VISVESVARAYA TECHNOLOGICAL UNIVERSITY

Jnana Sangama, Belgaum-590018

A Database Management System Mini Project Report
on

"CLASSROOM ERP SYSTEM"

Submitted in Partial fulfillment of the Requirements for the V Semester of the Degree of

Bachelor of Engineering
In
Computer Science & Engineering

By

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CERTIFICATE

This is to certify that the Database Management System Project work entitled **"Classroom ERP System"** has been carried out by **R S VISHAL KIRAN (1CR19CS126)** and **RAKSHITH R (1CR19CS132)** bonafide students of CMR Institute of Technology in partial fulfillment for the award of **Bachelor of Engineering** in **Computer Science and Engineering** of the Visvesvaraya Technological University, Belgaum during the year **2021-2022**. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the Report deposited in the departmental library. This DBMS Project Report has been approved as it satisfies the academic requirements in respect of project work prescribed for the said degree.

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Signature of Guide	**Signature of HOD**
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1.	
2.	

ABSTRACT

The purpose of the Classroom ERP system is to automate the existing manual system by the help of computerized equipment and full-fledged application fulfilling their requirements ,so that their valuable data/information can be stored for a longer period with easy accessing and manipulation of the same. The ERP system lets the teacher mark attendance for the students of their class, Update their attendance and view the attendance report. This aims in reducing the errors while entering the data. No formal knowledge is needed for the user to use this system.

The teachers will be able to efficiently manage their classrooms and focus on activities other than record keeping. The students will be able to view their overall attendance and subject wise attendance for each day. In conclusion the project aims to reduce the effort of both the students and teachers in efficiently managing the classroom.

ACKNOWLEDGEMENT

The success and final outcome of this project required a lot of guidance and assistance from many people and I am extremely privileged to have got this and made us complete our project in time. I would like to thank **Dr. Sanjay Jain**, principal, CMRIT, Bengaluru-560037 for providing an excellent academic environment in the college.

I would like to express our gratitude to **Mr. Kartheek G.C.R** and **Ms. Navaneeta M** professors, CMRIT Bengaluru-560037 for their support, guidance and assistance on how the final output should come and helped us to correct errors in the project by series of project reviews.

Finally, I take this opportunity to extend our earnest gratitude and respect to our parents, teaching & non-teaching staff of the department and all our friends, for giving us valuable advice and support at all times in all possible ways.

R S VISHAL KIRAN (1CR19CS126)

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INTRODUCTION

The Classroom ERP System has been developed to override the problems prevailing in the practicing manual system. This Application to eliminate and and reduce the hardships faced by this existing system. Moreover this system is designed for the particular need of the users to carry out operations in a smooth and effective manner.

Every Educational organization whether big or small, has challenges to overcome and manage the information of the students. The project will enable the teachers to mark, update and view attendance for their current classroom. They will also be able to view a report of overall attendance for their classes. The students can view their overall attendance and subject wise attendance for each day and track their attendance.

1.1 PROBLEM STATEMENT:

Most educational organizations are using manual methods and record keeping to manage the attendance of students, this leads to lots of errors and tedious work. The students are unable to track their daily attendance and teachers find it tedious and difficult to manage and track the attendance of their students. This system is not efficient and very hard to maintain. Hence there is a need for a dynamic system to manage the information of the students and make the administration easier, more efficient and reliable.

1.2 OBJECTIVES :

- The main Objective of this project is to provide a smooth and efficient system to the administration to manage and monitor the attendance of the students.
- Investigate the needs and requirements of the faculty and students
- Develop a database system that satisfies the needs and requirements.
- Providing essential tools to the faculty to mark, update and view the attendance of their students
- Providing essential information to students to view their attendance in their subjects.

Chapter 2

SYSTEM REQUIREMENTS

2.1 FUNCTIONAL REQUIREMENTS :

1. Login page : Where students/teachers can login to their respective page.

2. Teacher :

- **Mark Attendance**: Once logged in, the teacher can mark attendance for their respective department and section .
- **View/Update Attendance:** Where the teacher can view attendance on a particular date for their classes and update it if necessary.
- **Report:** Where the teacher can view the total percentage of each student's attendance in their classrooms.

3.Student :

- **Dashboard :** It contains attractive dashboard where the students will be able to view their overall attendance percentage and track attendance for each subject

4.Logout : Teacher/student can log out once they finish using the site

2.2 NON-FUNCTIONAL REQUIREMENTS :

- **Security :** Personal details, user id & password, must remain confidential .
- **Availability :** The website is available for 24 hours a day. It is always available for Students/Teachers.
- **Usability:** It has a good graphical user interface. It is user friendly and all data is stored in the database.

2.3 HARDWARE REQUIREMENTS :

- **Processor**: Intel Core Pentium..
- **Processor Speed:** 1.9 GHz.
- **RAM:** Minimum 4 GB.
- **Storage:** Minimum 200 Gb.

2.4 SOFTWARE REQUIREMENTS :

- **Operating System:** Windows Environment Only.
- **Coding languages:** HTML5, CSS3, Java Script, Bootstrap and NodeJS.
- **Tools:** Visual Studio Code,Sublime,MySQL Workbench.
- **Database:** MySQL.

Chapter 3

DESIGN

3.1 ENTITY RELATION DIAGRAM :

An Entity Relationship Diagram describes interrelated things of interest in a specific domain of knowledge. A basic ER model is composed of entity types and specifies relationships that can exist between instances of those entity types. In software engineering, an ER model is commonly formed or represent things that a business needs to remember in order to perform business processes. Consequently, the ER model becomes an abstract data model that defines a data or information structure which can be implemented in a database, typically a relational database.

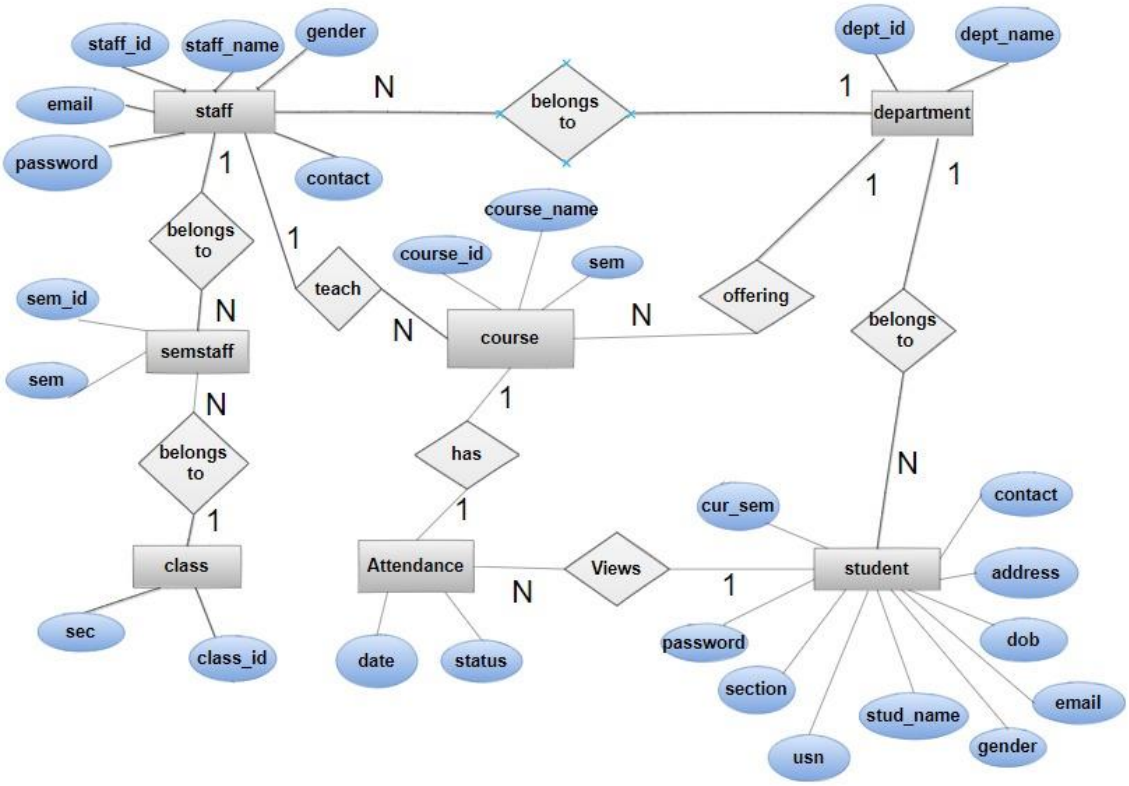

Fig 3.1: ER diagram

3.2 SCHEMA :

A database schema is the skeleton structure that represents the logical view of the entire database. It formulates all the constraints that are to be applied on the data. A database schema defines its entities and the relationship among them. It contains a descriptive detail of the database, which can be depicted by means of schema diagrams.

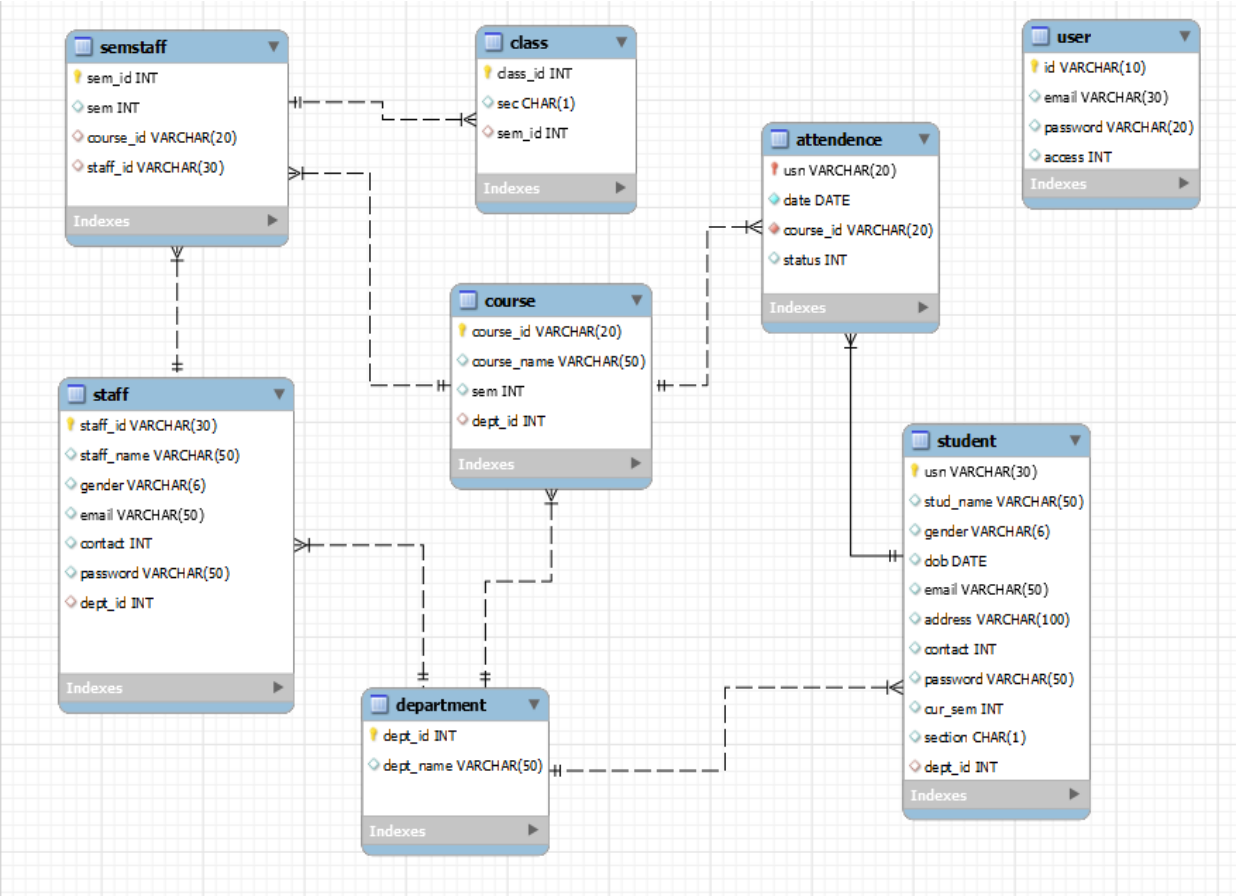

Fig 3.2 : Schema diagram

Chapter 4

IMPLEMENTATION

4.1 TABLE CREATION:

DEPARTMENT:

```
db.query(
  'CREATE TABLE IF NOT EXISTS department (dept_id INT PRIMARY KEY,dept_name VARCHAR(50))',
  (err, result) => {
    if (err) throw err;
    console.log('created DEPARTMENT table.');
  }
);
```

COURSE:

```
db.query(
  'CREATE TABLE IF NOT EXISTS course (course_id VARCHAR(20) PRIMARY KEY,course_name VARCHAR(50),
   sem INT,dept_id INT,
   FOREIGN KEY(dept_id) REFERENCES department(dept_id))',
  (err, result) => {
    if (err) throw err;
    console.log('created COURSE table .');
  }
);
```

STUDENT:

```
.
db.query(
  'CREATE TABLE IF NOT EXISTS student(usn VARCHAR(30) PRIMARY KEY,stud_name VARCHAR(50),
   gender VARCHAR(6),dob DATE,email VARCHAR(50),address VARCHAR(100),
   contact INTEGER(20),password VARCHAR(50),cur_sem INT,section CHAR,dept_id INT,
   FOREIGN KEY(dept_id) REFERENCES department(dept_id))',
  (err, result) => {
    if (err) throw err;
    console.log('created STUDENT table.');
  }
);
```

STAFF:

```
db.query(
  'CREATE TABLE IF NOT EXISTS staff (staff_id VARCHAR(30) PRIMARY KEY,staff_name VARCHAR(50),
   gender VARCHAR(6),email VARCHAR(50),contact INTEGER(20),password VARCHAR(50),dept_id INT,
   FOREIGN KEY(dept_id) REFERENCES department(dept_id))',
  (err, result) => {
    if (err) throw err;
    console.log('created STAFF table.');
  }
);
```

SEMSTAFF:

```
db.query(
  'CREATE TABLE IF NOT EXISTS semstaff (sem_id INT PRIMARY KEY,sem INT,course_id VARCHAR(20),
   staff_id VARCHAR(30),FOREIGN KEY(course_id) REFERENCES course(course_id),
   FOREIGN KEY(staff_id) REFERENCES staff(staff_id))',
  (err, result) => {
    if (err) throw err;
    console.log('created SEMSTAFF table .');
  }
);
```

CLASS:

```
db.query(
  'CREATE TABLE IF NOT EXISTS class (class_id int PRIMARY KEY,sec CHAR,sem_id INT,
   FOREIGN KEY(sem_id) REFERENCES semstaff(sem_id))',
  (err, result) => {
    if (err) throw err;
    console.log('created CLASS table . ');
  }
);
```

ATTENDANCE:

```
db.query(
  'CREATE TABLE IF NOT EXISTS attendence (usn VARCHAR(20),date DATE,course_id VARCHAR(20),status INT,
   PRIMARY KEY(usn,date,course_id),FOREIGN KEY(course_id) REFERENCES course(course_id),
   FOREIGN KEY(usn) REFERENCES student(usn))',
  (err, result) => {
    if (err) throw err;
    console.log('created ATTENDENCE tabel .');
  }
);
```

4.2 DATABASE CONNECTIVITY:

```
const mysql = require('mysql');

const db = mysql.createConnection({
  host: 'localhost',
  user: 'root',
  password: 'Rakshith0044@',
  database: 'classroom',
});

db.connect(function (err) {
  if (err) throw err;
  console.log('connected to database .');
});
```

4.3 IMPORTANT CODE:

```
db.query("SELECT usn FROM student WHERE cur_sem=? AND section=? ORDER BY USN",[sem,sec],(err,result)=>{
                if(err)
                    reject(err);
                var msg = 'Updated attendence';
                for (i = 0; i < result.length; i++)
                {
                    var status = 0;
                    if (present && present.indexOf(result[i].usn) != -1)
                    {
                        status = 1;
                    }
                    db.query("INSERT INTO attendence VALUES(?,?,?,?)",[result[i].usn, date, course_id, status],
                    (err1, resUpdate) => {
                        if (err1)
                        {
                            msg='Attendence not updated';
                            resolve(msg);
                        }
                        else
                            resolve(msg)
                    });
                }
```

Insertion of attendance data

```
db.query("SELECT usn FROM student WHERE cur_sem=? AND section=? ORDER BY USN",[sem,sec],(err,result)=>{
                if(err) reject(err);
                var msg = 'Updated attendence';
                for (i = 0; i < result.length; i++)
                {
                    var status = 0;
                    if (present && present.indexOf(result[i].usn) != -1)
                        status = 1;
                    db.query("UPDATE attendence SET usn=?,date=?,course_id=?,status=? WHERE usn=? AND date=? AND
                    course_id=?",[result[i].usn,date,course_id,status,result[i].usn,date,course_id],
                    (err1, resUpdate) => {
                        if (err1)
                        {
                            msg='Attendence not updated';
                            resolve(msg);
                        }
                        else
                            resolve(msg)
                    });
                }
            });
```

Update attendance

```
db.query("SELECT round(100*avg(status),2) as avg FROM attendence WHERE usn=?;",id,(err,result)=>{
                if(err){
                    reject(err);
                }
                let user=result[0];
                resolve(user);
            });
```

Overall attendance

4.4 DATA SCREENSHOT:

staff_id	staff_name	gender	email	contact	password	dept_id
1STCS01	Kartheek G C R	M	kartheek@cmrit.ac.in	953534298	1234	1
1STCS02	Sagarika Behera	F	sagarika@gmail.com	4567765	1234	1
1STCS03	Smitha N	F	smitha@cmrit.ac.in	2345654	1234	1
1STCS04	Shivaraj B	M	shivaraj@cmrit.ac.in	9876677	1234	1
1STCS05	Shanthi M B	F	shanthi@cmrit.ac.in	98765456	1234	1
1STCS06	Sherly Noel	F	sherly@cmrit.ac.in	98778899	1234	1
NULL	NULL	NULL	NULL	NULL	NULL	NULL

Staff data

usn	stud_name	gender	dob	email	address	contact	password	cur_sem	section	dept_id
1CR19CS120	Poojitha	F	2001-09-21	pooj19cs@cmrit.ac.in	Bangalore	99832111	1234	5	B	1
1CR19CS121	Prashanth N	M	2001-09-13	prah19cs@cmrit.ac.in	Bangalore	99857665	1234	5	B	1
1CR19CS123	Prathik Kumar Mishra	M	2001-03-02	prat19cs@cmrit.ac.in	Delhi	987665	1234	5	B	1
1CR19CS124	Praveen Kumar E S	M	2001-01-02	prav19cs@cmrit.ac.in	Kolar	998765	1234	5	B	1
1CR19CS126	Vishal kiran R S	M	2001-03-07	visk19cs@cmrit.ac.in	Bangalore	98987665	1234	5	B	1
1CR19CS130	Rakshith	M	2001-09-18	rak19cs@cmrit.ac.in	Bangalore	9980065	1234	5	B	1
1CR19CS131	Rakshith K H	M	2001-12-13	rakh19cs@cmrit.ac.in	Bangalore	9007665	1234	5	B	1
1CR19CS132	Rakshith R	M	2001-07-20	rakr19cs@cmrit.ac.in	Bangalore	9987665	1234	5	B	1
1CR19CS144	Vignesh B	M	2001-02-01	vigesh19cs@cmrit.ac.in	Chitradurga	91123322	1234	5	C	1
1CR19CS145	Tarun S N	M	2001-07-11	tarun19cs@cmrit.ac.in	Bangalore	9987665	1234	5	C	1
1CR19CS148	Yash Negi	M	2000-01-02	yashnegi19cs@cmrit.ac.in	Kolar	998765	1234	5	C	1
1CR19CS149	Varun K C	M	2000-12-13	varunkc19cs@cmrit.ac.in	Bangalore	9007665	1234	5	C	1
1CR19CS151	Vedant Tripathi	M	2000-12-18	trip19cs@cmrit.ac.in	Bangalore	9980065	1234	5	C	1
1CR19CS158	Vivek Kumar	M	2001-09-07	viskumar19cs@cmrit.ac.in	Bangalore	98987665	1234	5	C	1
1CR19CS160	Yashitha	F	2001-12-02	yashit19cs@cmrit.ac.in	Delhi	987665	1234	5	C	1
1CR19CS161	Yuvraj Sooraj	M	2001-09-23	yuvr19cs@cmrit.ac.in	Bangalore	99857665	1234	5	C	1
1CR19CS162	Zain Ahmed	M	2001-01-20	zain19cs@cmrit.ac.in	Bangalore	9987665	1234	5	C	1

Student data

usn	date	course_id	status
1CR19CS02	2022-02-01	18CS53	1
1CR19CS091	2022-01-15	18CS51	1
1CR19CS091	2022-01-15	18CS52	0
1CR19CS091	2022-01-15	18CS53	0
1CR19CS091	2022-01-15	18CS54	1
1CR19CS091	2022-01-15	18CS56	1
1CR19CS091	2022-01-16	18CS51	1
1CR19CS091	2022-01-16	18CS53	1
1CR19CS091	2022-01-16	18CS54	1
1CR19CS091	2022-01-16	18CS55	1
1CR19CS091	2022-01-16	18CS56	1

Attendance data

course_id	course_name	sem	dept_id
18CS51	Management, Entrepreneurship for IT...	5	1
18CS52	Computer Networks and Security	5	1
18CS53	Database Management System	5	1
18CS54	Automata Theory and Computability	5	1
18CS55	Computer Networks and Security	5	1
18CS56	Unix Programming	5	1
NULL	NULL	NULL	NULL

Course data

Chapter 5

DISCUSSION AND SCREENSHOTS

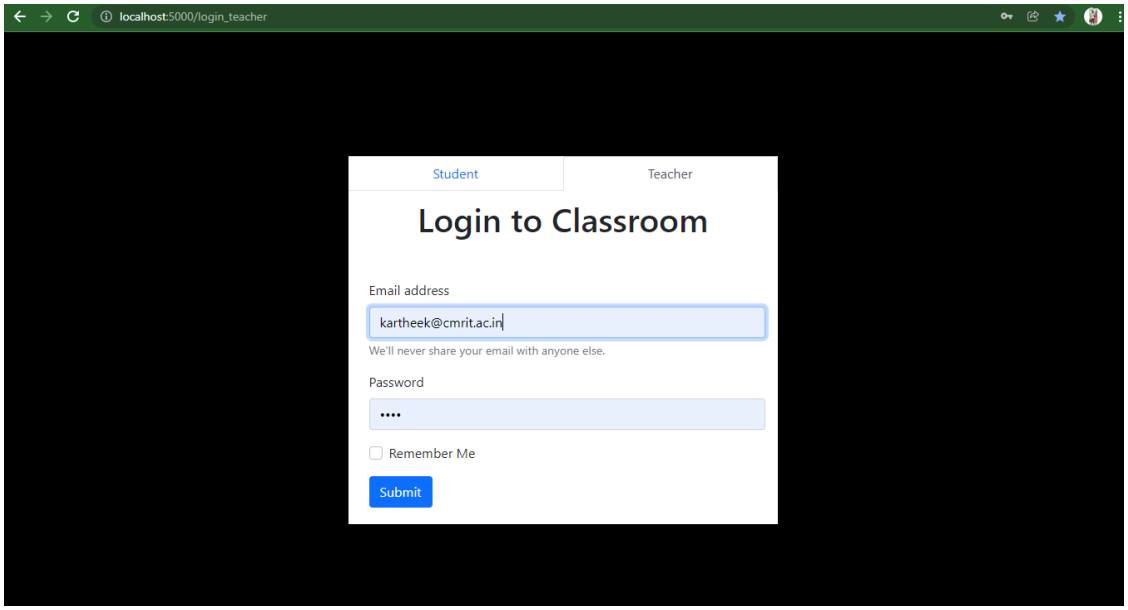

Fig 5.1: Login Page

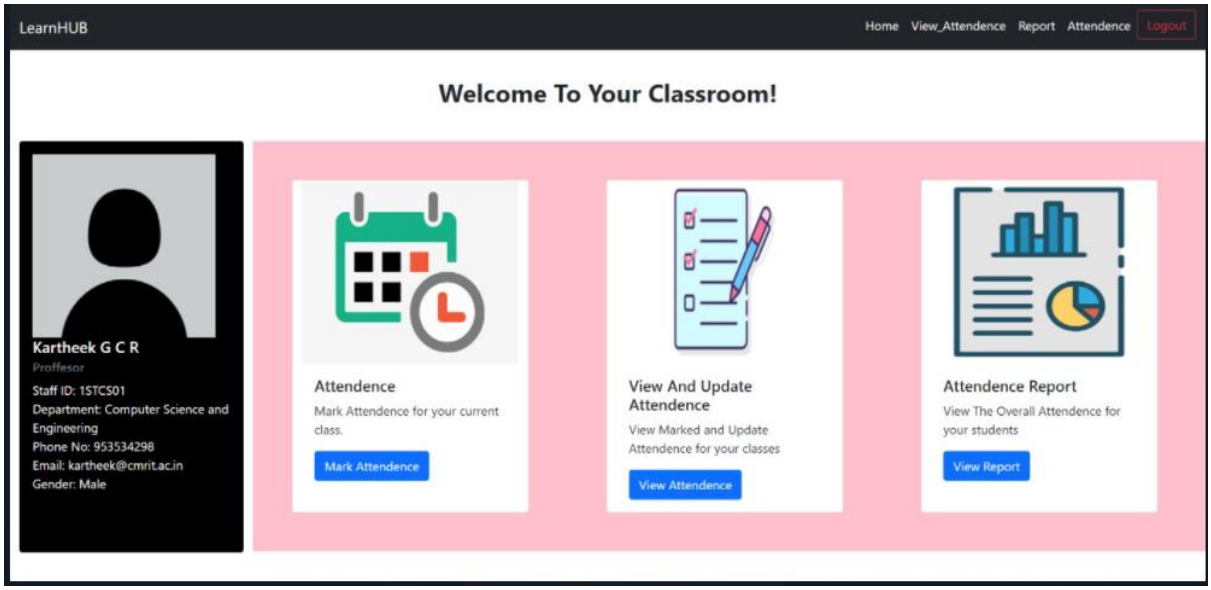

Fig 5.2: Teacher dashboard

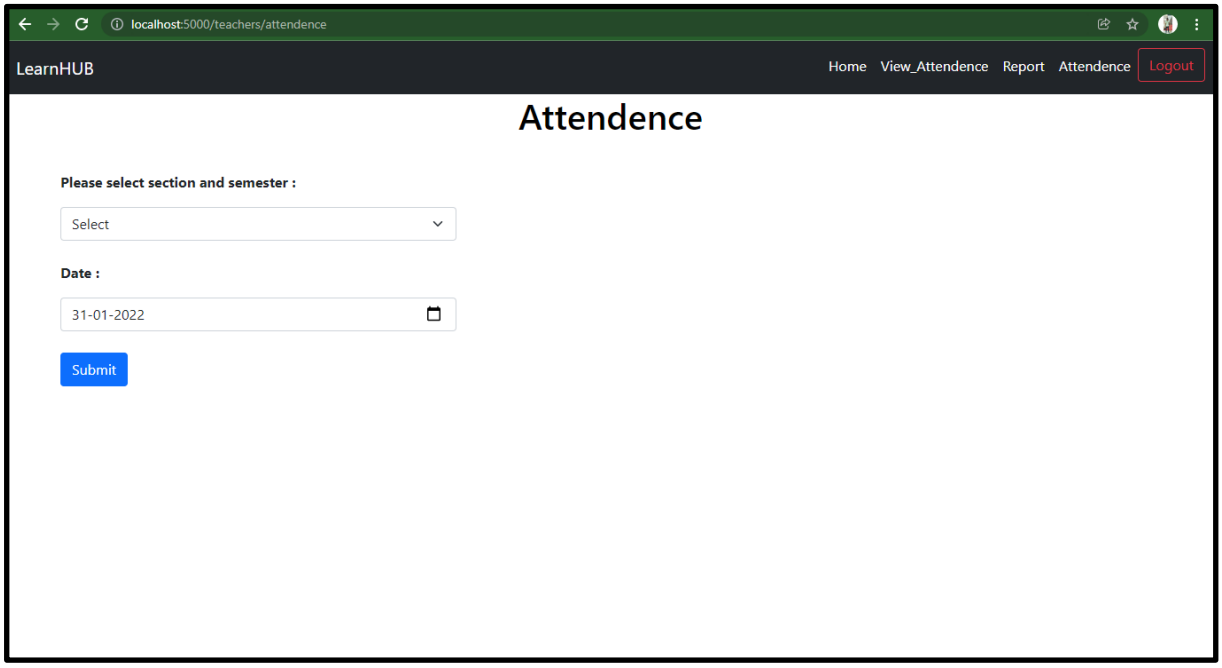

Fig 5.3: Select class and date

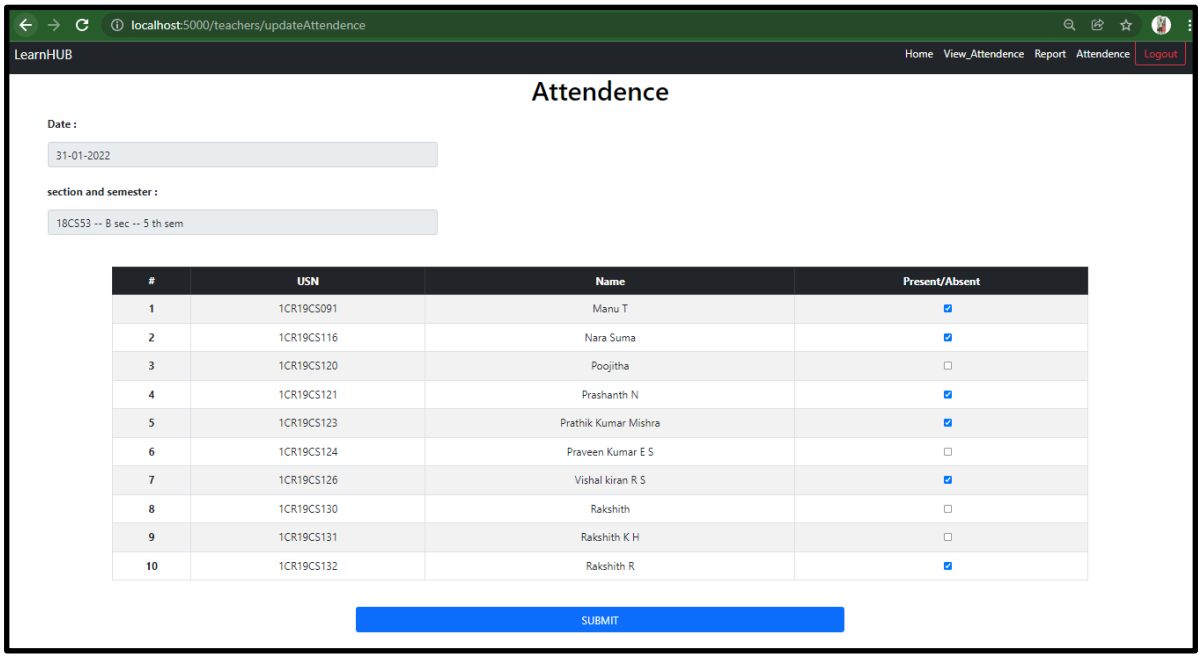

Fig 5.4: Mark attendance

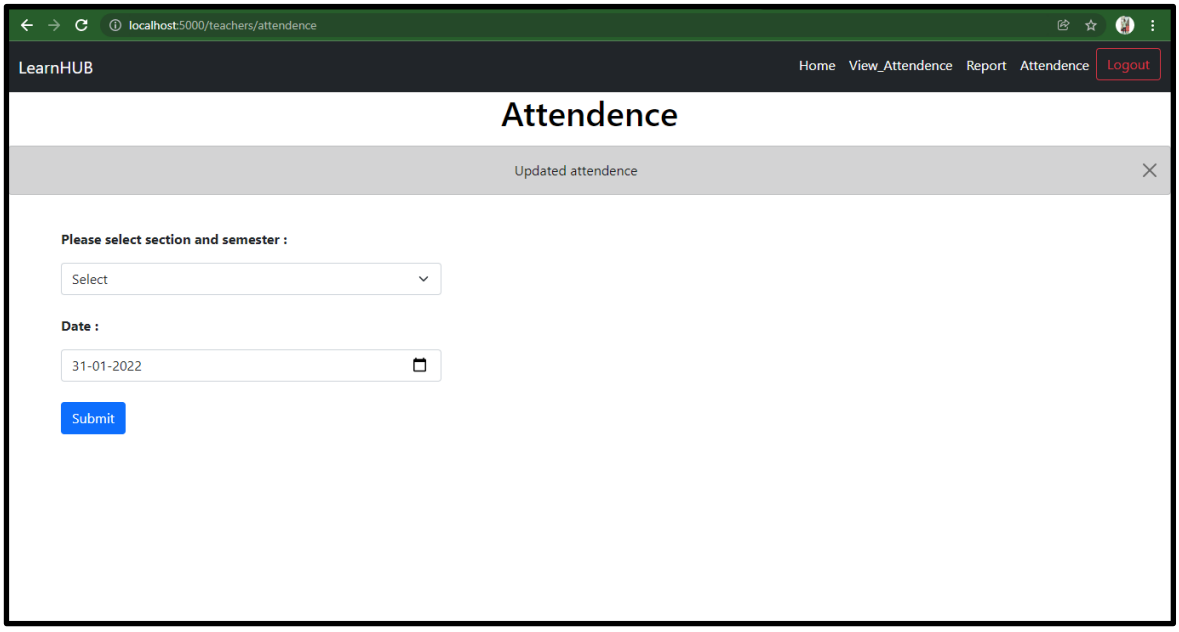

Fig 5.5: Update message

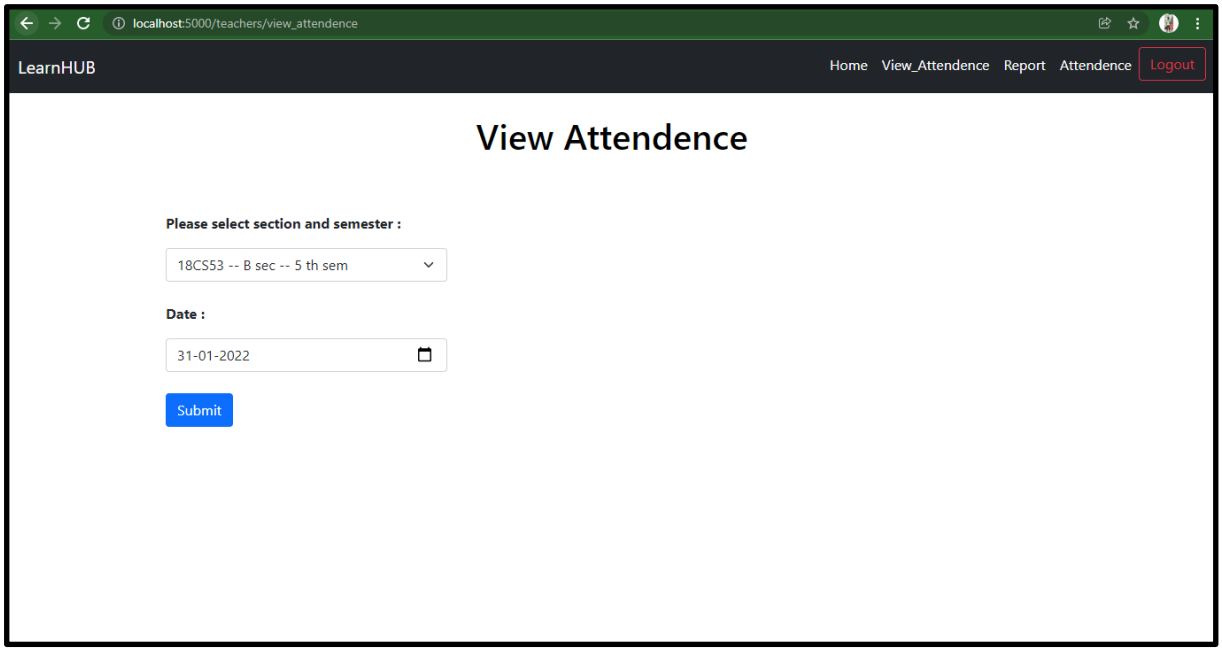

Fig 5.6: View attendance

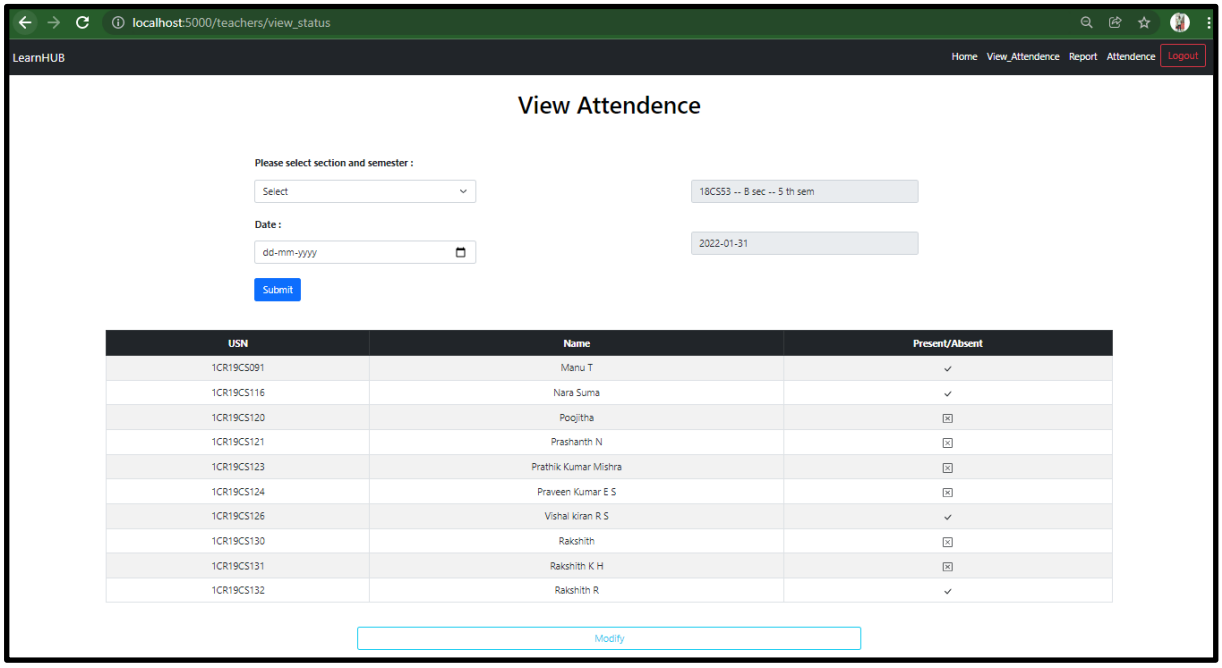

Fig 5.7: View attendance result

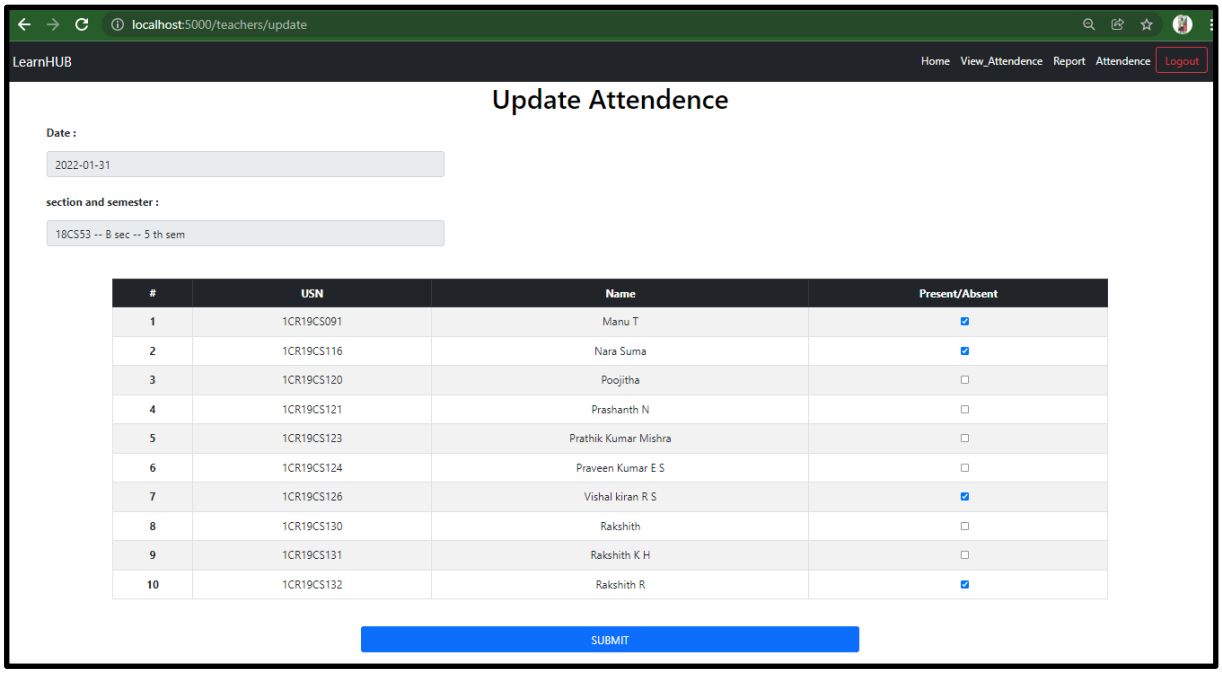

Fig 5.8: Update attendance

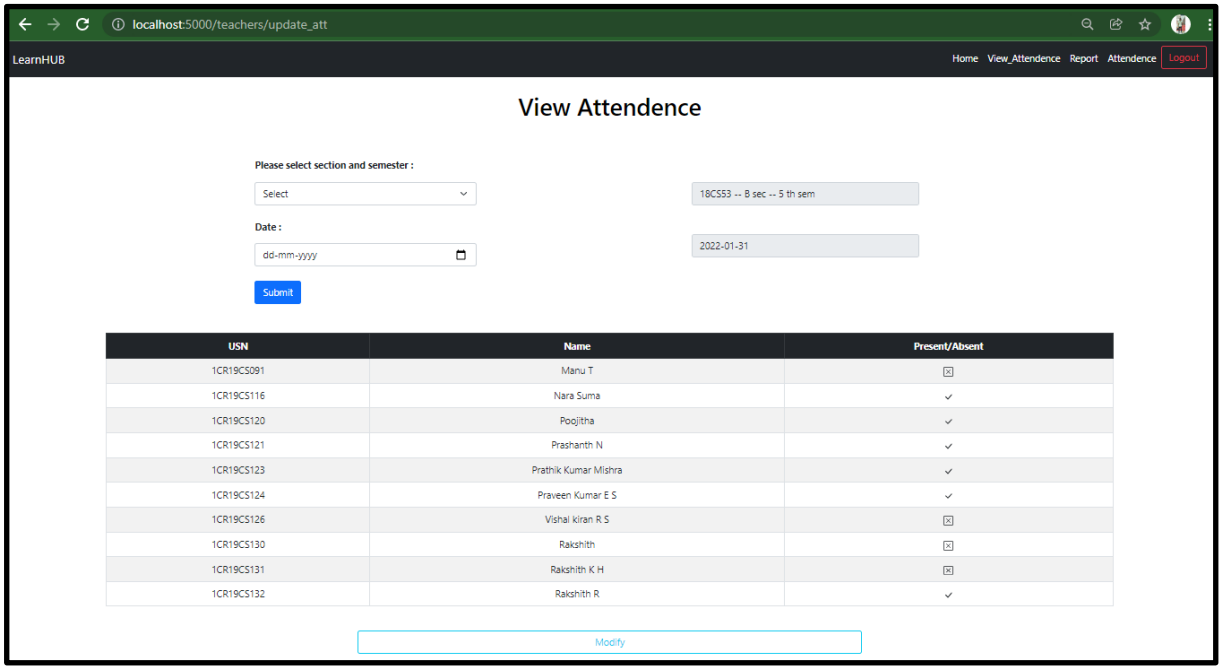

Fig 5.9: Updated attendance

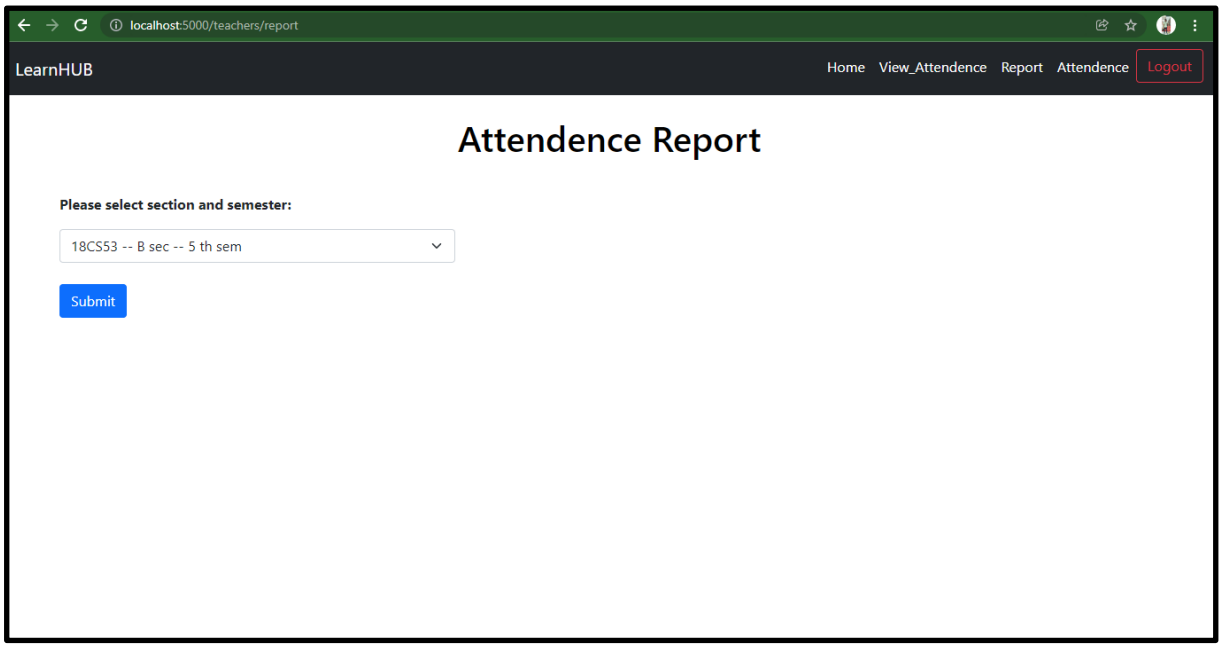

Fig 5.10: Attendance report

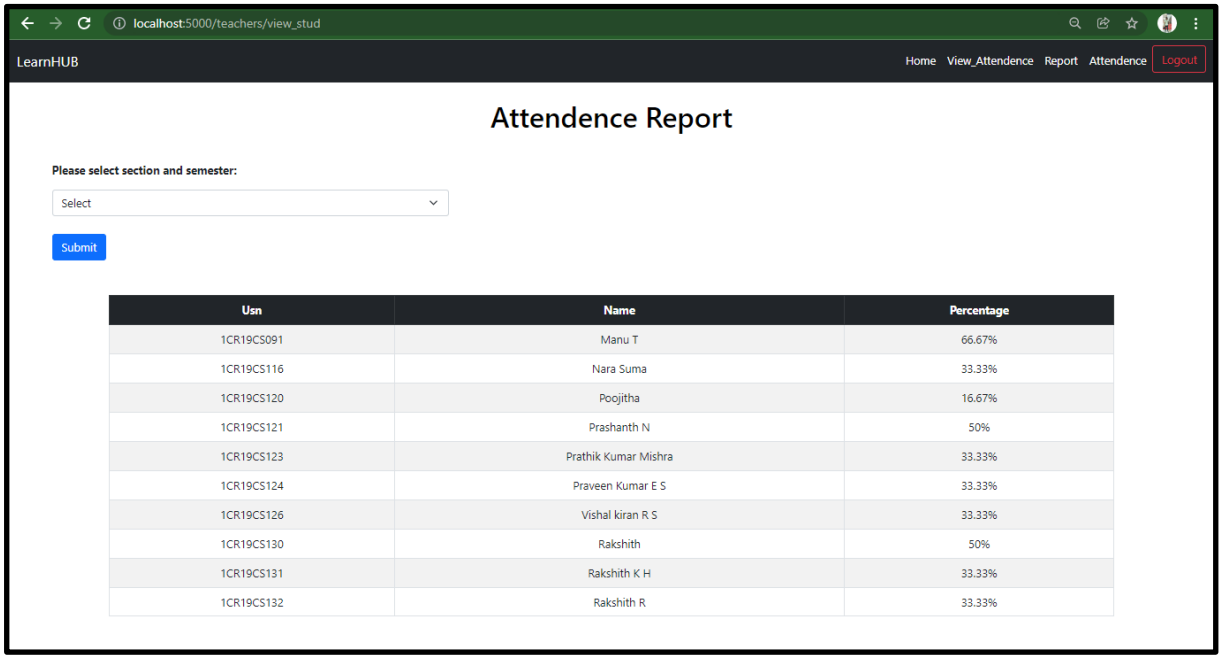

Fig 5.11: Attendance report result

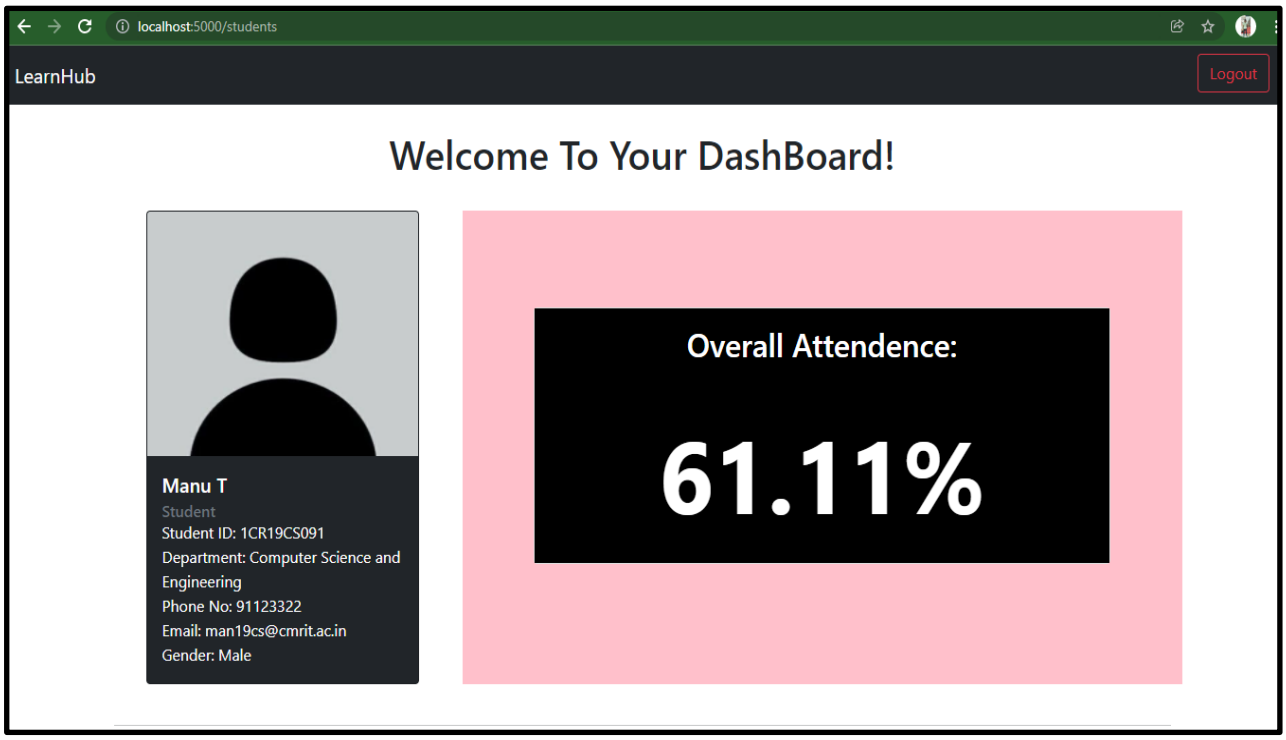

Fig 5.12: Student dashboard

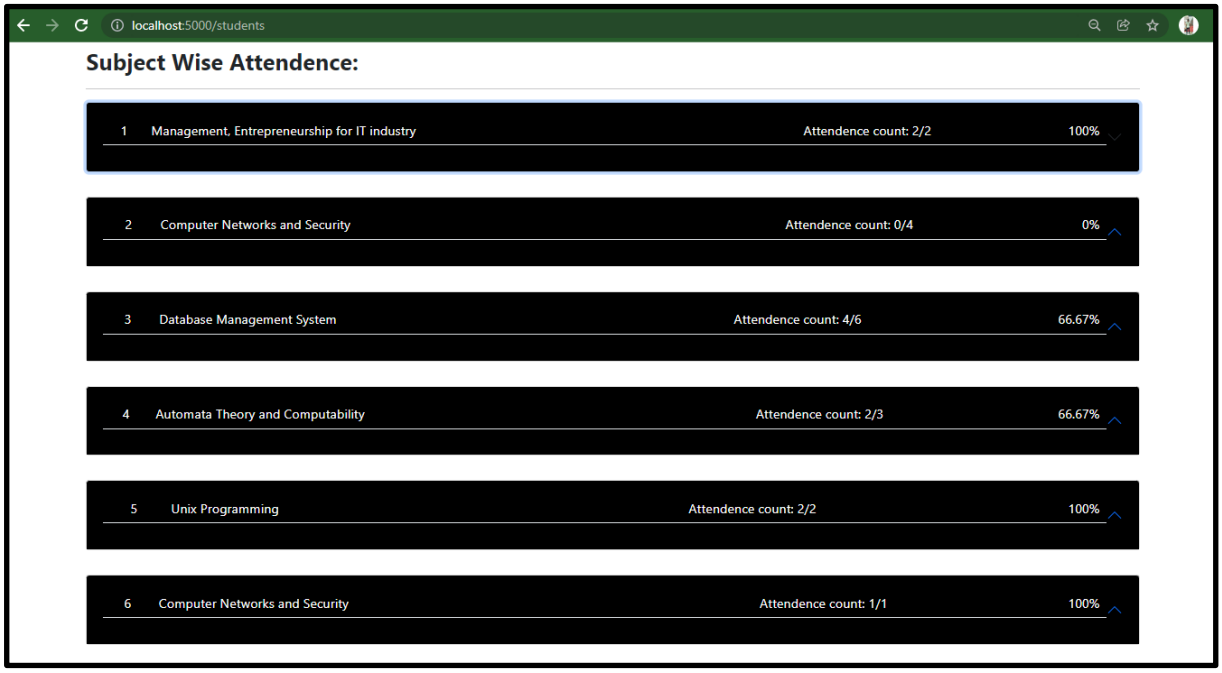

Fig 5.13: Subject wise attendance

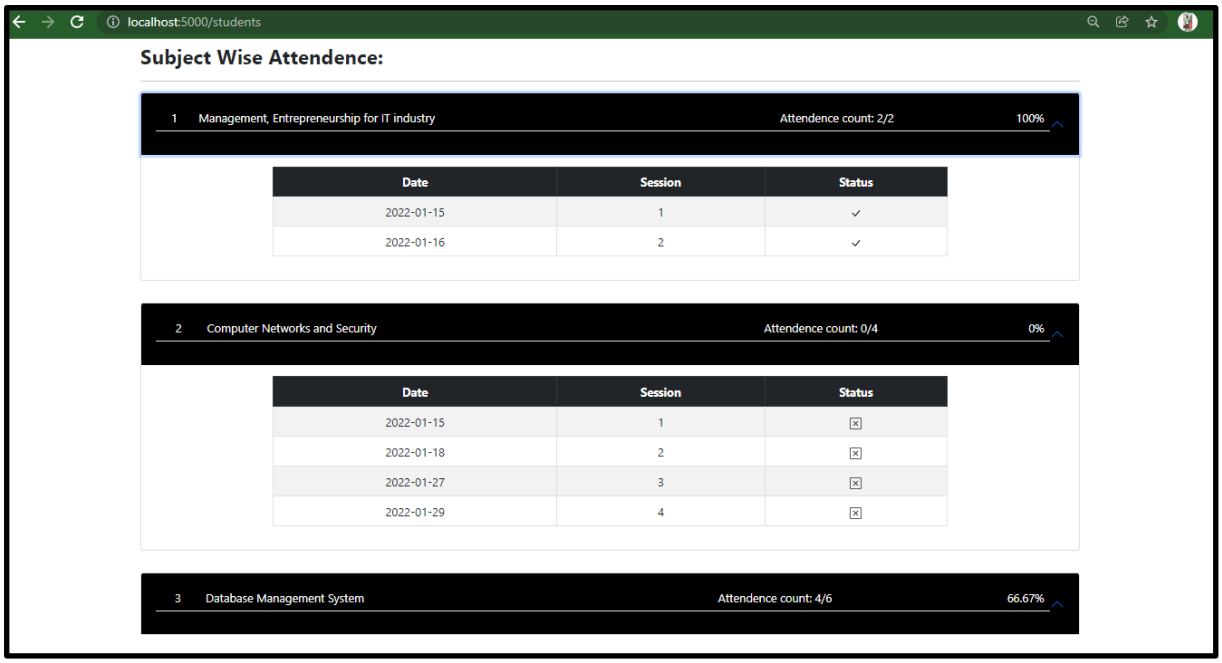

Fig 5.14: Subject wise attendance with date

Chapter 6

CONCLUSION AND FUTURE SCOPE

6.1 CONCLUSION:

The Classroom ERP System attempts to satisfy the needs of the faculty and students in managing and tracking their attendance. This system shall prove to be a powerful package in satisfying all the requirements of the users. The objective of the application is to provide a framework that enables swift, easy and efficient management of the classroom with minimal effort.

6.2 FUTURE SCOPE:

Our Project can be upgraded into a full fledged educational application. It can include but is not limited to the following features:

- **Assignments**: The faculty would be able to post assignments and grade them. Students will be able to see them and submit them.
- **Student Management:** The class teachers will be able to add or remove teachers from their classes.
- **Fee Management:** The fee status of the students can be monitored and updated as needed.
- **Feedback System**: The students will be able to give feedback to their teachers and the management.

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