manual system. This web application is supported to eliminate and in some cases reduce the hardships faced by this existing system. Moreover this system is designed for the particular need of the college to carry out operations in a smooth and effective manner.

The application is reduced as much as possible to avoid errors while entering the data. It also provides error message while entering invalid data. No formal knowledge is needed for the user to use this system. Thus by this all it proves it is user-friendly. Student Result Publishing System, as described above can lead to error free, secure, reliable and fast management system. It can assist the user to concentrate on their other activities rather to concentrate on the record keeping. Thus it will help organization in better utilization of resources.

Every organization whether big or small has challenges to overcome and manage the information of Student Result for every semester and particular subject. These system will ultimately allow you to better manage resources.

1.2 Objective and Scope:

The purpose of this system is to change the existing system which when used by bunch of students failed and crashed, so our system never crashes and is highly scalable along with fault tolerance.

The scope of this project is this application will manage the information about various students enrolled in this course in different semester and subjects offered by the institute throughout the year.

The application will greatly simplify and speed up the result and mark sheet preparation and distribution process for students,

1.3 Project Features:

1. Provides the searching facilities based on various factors. Such as student, subject, semester and marks.
2. It manages the information of the result
3. Shows the marks of the students in respective semester in form a mark sheet and generate it in pdf format.
4. Editing, adding and updating or records is very easy to do.
5. Integration of all records of Semester.
6. Highly scalable.
7. Fault tolerant.
8. Provides zero downtime (which means if one instance goes down there are multiple instance ready to support).
9. Provide filter on student data.

1.4 System Requirement:

Computers running Microsoft Windows must meet the following minimum Hardware and Software requirements.

- Microsoft Windows 7/8/10 (32- or 64- bit)
- 4 GB RAM minimum, 8 GB RAM recommended
- 2 GB of available disk space minimum, 4 GB Recommended
- 320 * 480 minimum screen resolution and maximum supports all screen resolution.
- Latest version Google Chrome or any other browser.
- Internet connectivity

1.5 Technologies Used:

HTML: HTML describes the structure of a web page semantically and originally included cues for the appearance of the document.

JAVASCRIPT: It is used to make dynamic web pages interactive and provide online programs, including video games. The majority of website seem ploy it, and all modern web browsers support it without the need for plug-ins by means of a built-in JavaScript engine.

LIST OF FIGURES

CSS: Also knows as cascading style sheets is a style sheet language used for describing the presentation of a document written in a markup language. Although most often used to set the visual style of web pages and user interfaces written in HTML

REACT-JS: ReactJS is an open-source frontend JavaScript library which is used to build user interfaces and handle view layer for web and mobile applications. It fallows a component-based approach. Our project is thoroughly build on react and can also be called a react based project.

NODE-JS: Node-js is an open source, cross platform, back end JavaScript runtime environment that runs on the V8 engine and executes JavaScript code outside a web browser.

EXPRESS-JS: it is a backend web application framework for Node.js. It is designed for building web applications and API's.

MongoDB: MongoDb is a source available cross platform document oriented database program, used to build highly available and scalable internet applications. With its flexible schema approach it's very popular with developers.

DOCKER: Docker is an open source containerization platform. It enables developers to package applications into containers - standardized executable components combining application source code with the operating system (OS) libraries and dependencies required to run that code in any environment.

NGINX: NGINX is open source software for web serving, reverse proxying, caching, load balancing, media streaming, and more. It started out as a web server designed for maximum performance and stability.

CHAPTER 2: LITERATURE REVIEW

PAPER: Web-based Student Result Management System

AUTHORS: Mohammad Gulam Lorgat

ANALYSIS: The current research aims at creating a web-based student result management system, reducing time, effort and improving security. The research results in the development of a multi-user system, based on web technology with architectural pattern and developed using Java programming language with Apache Tomcat Server and MySQL Database Management System support.

PAPER: Student Information Report System with SMS (SIRS) in 2016

AUTHORS: Isbudeen Noor Mohamed, Ahmad Tasnim Sidiqui, Syed Ajaz, S Mohamed Idhris

ANALYSIS: The proposed system is an application software and which has an intention to begin a conductive and direct interchanging the statistics in a secure platform to coalesce with students, faculties and the college/school administration. The student can check their results through an SMS sent to the student/parent's contact numbers.

Although such type of application is widely been used by different institutions throughout the world including our college MITS as well, the main difference our project offers is that it never crashes which we are proud to say that we have built such a project that can be highly scalable and through its multiple instances feature we implemented it can provide a seamless output to the user without them worrying about the site being crashed due to heavy load on server.

Chapter 3: PRELIMINARY DESIGN

In this phase, the system is designed at block level. The blocks are created on the basis of analysis done in the problem identification phase. Different blocks are created for different functions emphasis is put on minimising the information flow between blocks. Thus all activities which require more information are kept in one block.

3.1: Actions performed

The Faculty can do the following actions

1. Login
2. Views personal details
3. Create, delete and update student profile
4. Updates Student marks.
5. Logout

The Student can do the following actions

1. Enter Enrolment Number
2. Login using OTP
3. Get Result / Download Mark sheet
5. Logout.

3.2 Architecture Design

In the usual architecture design used in applications like this does not have a load balancer and multiple instances of server to make it more scalable but the web application we designed offer the exact same feature which is described using the fig 3.2 below.

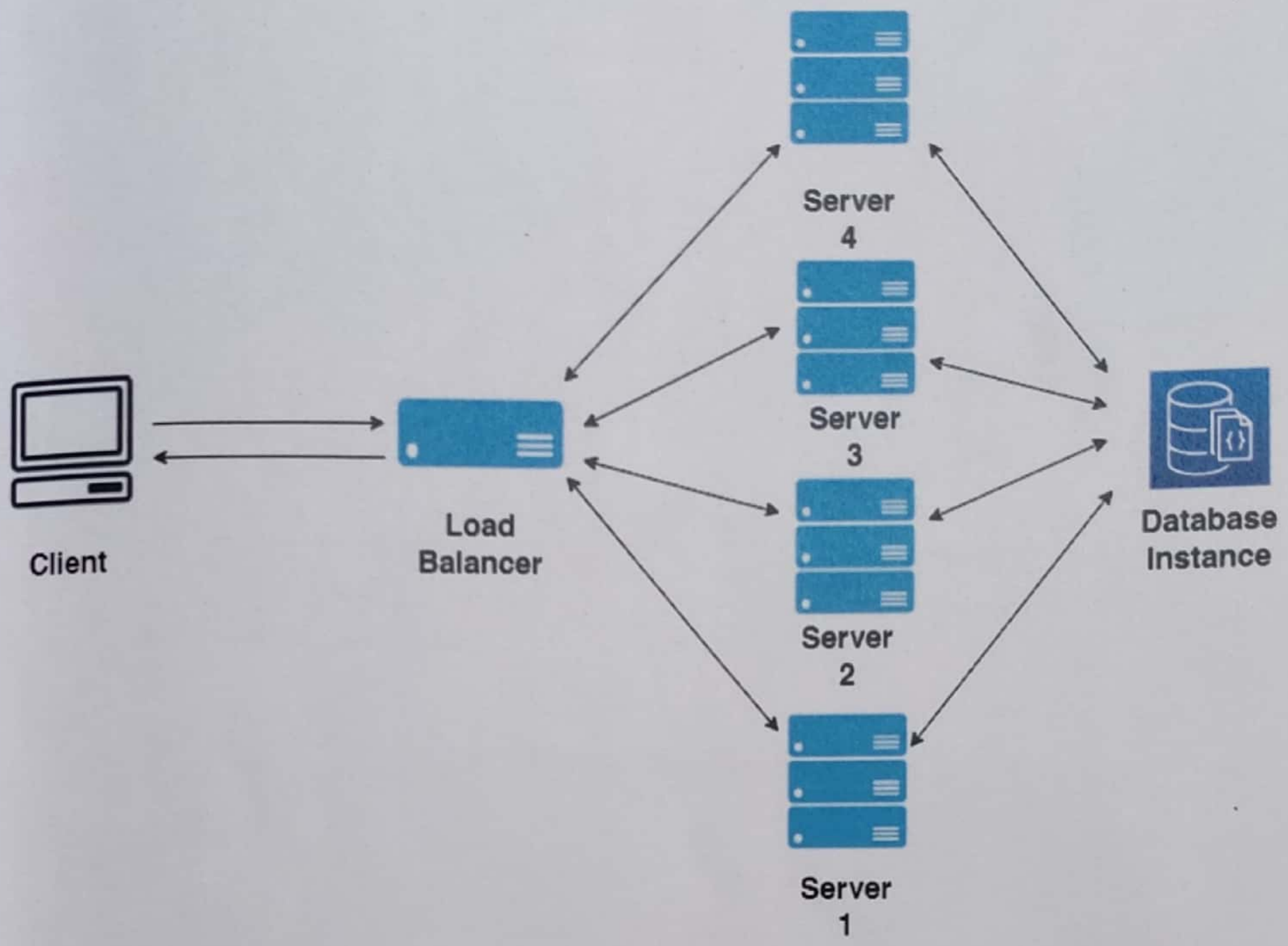

Fig 3.1 Architecture Design

3.3 Data Flow Diagram

A data flow diagram is a graphical representation of the flow of data through an information system. On a DFD data items flow from an external data source or an internal data source to an internal data store or an external data sink, via an internal process. It is a common practice to draw a context level data flow diagram first which shows the interaction between the system and external agents, which act as data source and data sinks. On the DFD the system interactions with the outside world are modelled purely in terms of data flows across the system boundary. The context diagram shows the entire system as a single process and gives no clues as to its internal organization.

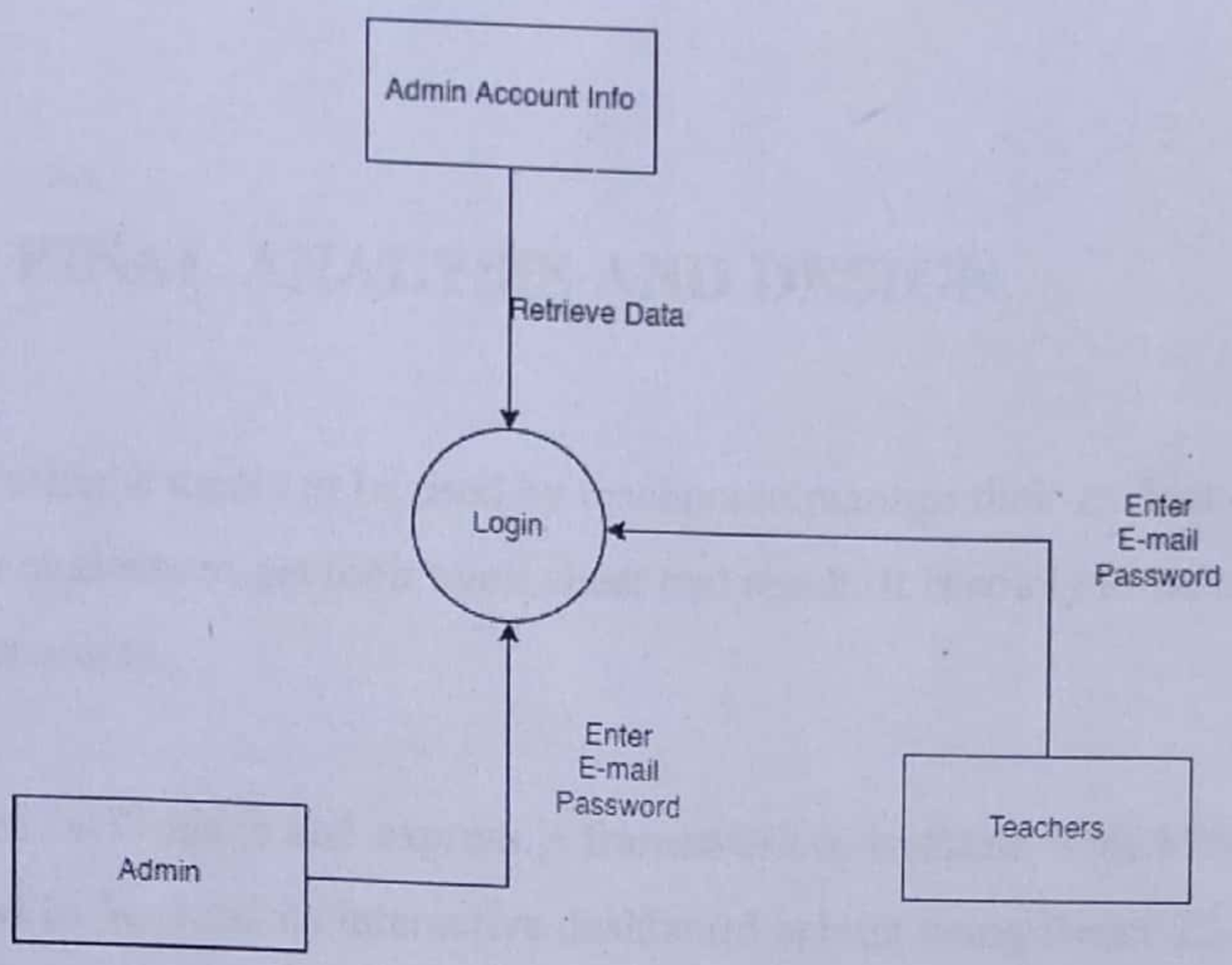

Fig 3.2 Login Data Flow Diagram

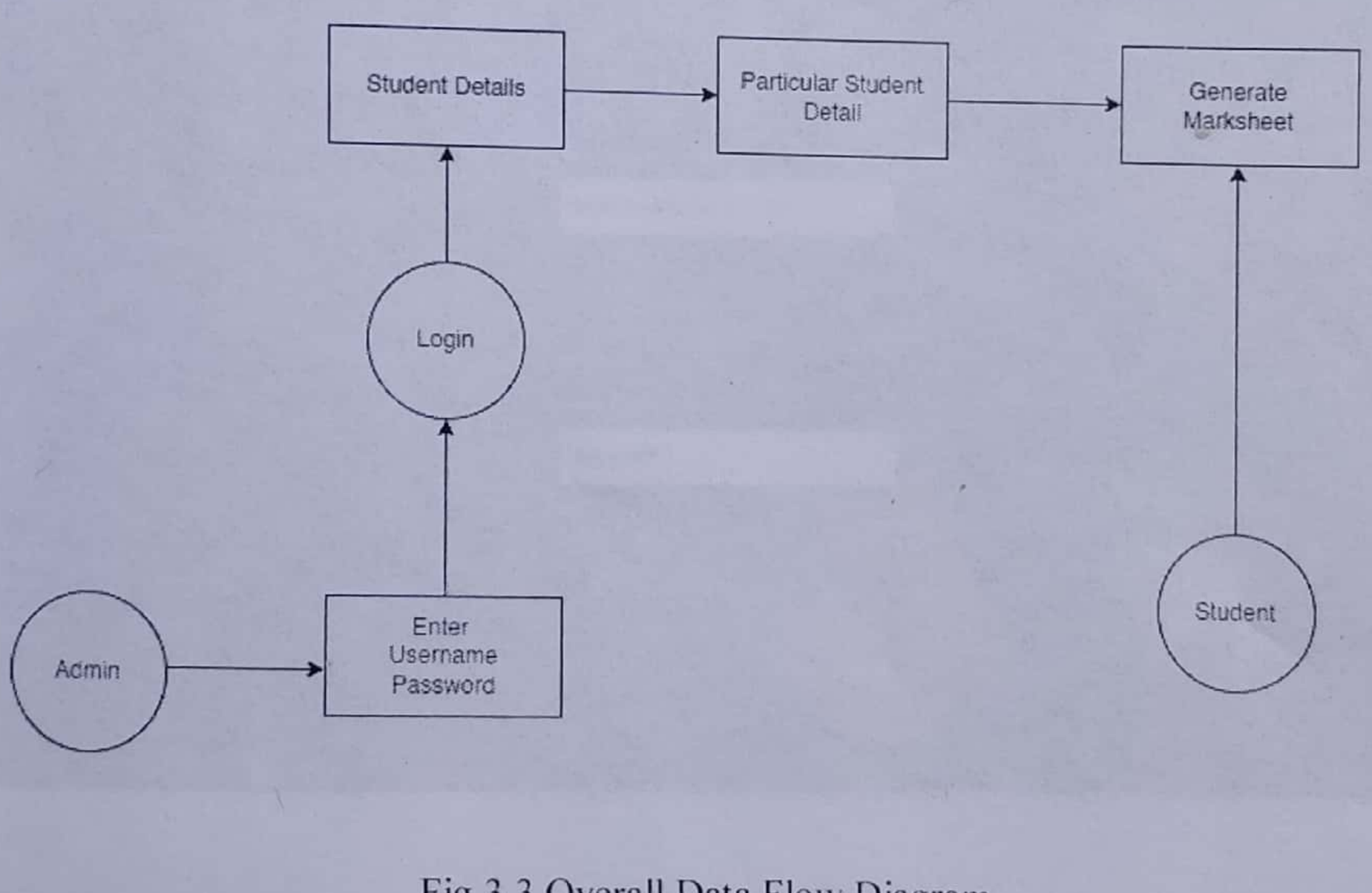

Fig 3.3 Overall Data Flow Diagram

Chapter 4: FINAL ANALYSIS AND DESIGN

This web application is meant to be used by teachers to manage their student data by maintaining a record and for students to get their mark sheet and result. It is solely to be used on web only by the teachers or students.

This project runs on Node.js and express.js framework in backend with Mongo DB as database management and in frontend its interactive dashboard is built using React-JS.

4.1: Application Snippet

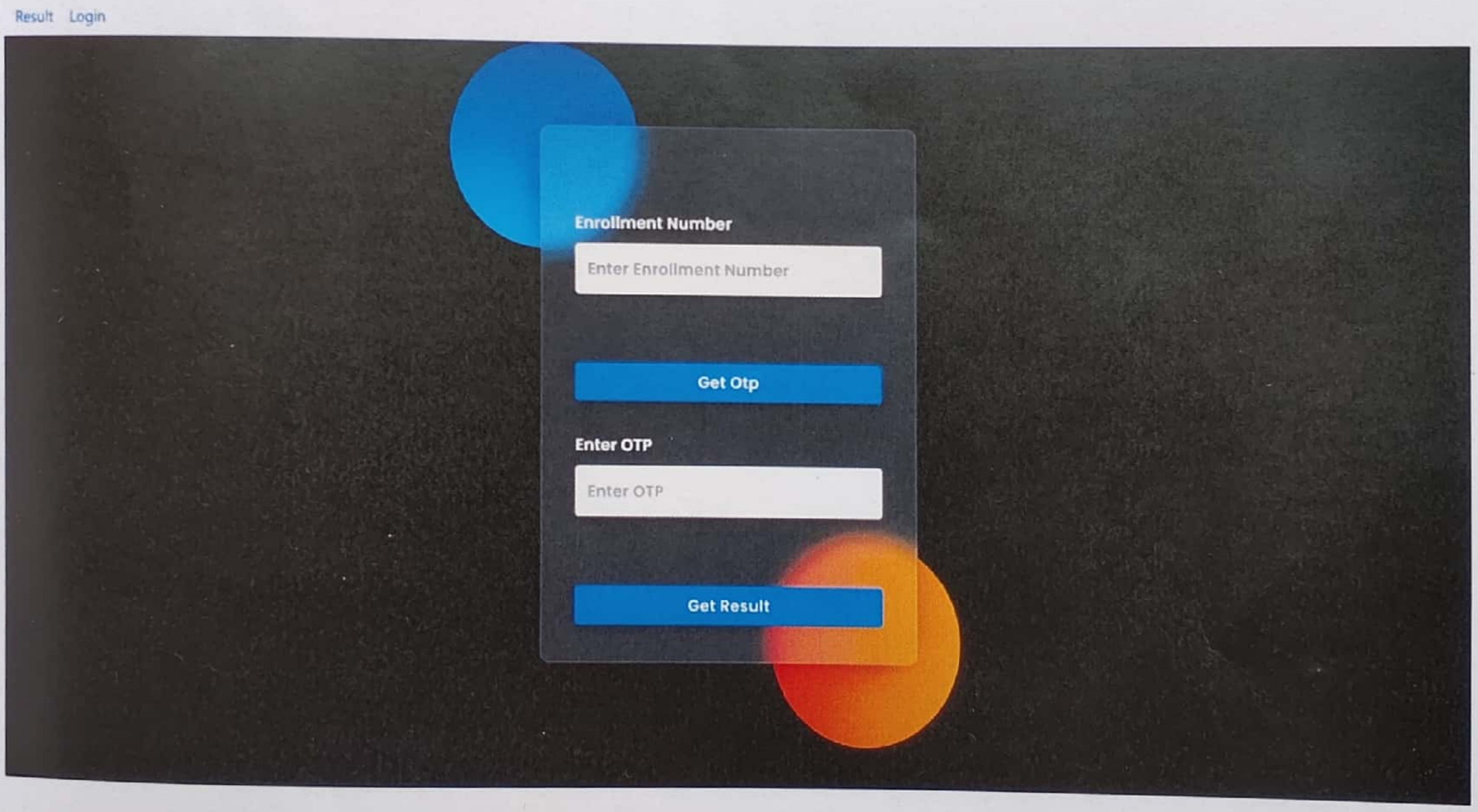

Fig 4.1 Get result section for students.

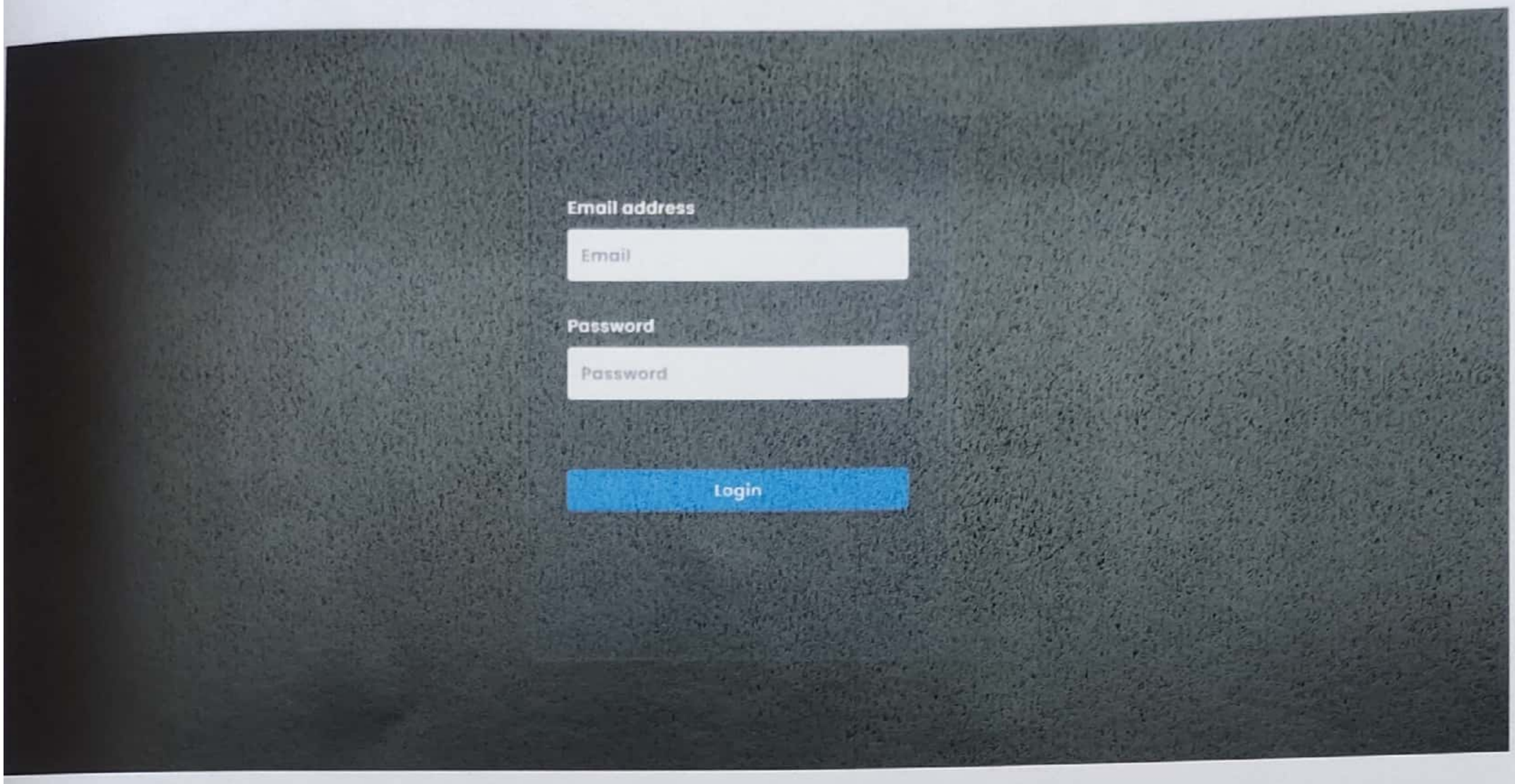

Fig 4.2 Login page for teachers.

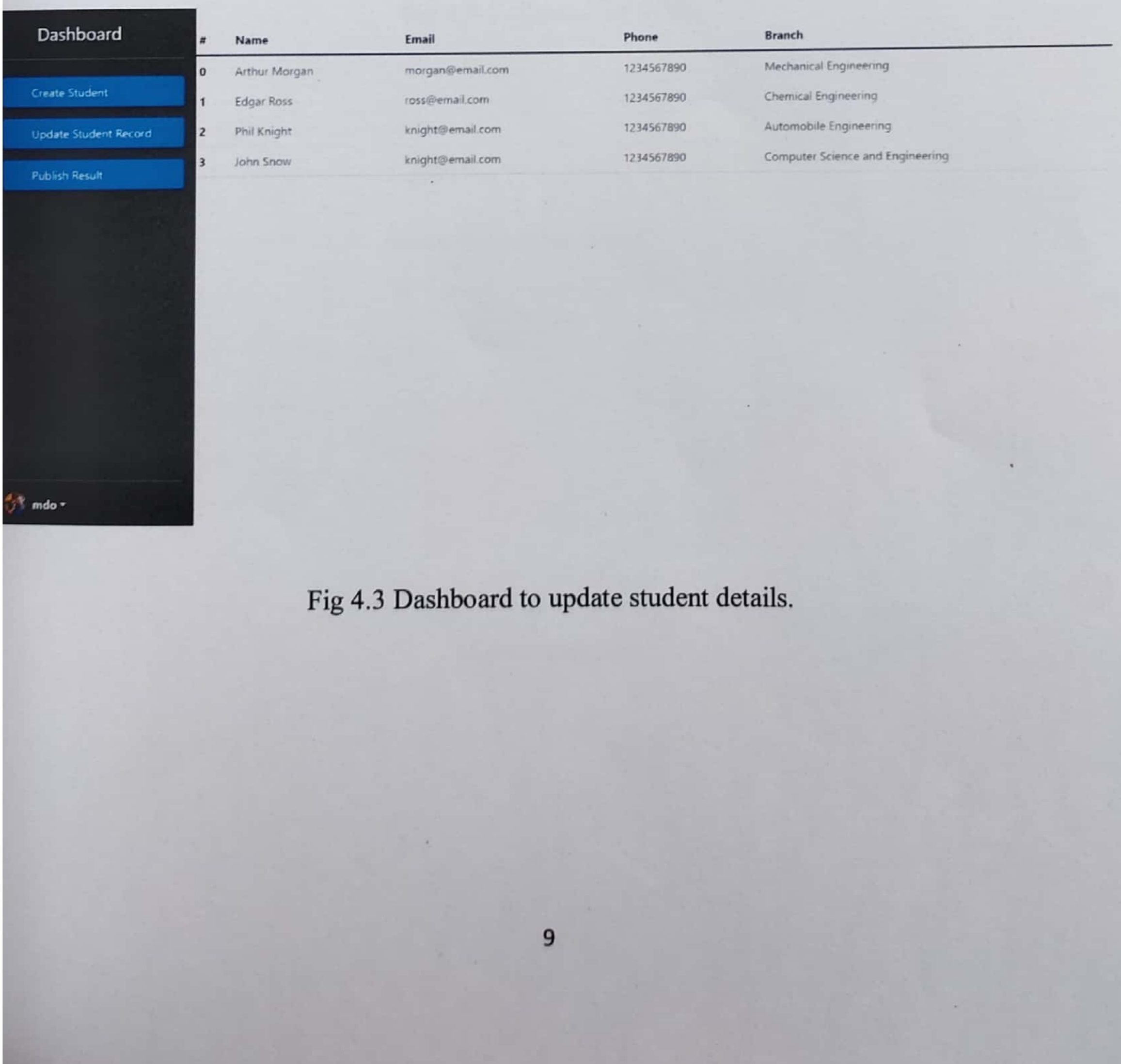

Fig 4.3 Dashboard to update student details.

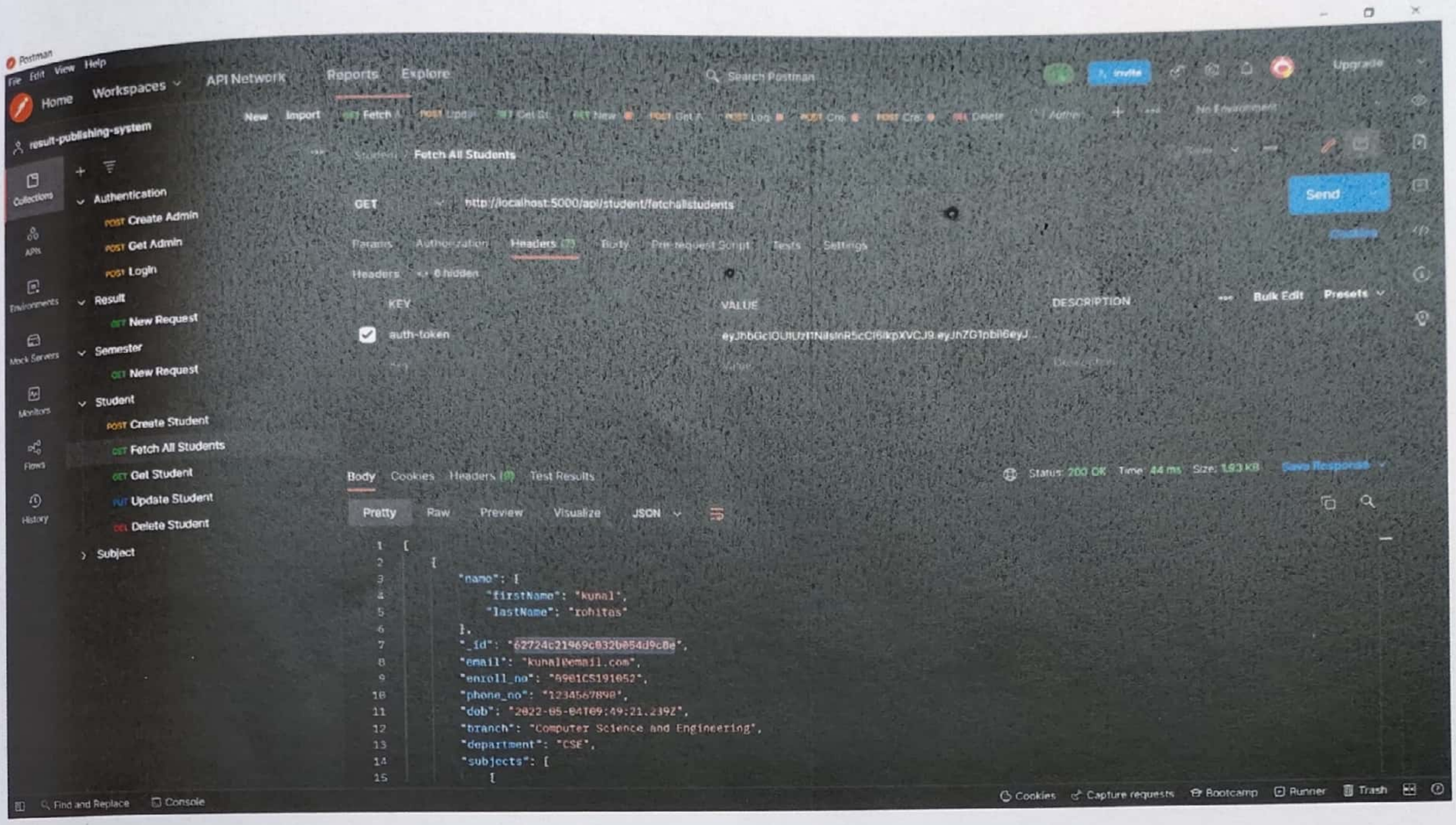

Fig 4.4 Collection of API's.

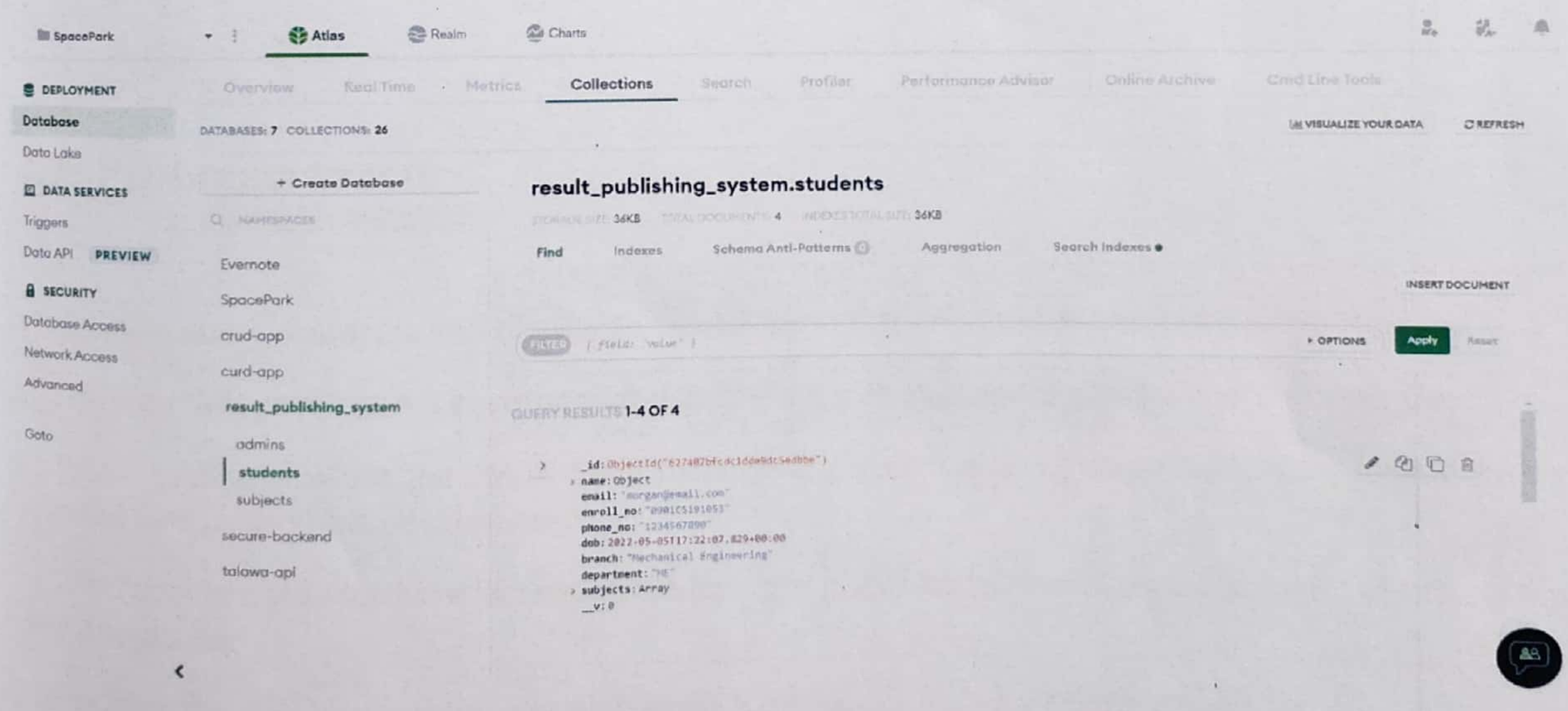

Fig 4.5 Database.

MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

EXAMINATION NOVEMBER-2021

ROLL NO. : 0901CS191052
NAME : Arthur Morgan
INSTITUTE : MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE

B.Tech, COMPUTER SCIENCE & ENGINEERING
SEMESTER : 1
STATUS : Regular

CODE	SUBJECTS	GRADING SYSTEM
		TOTAL SCORE
10001	Basic Computer Engineering	54
10002	Basic Mechanical Engineering	32
10003	Engineering Physics	88
10004	Basic Civil Engineering	75
10005	EEES	92

SGPA : 8.63

RESULT : PASS DIVISION :

"##" : Pass With Grace

Note : It is computer generated output

Fig 4.6 Mark sheet in pdf format.

4.2: Problems faced

There were many problems and challenges faced by us to make this Result Publishing System.

1: The very first problem we encountered was to React-JS because in frontend it's widely used.

2: While making student get result form there was problem in dropdown list on how to store its selected data to send it to the backend

3: Third problem we faced was how to route between pages and to load them when user clicks on the navbar options.

4: Fetching the API to use them was also a tedious task which we finally resolved.

5: The next challenge was how to generate the mark sheet of the student in the pdf format.

6: The main challenge was to design the schema of the server such that it can be highly scalable and never fails. Which was also the main reason to make this project.

4.3: Limitations

Although we have put our best efforts to make this project flexible and easy to operate but limitations cannot be ruled out even by me. Lack of time also compelled me to ignore some part such as designing the UI/UX of the interface, creating more facilities for the user i.e. student apart from just getting their result. Pdf not being generated while application running on Docker.

Chapter 5: CONCLUSION

Student result publishing system is a web application that can be used at any place, any time and by any student or faculty. This application will avoid the calculation and simplify the process of visualizing results for students as provided by the faculty.

Overall the effort and learning I gained from working on result publishing system provided a very solid ground work for future endeavour in fields of web development, back end and front end user experience and I am hoping that I could take it to the next step

Future Implementation

In near future, the system interface could be improved, with more attractive, interactive and meaningful images; enhance the system with an email and SMS or email notifications.

Enhance the current system by providing feedback and query facility for students and teachers, turning it into a complete student education system. Also to have more features for students apart from just getting result such as tracking his/her assignments and its deadline, uploading them and learning from the content uploaded by the faculty and evolve the system by developing several versions through users feedback.

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