# COLLEGE MANAGEMENT SYSTEM

## MINOR PROJECT REPORT

SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR

THE AWARD OF THE DEGREE OF

**BACHELOR OF TECHNOLOGY**

Information Technology


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**Abstract**

In today's changing environment like covid conditions and busy routines etc, it is very important to respond to students query online via college management system. the college website should provide students all the necessary information and various facilities. the college platform should have all the required basic functionalities that will help the students to maintain their data and everything related to college by sitting at home. the main motive of any college system is to automate all the functionalities like admission, filling of exam form, maintaining attendance, no-dues records etc or we can say in short the college management system should automate all the functionalities from addmission of student to clearance of student. In order to build a well functioning college management site various number of technologies are required that are angular, mysql, git, ldap etc. the main objective of this project is to automate the functionality of no-dues for gne college. the process of clearance in any college is very complex. student has to run from one department to another department in order to verify no dues to get signatures of concerned department.

## ACKNOWLEDGEMENT

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**Gurlivleen Singh Kainth Naman Sood**

**Mansimar Singh Pahwa**

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# 1 Introduction

## 1.1 Introduction to Project Page

Web Development is the basic necessity for any department to work regardless of the outside conditions by sitting at home. now the web development had took a major responsibility to connect people worldwide. in today's environment since covid like pandemic happening in the world it has become an necessity to automate all the functionalities of every department of colleges, universities, e-commerce businesses etc so that the clients and students can access all the data and required information by sitting at home. In College Management system we will be working on the implementation of No-Dues form online on our college portal. this will help the passing out students to hasslefree get the clearance and keep track on their no-dues via online platform. previously in order to get their clearance verified by authorities the students had to run from one department to another and getting signatures of various faculty members like caretaker, mentors, liberarians, hod's etc which is very difficult process. this form implementation will help the students to keep track on their clearance status by sitting at home. the student need not to run here and there in college, the platform will also help the staff as well because now they can update all the records by sitting at their home. its necessity in todays world because of pandemic we need to keep social distance and this automation will help in that. College management System will be helping in all functionalities of student from admission to clearance.

## 1.2 Project Category (Internet based, Application or System Development, Research based, Industry Automation, Network or System Administration)

The project College Management System falls under the category of Web Applicaation Developement, in which the student will have acess to all related credentials via website. this will automate the basic functionalities of college from admission of student to clearance of student. this platfrom will help students and staff as well. the students can keep track on their attendance and notes as well. the main function of this project is to automate the functionality of no-dues form. this will give user a seamless experience to manage everything by sitting at home and work will not stop in any condition.

## 1.3 Objectives

To facilitate students by implementation of No-Dues form. It will also facilitate staff as they can verify the clearance of students by data uploaded by concerned staff.

## 1.4 Problem Formulation

The clearance of No-Dues is very complex, students feel is very difficult to get the process of clearance done, because the process of clearance of No-Dues involves hard work of about 1 - 2 weeks. The students have to go from one department to another in order to get signatures done by staff members, hod's, clerk's, care takers and other faculity members of the college. The main disadvantage of existing system is alot of time wastage, and sometimes if anyone from the concerned department is not available then process gets more delayed. The speed of getting clearance done is directly proportional to outside circumstances.

This solution helps to automate the functionality of No-Dues, through this website we can achieve totally paperless no-dues form. It will make the process of clearance of no-dues easy for the passing out students. The students can now keep track on no-dues and the staff members can update the data by sitting at there home. The main motive of entire project is to tottaly bring college activities and works on online platform.

## 1.5 Identification/Reorganization of Need

1. **Complete Control**:

   The website will provide complete control on the staff side and student end. staff can regularly check on performance of students and students can maintain their credientials easily by sitting anywhere.

2. **An Eagle Eye of Administrator**:

   The web application will provide an eagle eye to administrator for looking after any suspicious activity happening. the administrator can verify identity of each and every student. the administrator only have the power to allow or disallow any student accessing the website.

3. **Easy Accessibility/ Portability**:

   The web application will provide high portability to students as well as teachers and staff members. anyone from college can easily access the data.

4. **A Move towards paperless system**:

   This initiative will bring revolution in this world when every work will happen paperless it will save our environment because production of paper requires trees and cutting of trees will lead to decrease in oxygen level on earth.

5. **Boosts Connectivity**:

   This initiative will boost the connection between college and students everything regarding college now can be accessed by sitting at homespace.

6. **Benefit for students and staff** :

   It will benefit both students and staff members. as now students can stay updated via college website and teachers and administration department can update the data easily from anywhere.

## 1.6 Existing System

The existing system of clearance of No-Dues is very complex. students feel is very difficult to get the process of clearance done, because the process of clearance of No-Dues involves hard work of about 1 week. the students have to run from one department to another in order to get signatures done from teachers, staff members, hod's, clerk's, care takers etc. The main disadvantage of existing system is alot of time wastage, and sometimes if anyone from the concerned department is not available then process gets more delayed. The speed of getting clearance done is directly proportional to outside circumstances. Like in these days due to pandemic no one can reach to campus for the clearance.

### 1.7 Proposed System

The proposed system helps to automate the functionality of No-Dues. Through this website we can achieve totally paperless no-dues form. It will make the process of clearance of no-dues easy for the passing out students. The students can now keep track on no-dues and the staff members can update the data by sitting at there home. This process will also save paper which will save the environment by saving trees, the website also provide various functionalities. The main motive of entire project is to tottaly bring college activities and works online platform.

### 1.8 Unique Features of the System

The student can also download the summary of dues in pdf format which will help students to verify each and everything.

## 2 Requirement Analysis and System Specification

### 2.1 Feasibility Study (Technical, Economical, Operational)

Feasibility is the determination of whether or not a project is worth doing. This type of study determines if a project can and should be taken. A feasibility study is carried out to select the best system that meets performance requirements. A feasibility study of a system proposal is according to its workability, which is the impact on the organization, ability at meet their user needs and eective use of resources. Thus when a new application is proposed it normally goes through a feasibility study before it is approved for development. The document provide the feasibility of the project that is being designed and lists various areas that were considered very carefully during the feasibility study of this project such as Technical, Economic and Operational feasibilities . To check whether the proposed system is worth making or not I conducted the feasibility study in which I studied the following aspects.

1. **Economic Feasibility**:

   This project is based on web application development with low-cost electronic components such as my Processor, camera modules, and relay switches which are the most cost-eective structures to construct

2. **Technical Feasibility**:

   This proposal is based on wireless radios that are incorporated in a way that is reasonably in phase with current technology. As a result, it is highly valued by technology.

3. **Operational Feasibility**:

This programme will feature a simple, user-friendly interface that will appeal to anyone with a basic understanding of how to operate an website. the interface is very simple with simple operations that can help students to easily use any website.

## 2.2 Software Requirement Specification Document which must include the following: (Data Requirement, Functional Requirement, Performance Requirement, Dependability Requirement, Maintainability requirement, Security Requirement, Look and feel requirement)

**SRS Documentation for it includes –**

### 2.2.1 Introduction

In order to make a proper working college management system we have to lookafter for various software requirements on the basis of various fields. as we want our website to be secured from suspicious users we have to implement some authentcation which will help system to verify student. so that to grant the access further.

### 2.2.2 Purpose

Main objective of college management system project is to record various details of activities of the college. It will simplify college work. This system can maintain huge number of college records including student, course, attendance, employee etc. College management project is designed to remove all the deficiency of the current system.

### 2.2.3 System Features and Requirements

1. **Data Requirements**
   (a) Data must be fetched from the administrator or faculty side so that students can fetch their credentials easily.
   (b) Students can also input their personal information. they can also make edit to their personal details which can be stored in database.
2. **Functional Requirements**
   (a) The functionalities that a developer must incorporate into software to accomplish use cases are referred to as functional requirements.
   (b) These functions will be built in such a way that student independent system-to-system communication is possible like Signup.

(c) Login are the function requirements.

3. **Performance Requirements**

   (a) If the system is not connected, it must not add more than two seconds to the time it takes to accomplish an action.

   (b) There must be no more than a ten-second delay in the logging of researcher data to the research centre.

   (c) The speed with which directives are provided to the system will be affected by the effciency of the software code.

4. **Maintainability Requirements**

   The system is as simple to use as feasible, with all capabilities accessible. the framework used for building must be easy so that maintainability should be easy.

5. **Security Requirement**

   (a) As the system is meant to run on a network like the internet, there are security concerns connected with utilising it.

   (b) When evaluating the system, the user must ensure that intruders, such as hacker attempts and third-party invasions, are prevented from gaining access.

## 2.3 Expected hurdles

1. There are several external and internal hurdles that are associated with our project. As we working with Angular so the system requirement for angular must be 64 bit for good performance.
2. Many problems arises while setting up the angular.
3. As we are working on MySql so it is an difficult task to setup connection of MySql to frontend.
4. Too many attempts for making secure connection with MySql.
5. As we working with ldap it is an difficult task to perform authentication for both student and staff side..

## 2.4 Validation

To validate the performance of our system a software and hardware implementation is done.

1. **MANUAL-SCENARIO IMPLEMENTATION:**

   For the hardware implementation(manual scenario), we have made various attempts at local host to check for proper working of program.

2. **AUTOMATIC-SCENARIO IMPLEMENTATION:**

   By checking its url with host checker we can easily validate whether a site i properly working or not. it will definately validate that our work is on right path or not.

# 3 System Design

## 3.1 System Design using various structured analysis and design tools such as: DFD's, Data Dictionary, Structured charts, Flowcharts or UML

1. Flow Chart -

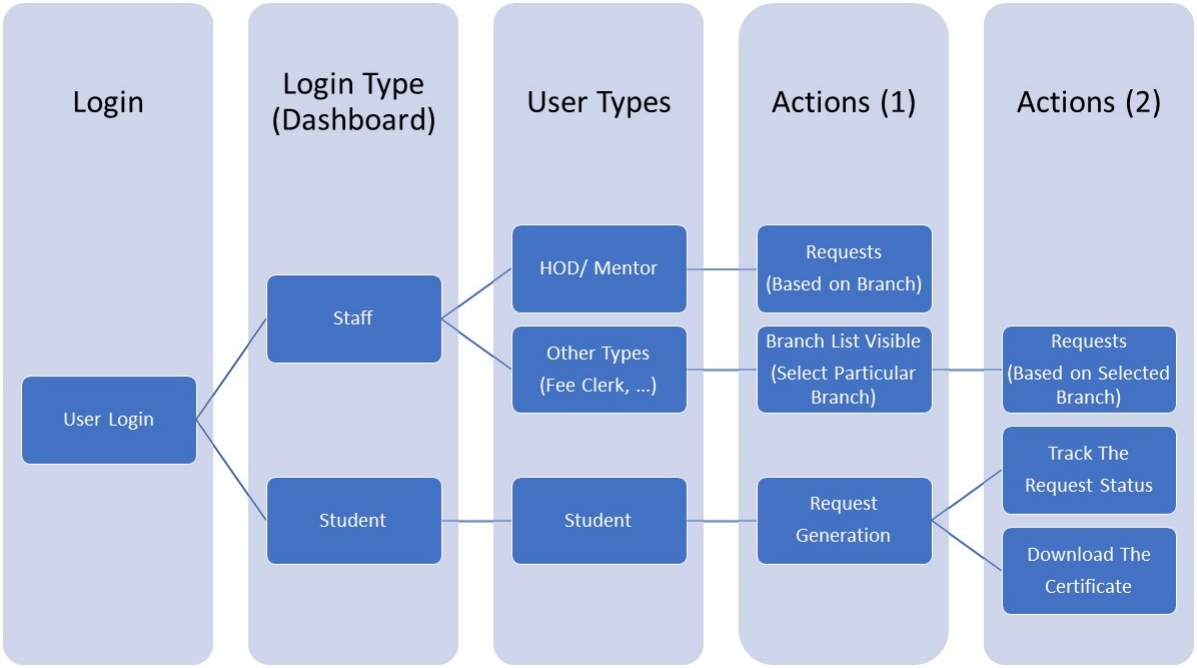


Figure 1: Flow Chart

## 3.2 Methodology

1. Divide the application in two major parts - FRONTEND (includes Angular) and BACKEND (Ldap, Mysql).
2. Design a frontend for user interface and then make connection with MySql.
3. First module is User Interface which includes: Authentication screen that contains sign in/sign up page, forget password.
4. Second module is Authentication module which includes: Sign in/ sign up page (Ldap authentication)
5. The system will detect whether the login is from staff side or student side.
6. When the user requests for the data, system will find for to which branch student belong to.
7. Then after knowing to branch the student can request for the detailed summary of dues.
8. After that student will be redirected to a page where student can download the pdf format for no-dues form and summary of dues.

# 4 Implementation, Testing, and Maintenance

## 4.1 Introduction to Languages, IDE's, Tools and Technologies used for Implementation

1. **Angular**:

   AngularJS is a JavaScript -based open-source front-end web framework mainly maintained by Google and by a community of individuals and corporations to address many of the challenges encountered in developing single-page applications. it is available for various operating systems like windows, linux, ios etc. it is used to make very attractive and responsive single page web applications.

2. **Git**:

   Git is a version control system used for tracking changes in computer files. It is generally used for source code management in software development. Git is used to tracking changes in the source code The distributed version control tool is used for source code management.Version control is a system that records changes to a file or set of files over time so that you can recall specific versions later.

3. **LDAP**:

   The Lightweight Directory Access Protocol is an open, vendor-neutral, industry standard application protocol for accessing and maintaining distributed directory information services over an Internet Protocol (IP) network. Directory services play an important role in developing intranet and Internet applications by allowing the sharing of information about users, systems, networks, services, and applications throughout the network. As examples, directory services may provide any organized set of records, often with a hierarchical structure, such as a corporate email directory. Similarly, a telephone directory is a list of subscribers with an address and a phone number.

4. **Express**:

   Express is a minimal and flexible Node.js web application framework that provides a robust set of features for web and mobile applications. With a myriad of HTTP utility methods and middleware at your disposal, creating a robust API is quick and easy.

5. **MySql**:

   MySQL is a full-featured relational database management system (RDBMS) that competes with the likes of Oracle DB and Microsoft's SQL Server. MySQL is sponsored by the Swedish company MySQL AB, which is owned by Oracle Corp. However, the MySQL source code is freely available because it was originally developed as freeware.the mysql commands are very easy to run they are very fast in processing. MYSQL will help to maintain data and enteries in table form. MYSQL makes the task easy to check on

data for particular student. MYSQL commands makes the task pretty easy to query database and data becomes easily accessible. MYSQL is easy to use . It does not require much skills. It is portable. It can be used in programs in pc's , laptops. It have faster query processing .

## 4.2 Coding standards of Language used

1. **Single Responsibility**

   Apply the single responsibility principle (SRP) to all components, services, and other symbols. This helps make the app cleaner, easier to read and maintain, and more testable.

2. **General Naming Guidelines**

   Do use consistent names for all symbols and the recommended pattern is - feature.type.ts.

3. **Separate file names with dots and dashes**

   (a) Do use dashes to separate words in the descriptive name.

   (b) Do use dots to separate the descriptive name from the type.

   (c) Do use consistent type names for all components following a pattern that describes the component's feature then its type. A recommended pattern is feature.type.ts.

4. **Symbols and file names**

   (a) Do use consistent names for all assets named after what they represent.

   (b) Do use upper camel case for class names.

   (c) Do match the name of the symbol to the name of the file.

   (d) Do append the symbol name with the conventional suffix (such as Component, Directive, Module, Pipe, or Service) for a thing of that type.

5. **Bootstrapping**

   (a) Do put bootstrapping and platform logic for the app in a file named main.ts.

   (b) Do include error handling in the bootstrapping logic.

   (c) Avoid putting app logic in main.ts. Instead, consider placing it in a component or service.

6. **Directive custom prefix**

   (a) Do use a custom prefix for the selector of directives (e.g, the prefix toh from Tour of Users).

   (b) Do spell non-element selectors in lower camel case unless the selector is meant to match a native HTML attribute.

7. **Component custom prefix**

   (a) Do use a hyphenated, lowercase element selector value; for example, admin-users.

   (b) Do use a custom prefix for a component selector.

   (c) Do use a prefix that identifies the feature area or the app itself.

8. **Unit test file names**

   (a) Do name test specifications file the same as the component they test.

   (b) Do name test specification files with a suffix of .spec.

9. **Pipe Names**

   Do use consistent names for all pipes, named after their feature. The pipe class name should use UpperCamelCase and the corresponding name string should use lowerCamelCase. The name string cannot use hyphens

## 4.3 Testing Techniques and Test Plans

A test plan is one of the most important parts of any software development process. It outlines how you'll make sure your product or feature will do what it's supposed to and not break when your users need it most. A test plan is a detailed document that outlines the test strategy, objectives, resources needed, schedule, and success criteria for testing a specific new feature or piece of software. The main goal, of course, is to discover defects, errors, and any other gap that might cause the software to not act as intended or provide a bad experience for your users. More specifically, a test plan ensures your software: Meets the requirements that guided its design and development Responds correctly to all kinds of inputs Lives up to the performance standards you've outlined and can be used as intended Can be installed and run in all intended environments Achieves the results you and your stakeholders are after

# 5 Results and Discussions

## 5.1 User Interface Representation

### 5.1.1 Brief Description of Various Modules of the system

1. **No-Dues Summary**:

   The platform will provide a breif summary of the dues of particular student of any department. the fetched summary will be based on the data provided to system by the staff and faculty

2. **Secure Login and Logout**:

   LDAP authentication made the user login very secure when the person fill details it verify by making connection to application programming interface and then proceed further to the college website.

3. **Database management**:

   Our website performs its best in terms of database management because here the student can edit related credentials if required. the data is stored in form of tables via rows and columns through which it is easy to read and write. mysql commands are very easy and runs very fast. so data is properly managed.

4. **User specified redirection**:

   The API will fetch the login id from database and then check whether user is any student or staff member, if it is student then it will redirect student to student specified site. if it is found teacher then it will redirect teacher to teacher's platform.

5. **Easy Access**:

   There is easy access to database whether its from students side or faculty side.

## 5.2 Snapshots of system

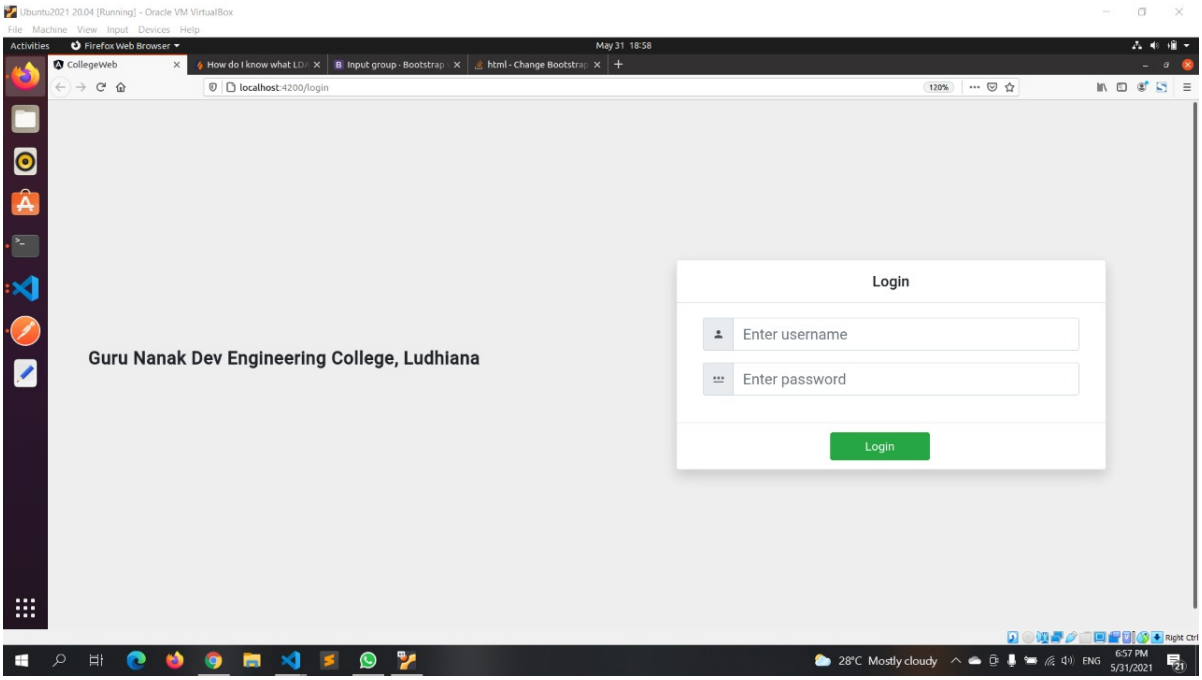


Figure 2: Login Component

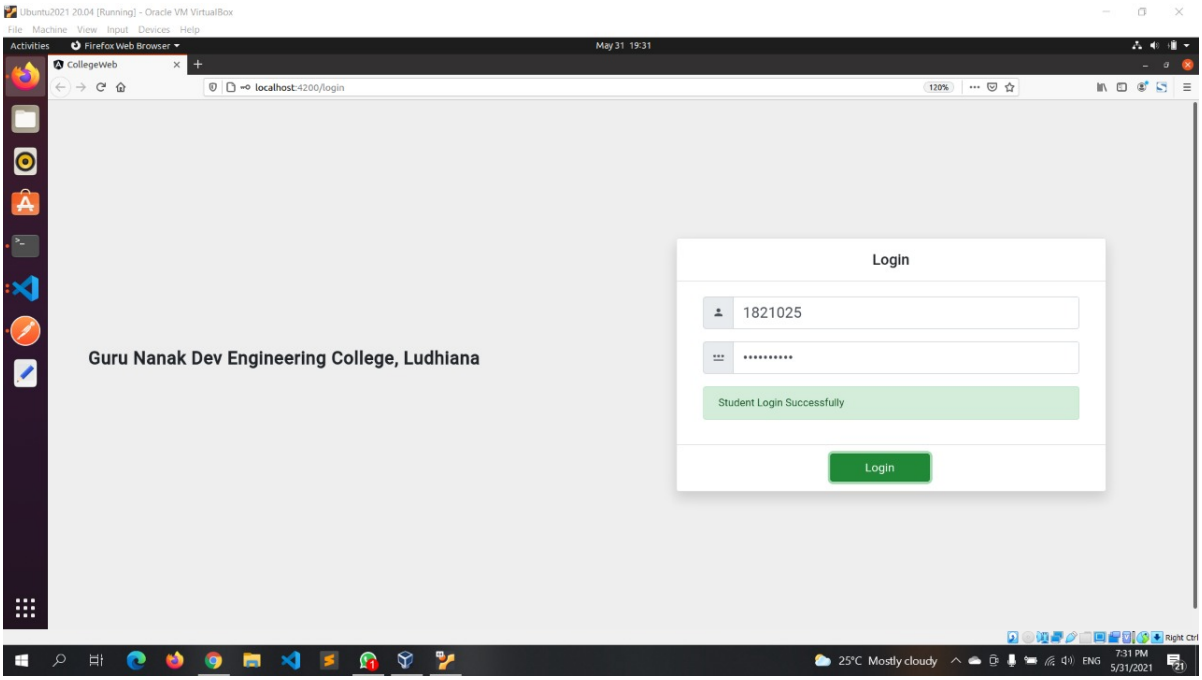


Figure 3: Student Login Successfully

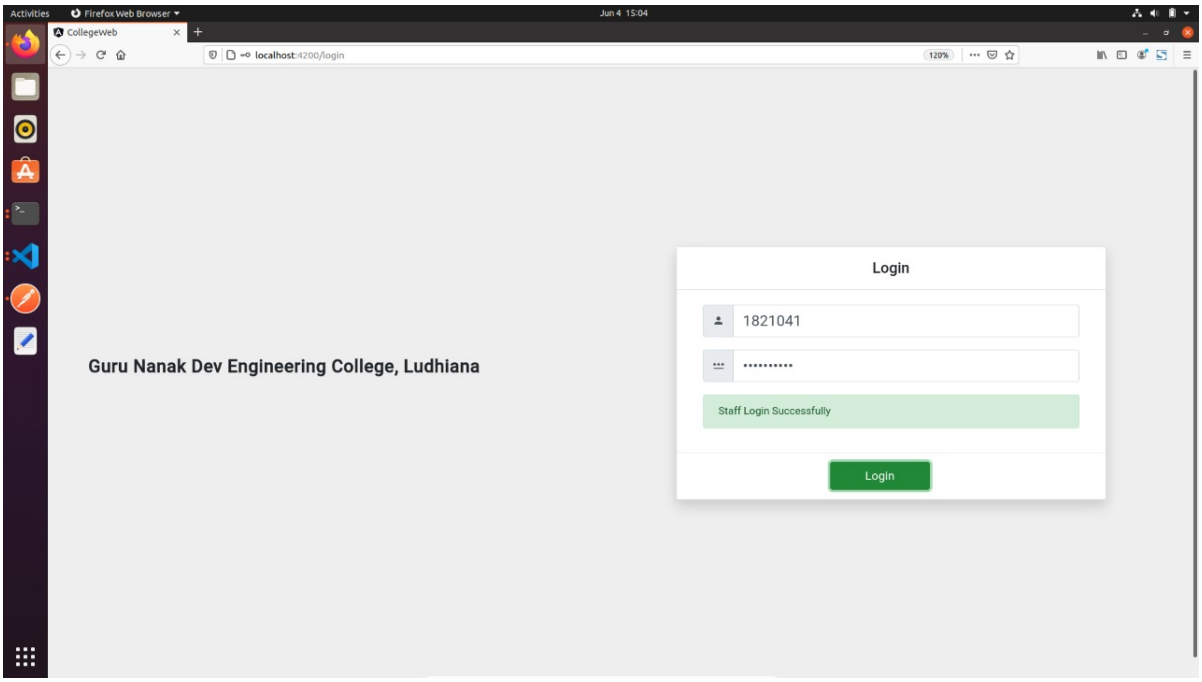


Figure 4: Staff Login Successfully

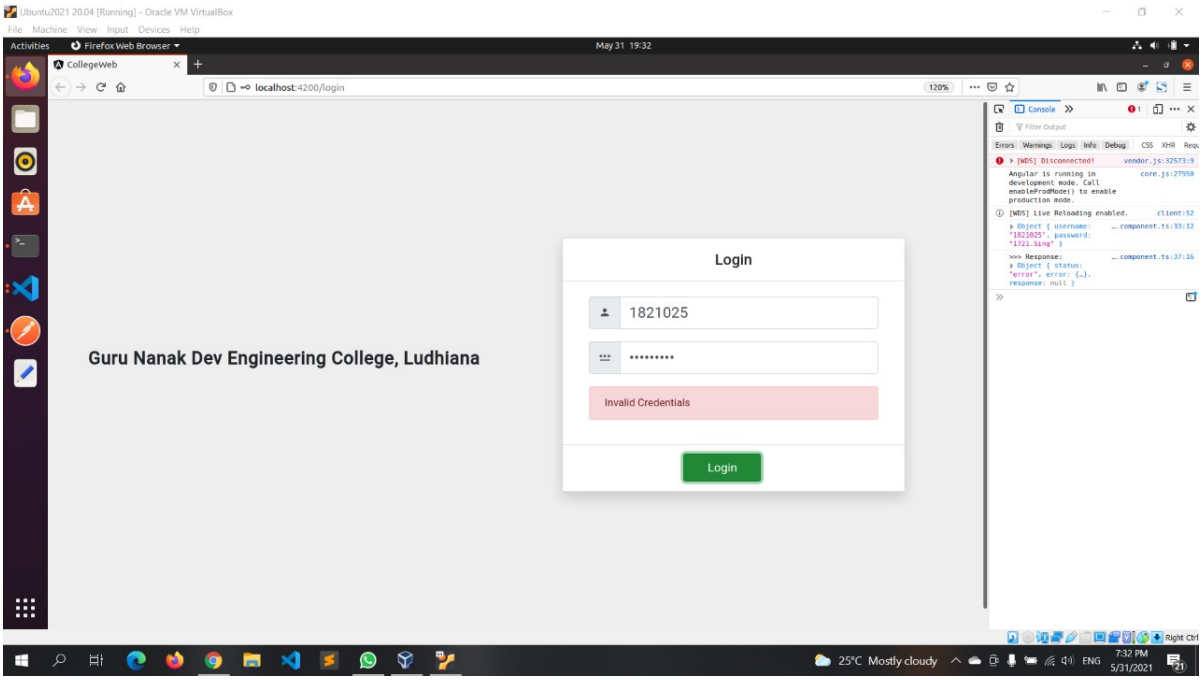


Figure 5: When user enter invalid credential

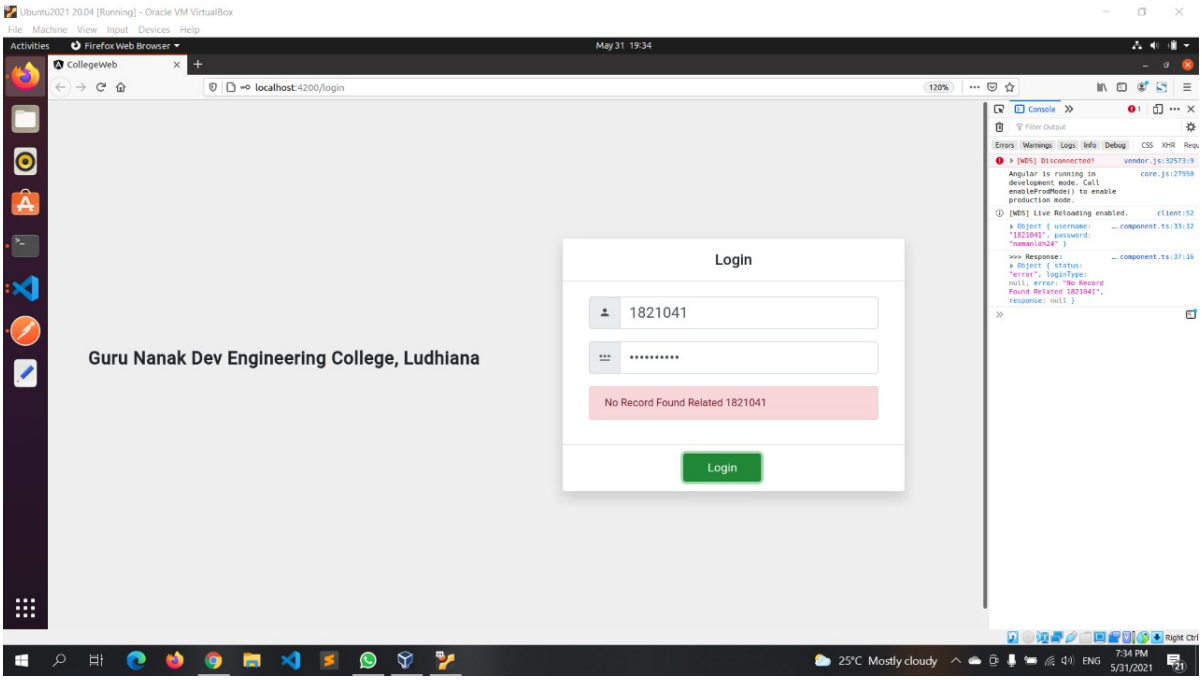


Figure 6: When User Details Not Found in Database

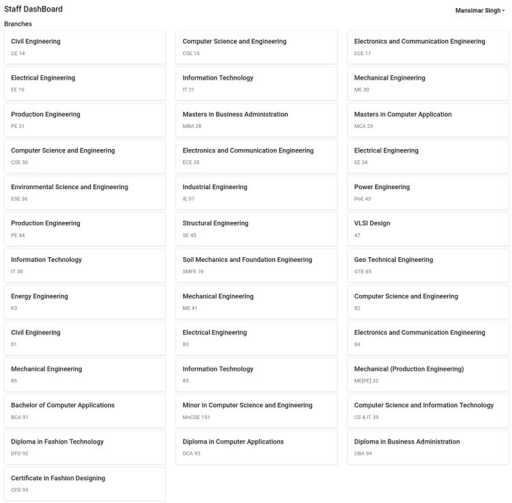


Figure 7: Staff Dashboard

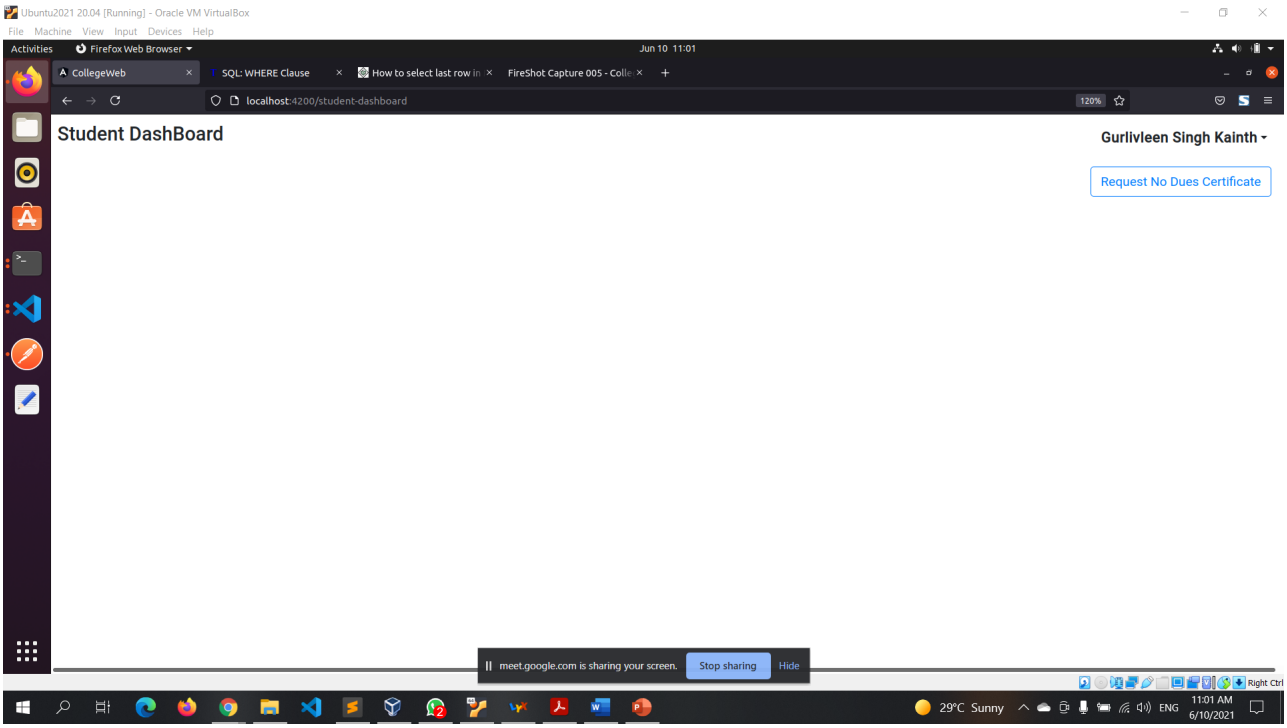


Figure 8: Student-Side Dashboard

Student DashBoard

Gurlivleen Singh Kainth

Request No Dues Certificate

| Sr. No | University Roll No | Verfied By | Verification Status | Amount | Request Created | Request Accepted |
|---|---|---|---|---|---|---|
| 1 | 1805511 | hod | Not Verified | 0 | 2021-06-10 11:20:52 | Not Accepted Yet |
| 2 | 1805511 | feeClerk | Not Verified | 0 | 2021-06-10 11:20:52 | Not Accepted Yet |
| 3 | 1805511 | careTaker | Not Verified | 0 | 2021-06-10 11:20:52 | Not Accepted Yet |
| 4 | 1805511 | clgLibrary | Not Verified | 0 | 2021-06-10 11:20:52 | Not Accepted Yet |
| 5 | 1805511 | supdt | Not Verified | 0 | 2021-06-10 11:20:52 | Not Accepted Yet |
| 6 | 1805511 | chiefWarden | Not Verified | 0 | 2021-06-10 11:20:52 | Not Accepted Yet |
| 7 | 1805511 | recordKeeper | Not Verified | 0 | 2021-06-10 11:20:52 | Not Accepted Yet |
| 8 | 1805511 | academicClerk | Not Verified | 0 | 2021-06-10 11:20:52 | Not Accepted Yet |
| 9 | 1805511 | messAccountant | Not Verified | 0 | 2021-06-10 11:20:52 | Not Accepted Yet |
| 10 | 1805511 | programCoordinator | Not Verified | 0 | 2021-06-10 11:20:52 | Not Accepted Yet |
| 11 | 1805511 | advisor/supervisor | Not Verified | 0 | 2021-06-10 11:20:52 | Not Accepted Yet |
| 12 | 1805511 | training&Placement | Not Verified | 0 | 2021-06-10 11:20:52 | Not Accepted Yet |
| 13 | 1805511 | uniLibraryExtension | Not Verified | 0 | 2021-06-10 11:20:52 | Not Accepted Yet |

Figure 9: Request Generated

## 5.3 Back Ends Representation

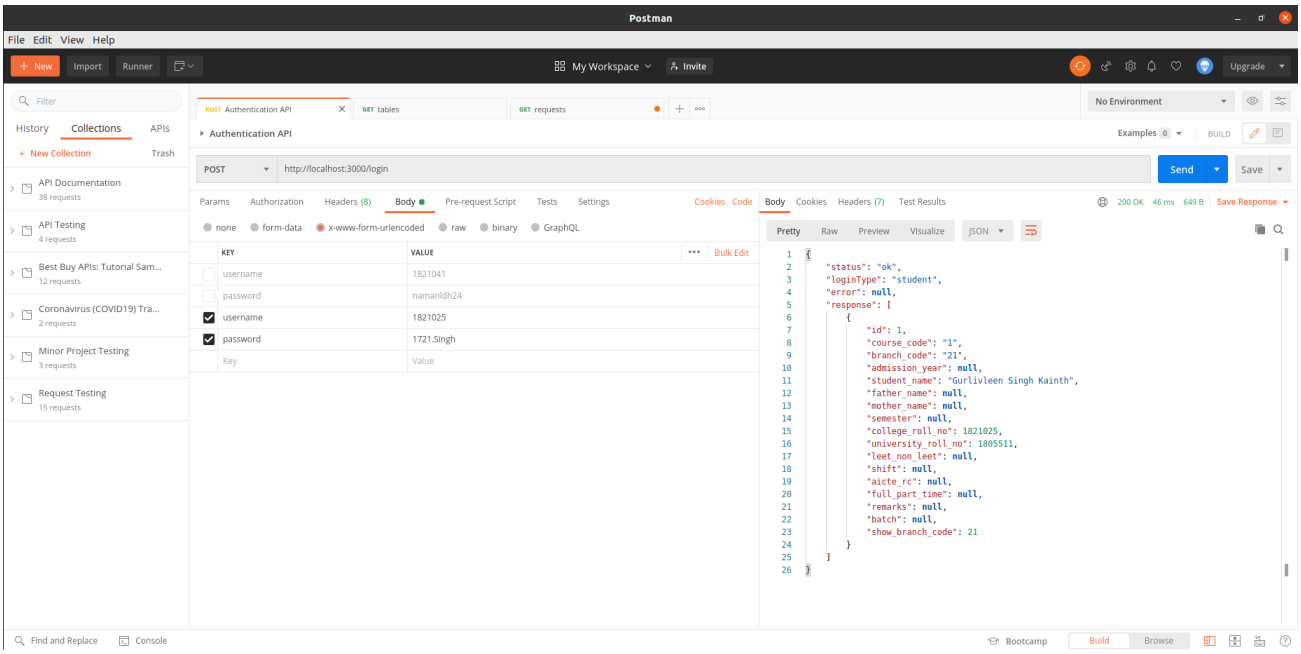


Figure 10: Testing Login API - Student Login

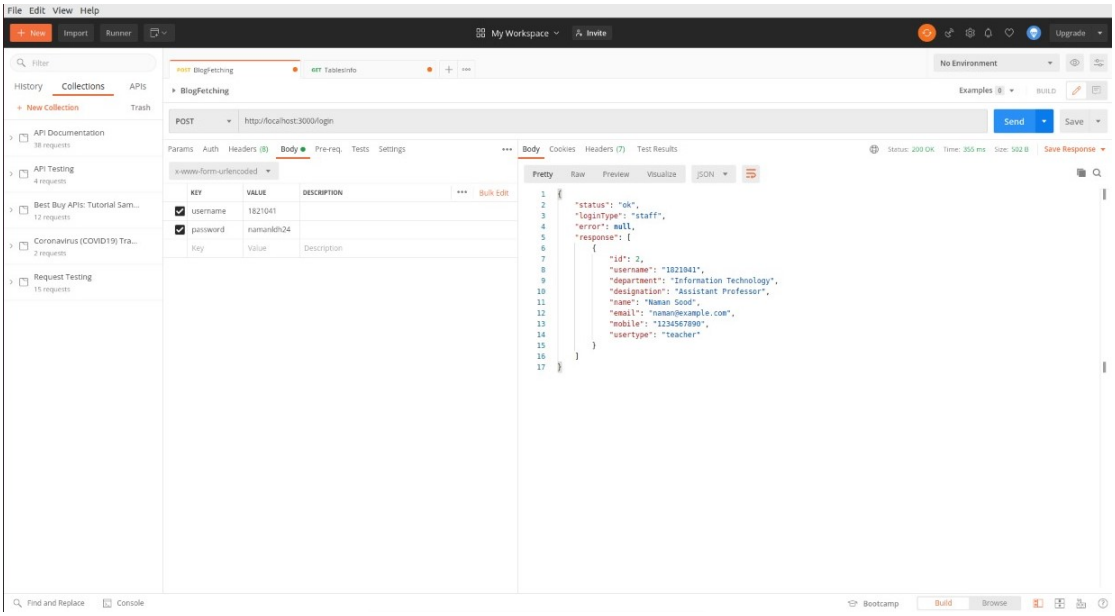


Figure 11: Testing Login API - Staff Login

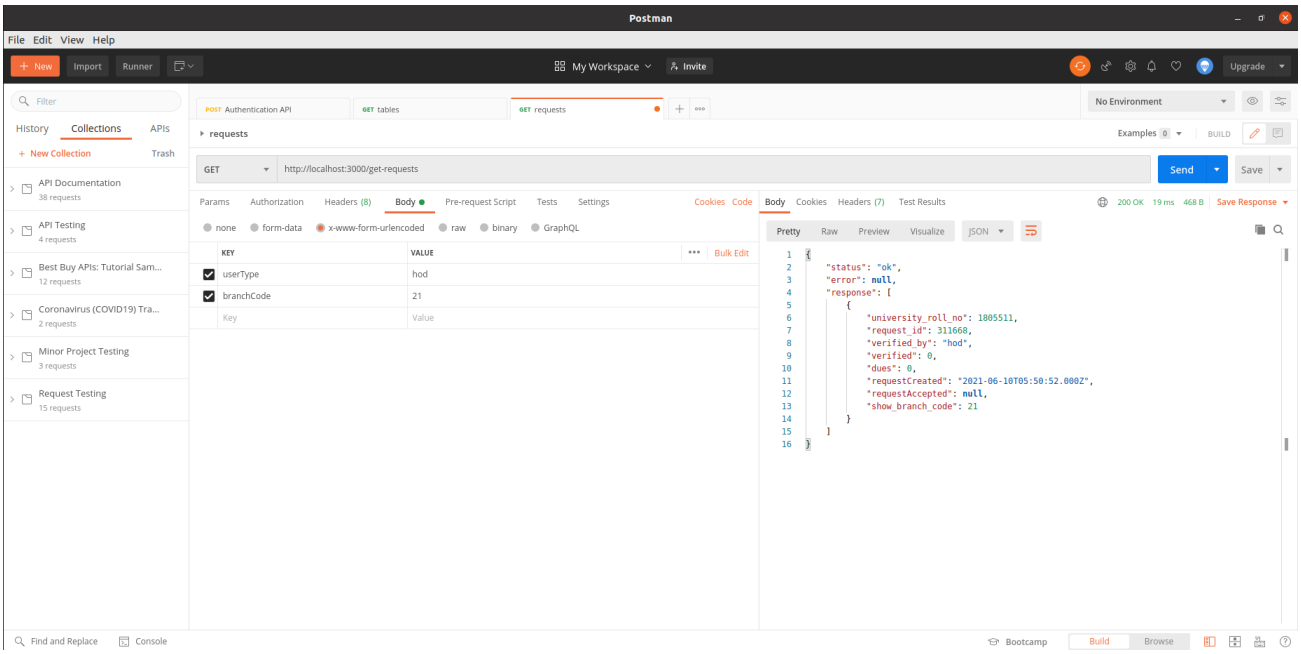


Figure 12: Testing - Get Request Details

### 5.3.1 Snapshots of Database Tables with brief description

```
mysql> select * from branch_code;
+-------------+-----------------------------------------+-------------+------------+
| course_code | branch_name                             | branch_code | short_name |
+-------------+-----------------------------------------+-------------+------------+
|           1 | Civil Engineering                       |          14 | CE         |
|           1 | Computer Science and Engineering        |          15 | CSE        |
|           1 | Electronics and Communication Engineering |          17 | ECE        |
|           1 | Electrical Engineering                  |          16 | EE         |
|           1 | Information Technology                  |          21 | IT         |
|           1 | Mechanical Engineering                  |          30 | ME         |
|           1 | Production Engineering                  |          31 | PE         |
|           3 | Masters in Business Administration      |          28 | MBA        |
|           4 | Masters in Computer Application         |          29 | MCA        |
|           2 | Computer Science and Engineering        |          50 | CSE        |
|           2 | Electronics and Communication Engineering |          35 | ECE        |
|           2 | Electrical Engineering                  |          34 | EE         |
|           2 | Environmental Science and Engineering   |          36 | ESE        |
|           2 | Industrial Engineering                  |          37 | IE         |
|           2 | Power Engineering                       |          43 | PoE        |
|           2 | Production Engineering                  |          44 | PE         |
|           2 | Structural Engineering                  |          45 | SE         |
|           2 | VLSI Design                             |          47 | NULL       |
|           2 | Information Technology                  |          38 | IT         |
|           2 | Soil Mechanics and Foundation Engineering |          76 | SMFE       |
|           2 | Geo Technical Engineering               |          65 | GTE        |
|           2 | Energy Engineering                      |          63 | NULL       |
|           2 | Mechanical Engineering                  |          41 | ME         |
|           6 | Computer Science and Engineering        |          82 | NULL       |
|           6 | Civil Engineering                       |          81 | NULL       |
|           6 | Electrical Engineering                  |          83 | NULL       |
|           6 | Electronics and Communication Engineering |          84 | NULL       |
|           6 | Mechanical Engineering                  |          86 | NULL       |
|           6 | Information Technology                  |          85 | NULL       |
|           1 | Mechanical (Production Engineering)     |          32 | ME[PE]     |
|           7 | Bachelor of Computer Applications       |          91 | BCA        |
|           1 | Minor in Computer Science and Engineering |         151 | MnCSE      |
|           2 | Computer Science and Information Technology |          39 | CS & IT    |
|           8 | Diploma in Fashion Technology           |          92 | DFD        |
|           8 | Diploma in Computer Applications        |          93 | DCA        |
|           8 | Diploma in Business Administration      |          94 | DBA        |
|           9 | Certificate in Fashion Designing        |          95 | CFD        |
+-------------+-----------------------------------------+-------------+------------+
37 rows in set (0.00 sec)
```

Figure 13: Branch table

```
mysql> select * from course_code;
+-----------------+--------------+--------------+
| course_code_id | course_name | course_code |
+-----------------+--------------+--------------+
| 1               | B.Tech.      | 1            |
| 2               | M.Tech.      | 2            |
| 3               | MBA          | 3            |
| 4               | MCA          | 4            |
| 5               | Ph.D.        | 6            |
| 6               | B. Arch.     | 5            |
| 7               | BCA          | 7            |
+-----------------+--------------+--------------+
7 rows in set (0.00 sec)
```

Figure 14: Course Table

```
mysql> select * from no_dues_certificate_requests;
+-----------------------+-------------------+--------------+--------------------+----------+------+---------------------+-----------------+----------------+
| student_name          | university_roll_no | request_id   | verified_by        | verified | dues | requestCreated      | requestAccepted | show_branch_code |
+-----------------------+-------------------+--------------+--------------------+----------+------+---------------------+-----------------+----------------+
| Gurlivleen Singh Kainth |           1805511 | 1623170835158 | hod                |        0 |    0 | 2021-06-08 10:17:15 | NULL            |             21 |
| Gurlivleen Singh Kainth |           1805511 | 1623170835158 | feeClerk           |        0 |    0 | 2021-06-08 10:17:15 | NULL            |             21 |
| Gurlivleen Singh Kainth |           1805511 | 1623170835158 | careTaker          |        0 |    0 | 2021-06-08 10:17:15 | NULL            |             21 |
| Gurlivleen Singh Kainth |           1805511 | 1623170835158 | clgLibrary         |        0 |    0 | 2021-06-08 10:17:15 | NULL            |             21 |
| Gurlivleen Singh Kainth |           1805511 | 1623170835159 | supdt              |        0 |    0 | 2021-06-08 10:17:15 | NULL            |             21 |
| Gurlivleen Singh Kainth |           1805511 | 1623170835159 | chiefWarden        |        0 |    0 | 2021-06-08 10:17:15 | NULL            |             21 |
| Gurlivleen Singh Kainth |           1805511 | 1623170835159 | recordKeeper       |        0 |    0 | 2021-06-08 10:17:15 | NULL            |             21 |
| Gurlivleen Singh Kainth |           1805511 | 1623170835159 | academicClerk      |        0 |    0 | 2021-06-08 10:17:15 | NULL            |             21 |
| Gurlivleen Singh Kainth |           1805511 | 1623170835159 | messAccountant     |        0 |    0 | 2021-06-08 10:17:15 | NULL            |             21 |
| Gurlivleen Singh Kainth |           1805511 | 1623170835159 | programCoordinator |        0 |    0 | 2021-06-08 10:17:15 | NULL            |             21 |
| Gurlivleen Singh Kainth |           1805511 | 1623170835160 | advisor/supervisor |        0 |    0 | 2021-06-08 10:17:15 | NULL            |             21 |
| Gurlivleen Singh Kainth |           1805511 | 1623170835160 | training&Placement |        0 |    0 | 2021-06-08 10:17:15 | NULL            |             21 |
| Gurlivleen Singh Kainth |           1805511 | 1623170835160 | uniLibraryExtension |        0 |    0 | 2021-06-08 10:17:15 | NULL            |             21 |
+-----------------------+-------------------+--------------+--------------------+----------+------+---------------------+-----------------+----------------+
13 rows in set (0.00 sec)
```

Figure 15: Request Table

# 6 Conclusion and Future Scope

### 6.0.1 Conclusion

The college management system was developed by using Angular, git, ldap, MySql, express technologies. where any student who is studying in college can login using college username and password. where the student can fetch the summary of various Dues in college in various departments. student can give request to system for the clearance where request is sent to concerned mentor and department so that whole process of no-dues and clearance can be done online without any problem and wastage of time.

### 6.0.2 Future Scope

Clearance process should be made totally online through same portal. payment methods to be added on portal soo that student can clear payments to college online.

# References

[1] https://git-scm.com/book/en/v2/Getting-Started-About-Version-Control

[2] Angulare Documentation

[3] W3 School Angulae