A Progress Report

on

ERP System

carried out as part of the course CS1634 Submitted by

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Abstract

Enterprise Resource Planning (ERP) college web application is the one kind of web application that integrates all the modules and functionalities of the college system on a single system that can be handled by the administrative head and accessed by the students and faculties with valid user IDs and passwords.

In a college there are various sections and each section handles all student information and college databases. These sections are linked with each other. The Current System of the college is having problems of interlinking and data repetition. To overcome these problems we present the College ERP System which is automated and centralized. This system has an easy user interface and has a powerful data management system which makes this system very useful.

1. Introduction

1.1 Scope of the Work

The project is designed to help the teachers and students manage their college activities. It consists of relational databases of students, departments, faculty, courses . Using these databases, various functions that include Attendance management, marks management , internship details, LOR issue etc. are provided.A student can request for LOR from any specific teacher providing his/her purpose and the lecturer can decide to either accept or reject the request based on the student details.

1.2 Product Scenarios

Admin: Admin has all the access rights to the system. Admin is able to manage the student profile , lecturer Registration and Academics. First he adds all the lecturers of respective departments. Then the classes are added and the respective staff is allocated to the class as a class coordinator. These all tasks are managed by admin only. This access is forbidden for the rest of users. Admin can manage the accounts of all the students and staff .

Lecturer: Staff members are registered by admin and login details are generated by admin which can be managed by staff afterwards. Staff has access rights to manage all the data of their subjects of respective class. They can manage daily attendance of all students of respective subjects and classes. Staff members are able to give notifications and can upload some documents related to their respective subjects and other documents like LOR,etc.

Student: Students are admitted by admin only to the system. When they get admitted the username and passwords are generated by the admin and can be managed by the student afterwards. Students has access to personal profile, current attendance record, Class Tests records, and all the notifications and upcoming events which are managed by the admin. Another important facility provided for students is to view the notification of his/her respective department. Students can upload their resumes and research papers which can be viewed by staff members.

2. Requirement Analysis

2.1. Functional Requirements

2.1.1. Maintaining Databases: The databases need to be updated every once in a while.

2.1.2. Issuing LOR: This feature will help students to get LOR from the faculty.

2.2.3. Attendance Managing: Displaying the attendance of students.

2.2.4. Internship and Project Management: Internship and project details of the students will be updated time to time.

2.2.5. Admin Notifications: Admin will update notifications for the students and lecturers.

2.2. Non Functional Requirements

2.2.1. Availability: The service provided by this software would be available 24*7.The users can access the ERP system at any time.

2.2.2. Maintainability: Proper documentation is required so that this software is long-lasting and error free.

2.2.3. Reusability: Modules should have low coupling so that they can be reused as per requirement.

2.2.4. Reliability: The software database should be constantly updated considering the changes in various factors

2.2.5. Security: The database contains sensitive information of all the students and staff. Therefore, optimal security measures must be taken to ensure data is safe from unauthorized users.

2.2.6. Portability: The users access the ERP from various platforms such as desktops and mobile phones. The webapp must be portable to all platforms and the user experience must be optimal.

2.3 Use Case Scenarios

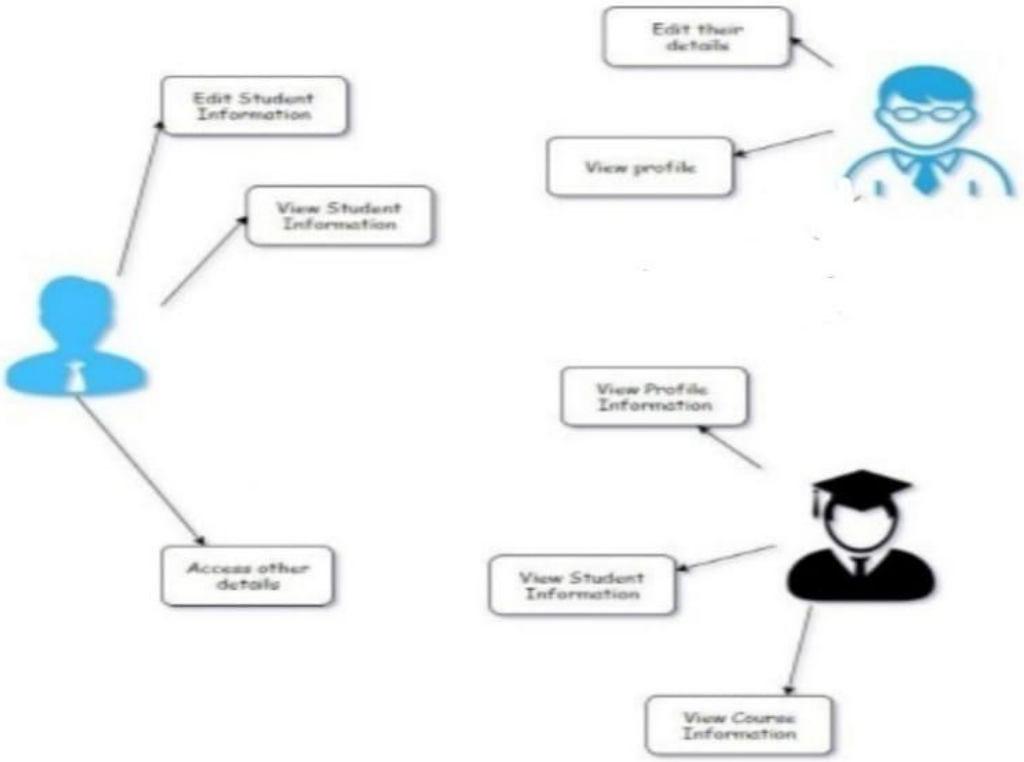

Figure 1 Use cases

2.3.1 Admin: An admin holds all the privileges of the ERP system. The admin has access to all the databases in the system. These include student database, teacher database, courses database and several others. Their job is to maintain the systems and address the problems faced by the other users. The admin needs adequate resources and the right tools. The admin expects a simple interface where they can easily access the required information .

2.3.2. Teacher:Teaching staff make up most of the staff. A teacher expects the ERP system to be easy to use, reliable and reduce the workload. Each teacher belongs to the department and are assigned to a class of students with a course. So, the teacher should only be able to view and manipulate the data of the students that they are assigned to. The teachers' involvement In the ERP System, is to enter the attendance, the internal marks, the semester end examination marks.

2.3.3 Student: Students are another class of end user. In the ERP system, students can view information regarding their attendance status, internals marks, Semester

end examination marks, notifications from the college administration etc. A students expect the ERP system to be aesthetic and functional. A student should only be able to view information about himself. Students generally want to nice graphical interface that provides a lot of information.

2.4. Other Software Engineering Methodologies

As our environment is dynamic,an agile model will be best suited.The agile methodology recognises the challenges of managing technology for prolonged periods in an environment that's continually changing. This approach offers more flexibility and increased speed compared to the waterfall methodology.

- Plan. The sprint begins with a sprint planning meeting, where team members come together to lay out components for the upcoming round of work. The product manager prioritizes work from a backlog of tasks to assign the team.
- Develop. Design and develop the product in accordance with the approved guidelines.
- Test/QA. Complete thorough testing and documentation of results before delivery.
- Deliver. Present the working product or software to stakeholders and customers.
- Assess. Solicit feedback from the customer and stakeholders and gather information to incorporate into the next sprint.

3. System Design

3.1. Design Goals

- Usability
- Visual appeal
- Compatibility
- Customer Needs
- Performance
- Durability
- Reliability
- Robust

3.2. System Architecture

The ERP software requires the architectural design to represent the design of the software. Here we define a collection of hardware and software components and their interfaces to establish the framework for the development of this software. There exists number of components of the system which are integrated to form a system. The set of connectors will help in coordination, communication, and cooperation between the components. The ERP software is built for a computer-based system. It exhibits the data centric style of architecture.

In the college ERP software, the database stores the data of all the students and faculties and the stored data is updated, added, deleted or modified. So it exhibits the data centric architectural style. In this architecture different components communicate with the shared data repository.The components access a shared data structure and are relatively independent

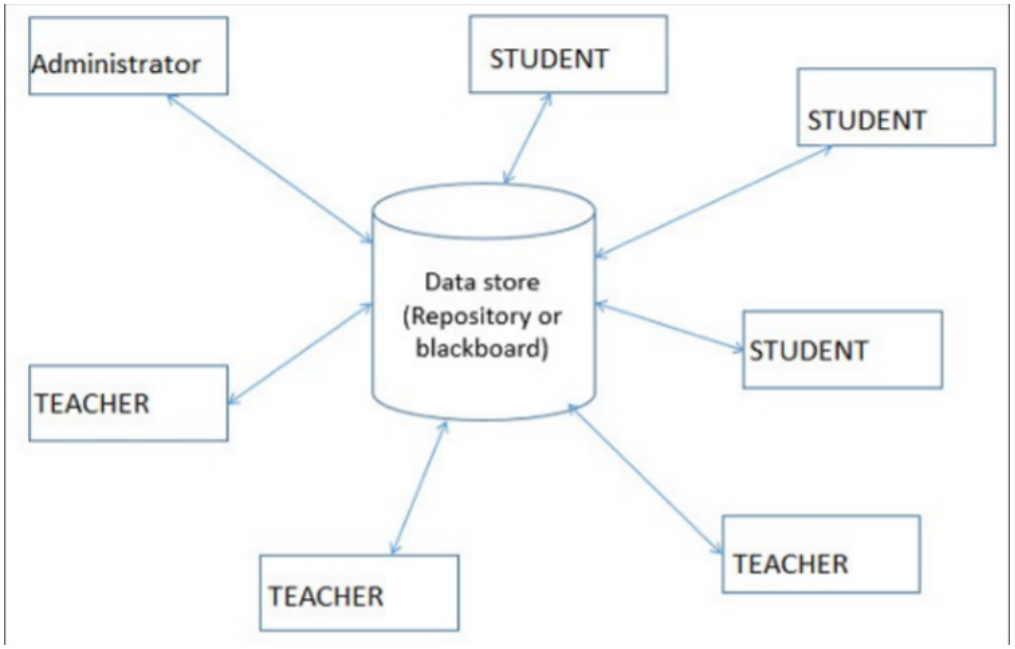

Figure 2 Software Architecture

3.3. Detailed Design Methodologies

• Central data: Also known as data store or data repository, which is responsible for providing permanent data storage. It represents the current state. It stores the information of students, attendance of students and faculties of each day, salary of all the faculties etc…

• Data accessors: Data accessors are one of the components, they are also called as clients. A data accessor operates on the central data store, performs computations, and might put back the results. Which includes students, faculties and administrators. Students request to access the data from the repository and get the request serviced. Faculty members modify the data in the repository. Administrator can add or delete the clients.

• Interface: Interface is the connecting component between a data repository and clients' client interacting with the data through the web server. The operation of one client does not depend on the others. They are independent of each other. This data-centered architecture will promote integrability. This means that the existing components can be changed and new client components can be added to the architecture without the permission or concern of other clients. Addition of removal of students and faculties can be done without the permission of other students and faculties.

4. Work Done

4.1 Development Environment

4.1.1. Visual Studio
4.1.2. XAMPP
4.1.3. Firebase database
4.1.4 Adobe XD

4.2 Results and Discussion

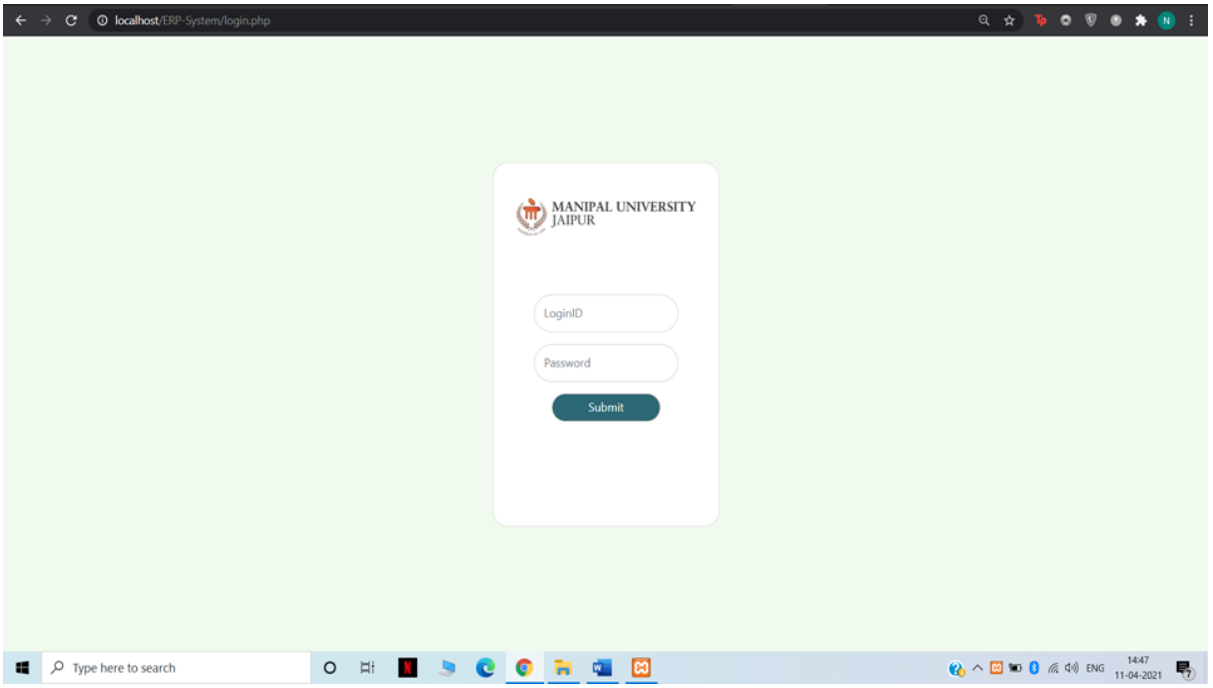

Figure 3 Login Page

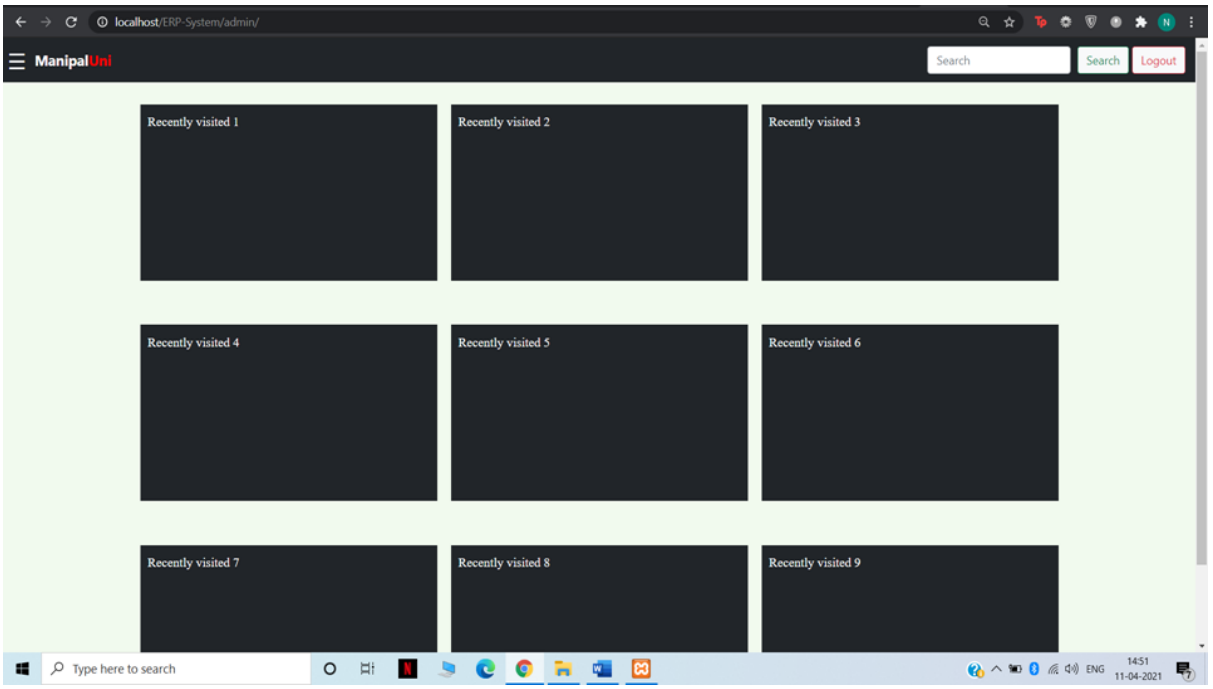

Figure 4 Admin Dashboard

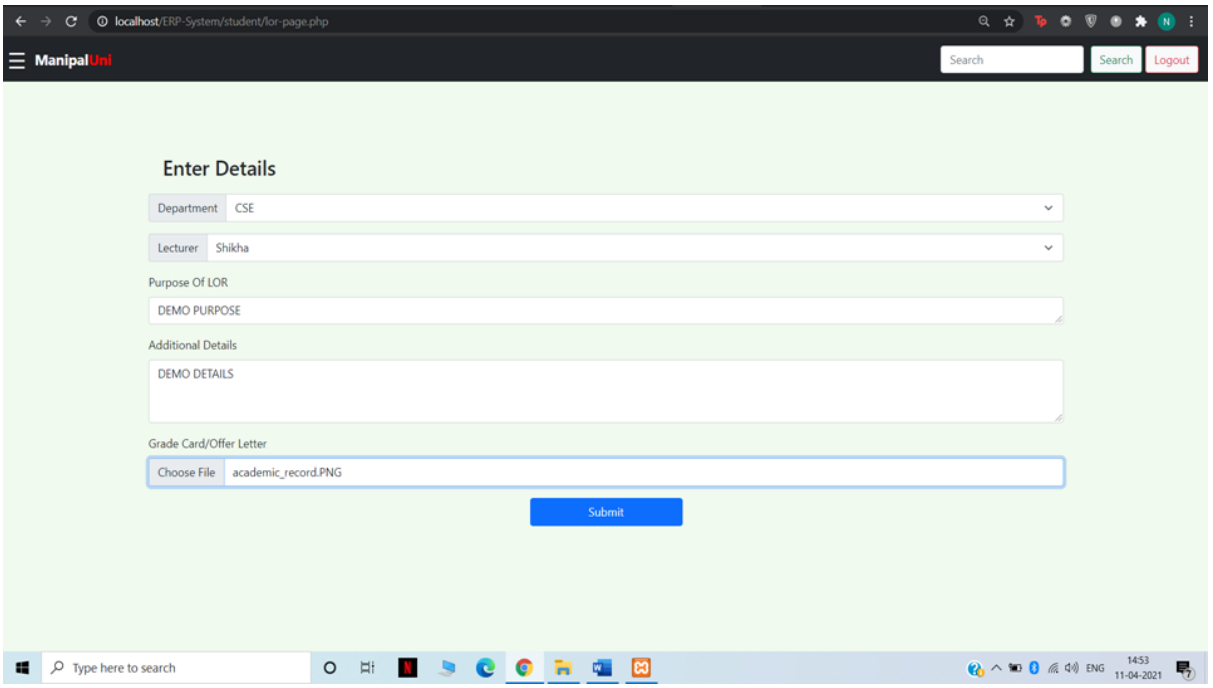

Figure 5 Student LOR Request Form

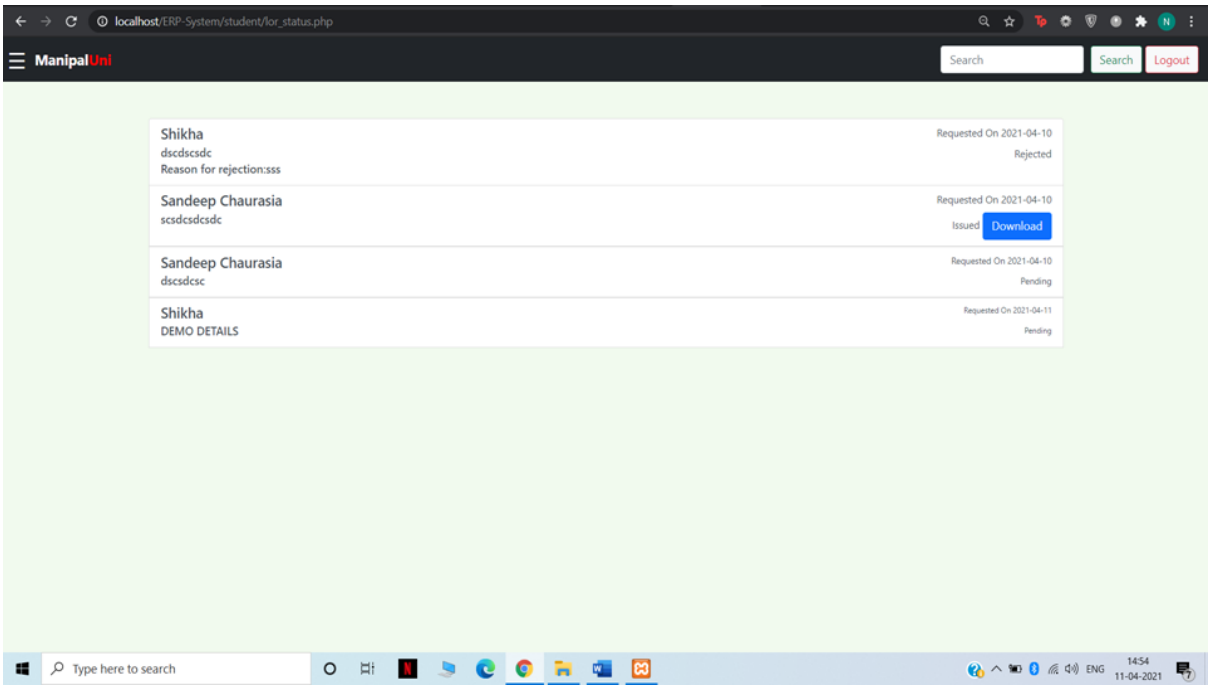

Figure 6 Student LOR Status Page

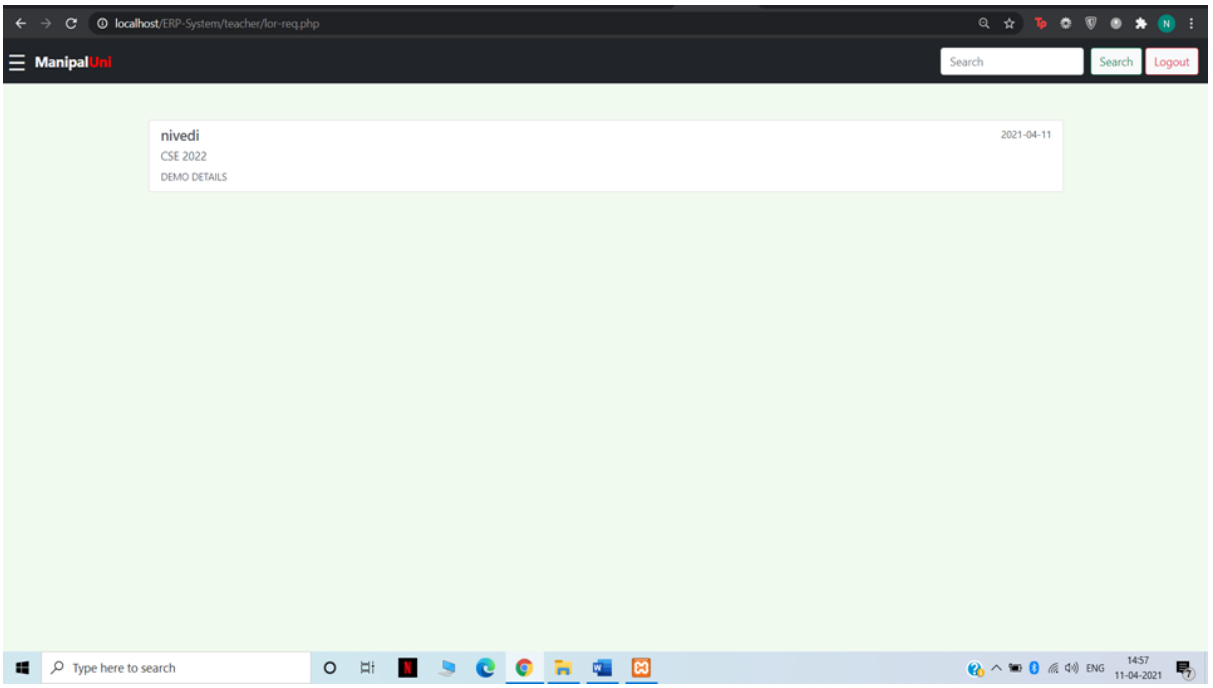

Figure 7 Teacher LOR Page

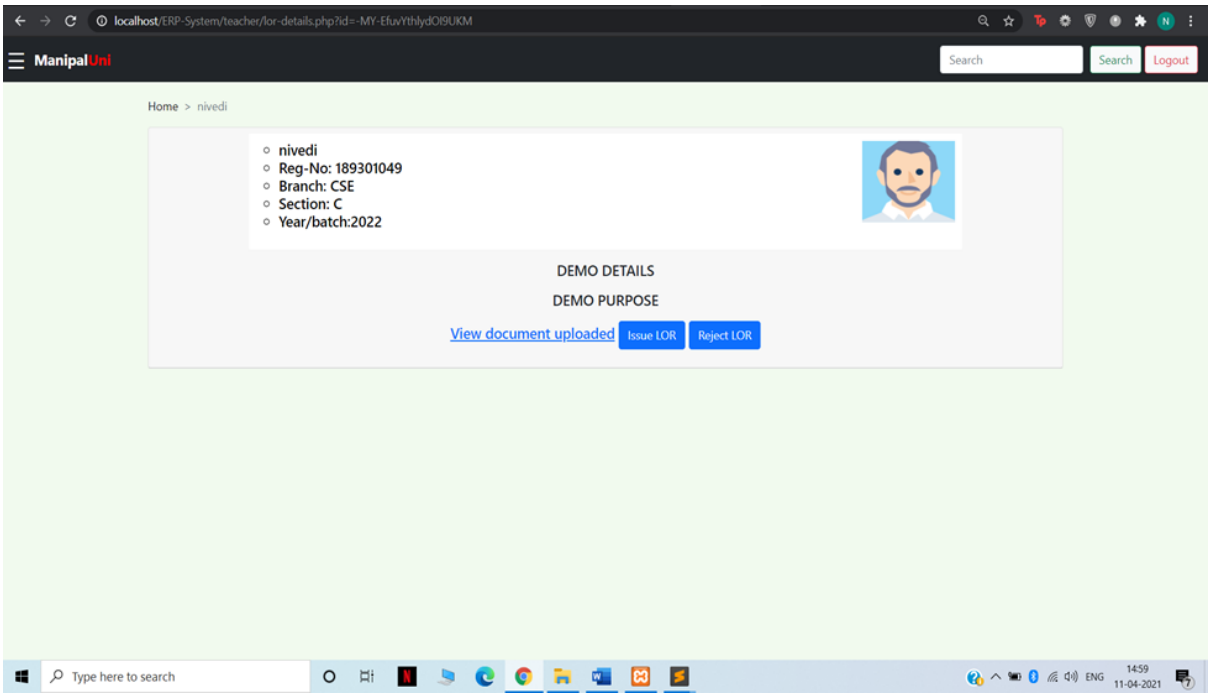

Figure 8 Issue/Reject LOR Teacher Page

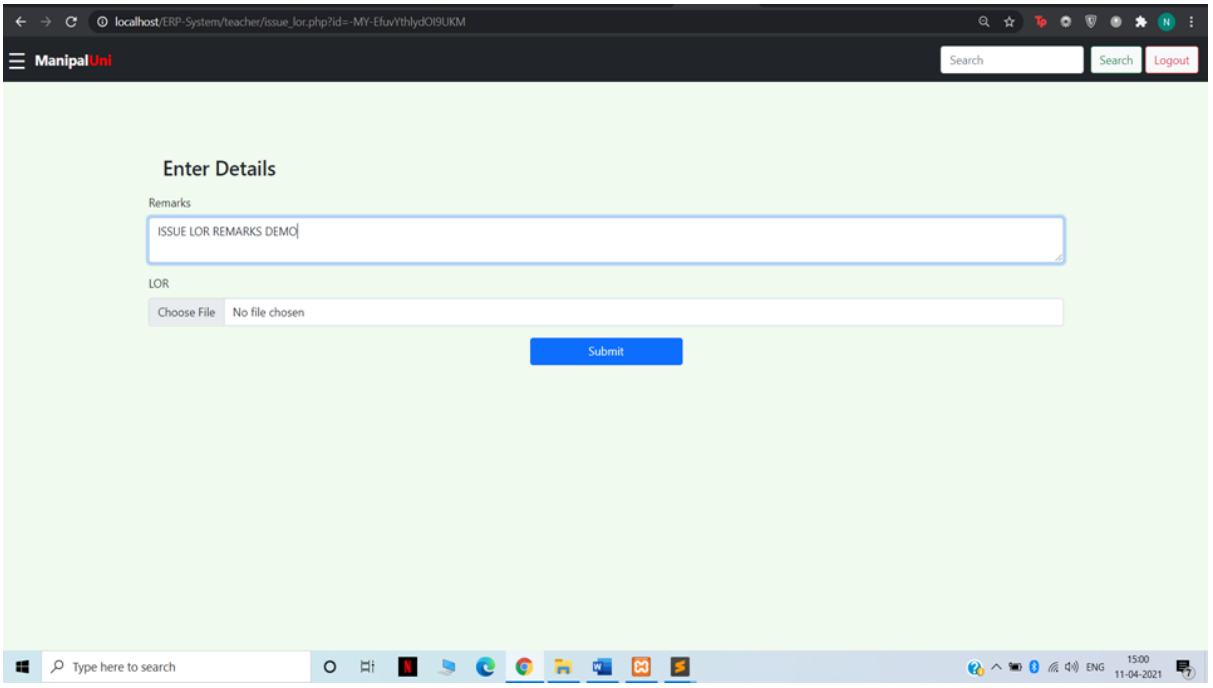

Figure 9 Issue LOR Action Page(Teacher)

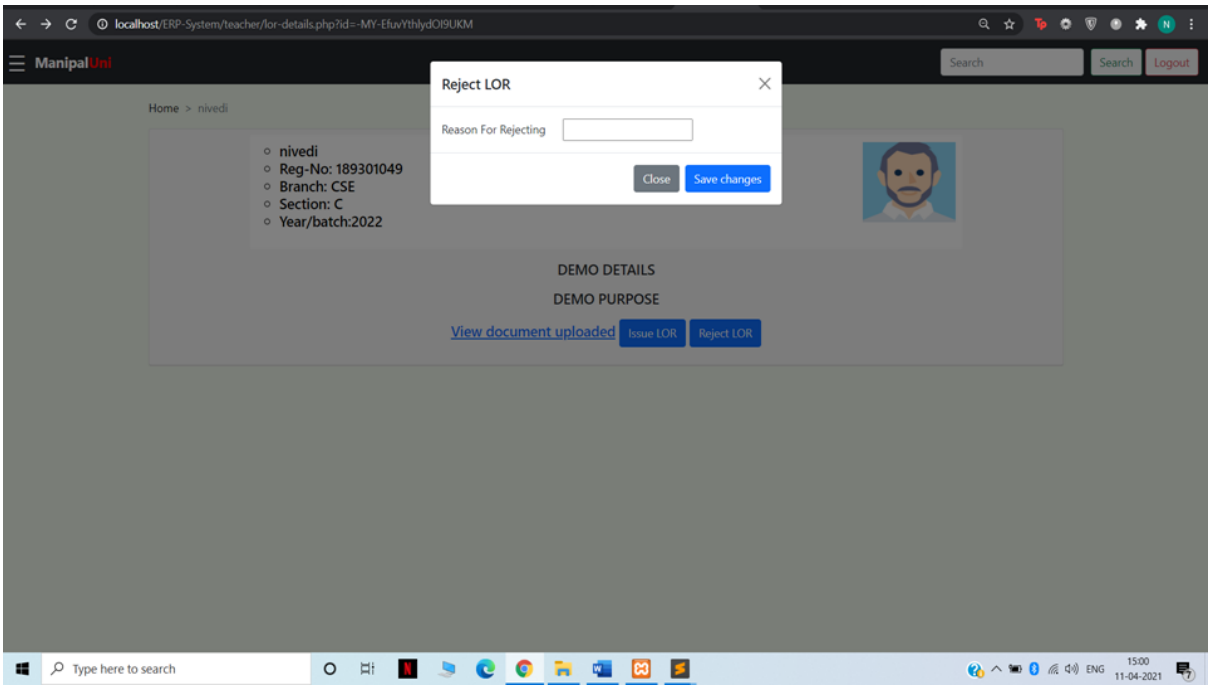

Figure 10 Reject LOR Action Page(Teacher)

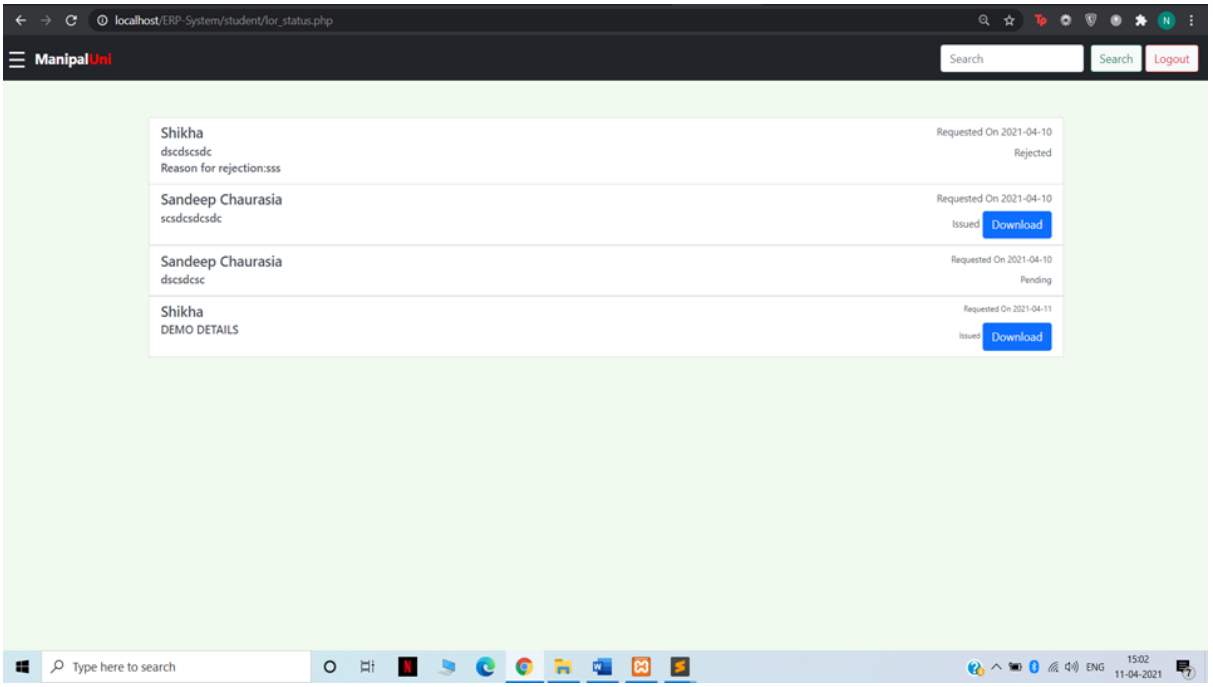

Figure 11 Updated LOR Status Page(Student)

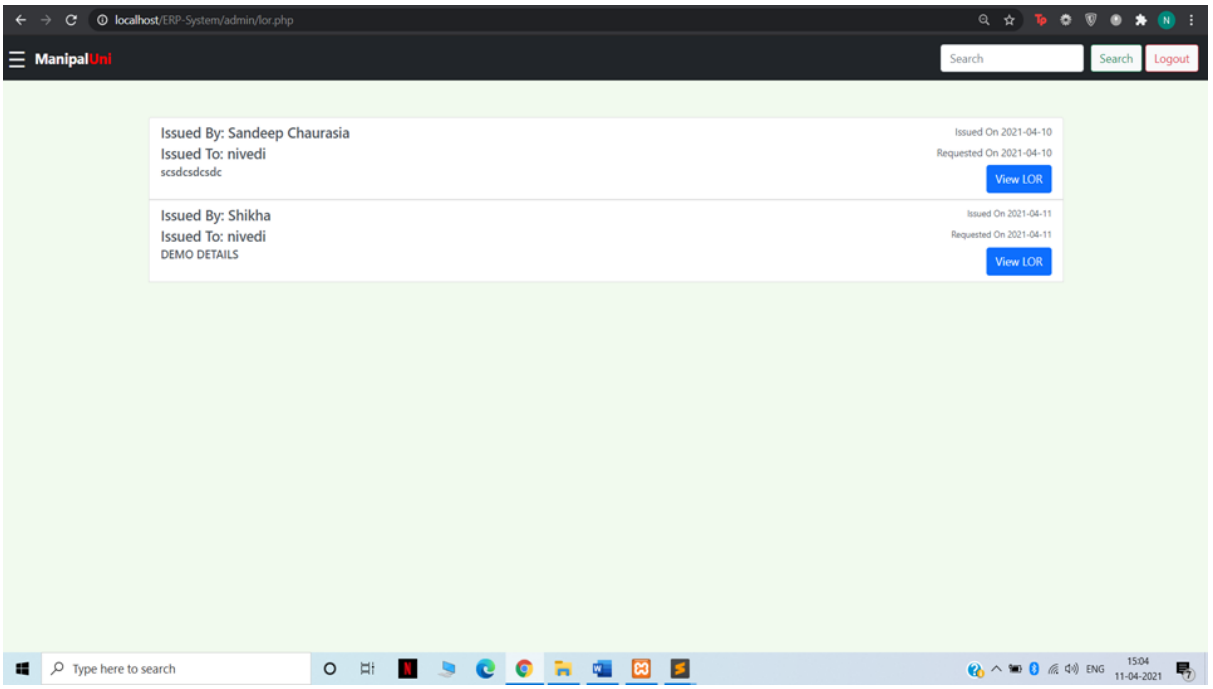

Figure 12 LOR's issued till date Admin Page

4.3.Individual Contribution of project members

Nivedi Singhal: Mainly responsible for the backend integration and database management.
Anapalli Mahi Pritam Reddy: Mainly responsible for the design and frontend development.

5.Conclusion And Future Plan

The fundamental problem in maintaining and managing the work by the administrator is hence overcome. Prior to this it was a bit cumbersome for maintaining the student data. But by developing this web-based application the administrator and teachers can enjoy the task, doing it ease and also by saving valuable time. The amount of time consumption is reduced and also the data is managed easily.
In future we plan to implement a classroom management system where students and faculty will be able to gain access to the availability of classrooms, and a fee management system.

6.References

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