CSC1808 PROJECT

"University Attendance System"

A Project Report

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In partial fulfillment for the award of the degree

Of

BACHELOR OF ENGINEERING

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COMPUTER SCIENCE AND ENGINEERING

at

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Faculty of Technology & Engineering

The Maharaja Sayajirao University of Baroda

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DECLARATION

I hereby declare that the project entitled "**University Attendance System**" submitted for the B. E. (CSE) degree is my original work and the project has not formed the basis for the award of any other degree, diploma, fellowship or any other similar titles.

Signature of the Student's

Place:

Date:

CERTIFICATE

This is to certify that the project titled "**University Attendance System**" is the genuine and original work carried out by Harsh Kachhadiya, Ivankshu Vaghani and Vishal Pipaliya, student/s of B E (CSE) of faculty of Technology & Engineering, The Maharaja Sayajirao University of Baroda during the academic year 2020-21, in partial fulfillment of the requirements for the award of the degree of Bachelor of Engineering (Computer Science and Engineering).

Signature of the Guide

Signature of the Head of the Department

Place:

Date:

ABSTRACT

University attendance system is important to every educational institution. University will have to keep a track of students to maximize their performance. Managing student attendance during lecture periods has become a difficult challenge. The ability to compute the attendance percentage becomes a major task as manual computation produces errors and wastes a lot of time.

For the stated reason, Web-based application for attendance management system is designed to track student's activity in the class. This application takes attendance electronically and the records of the attendance are storing in a database, Different presentation of information is obtainable from the system. The test case of the system exposed that the system will working enormously and is ready to use to manage all attendance details of students for any department of the University.

ACKNOWLEDGEMENT

We are so glad to present our project report on "**University Attendance System**", which is prepared as a part of our final semester project in BE computer science & engineering. This project work is the outcome of guidance provided by dedicated **FACULTY OF TECHNOLOGY & ENGINEERING, MSU**.

We expressed our cavernous sense of obligation and gratitude to our guide **VISHWAS RAVAL,** department of the computer science and engineering. The genuine guidance and constant encouragement throughout this project work. We are highly obliged as our honorable guide have devoted his valuable time and shared his expertise knowledge.

We wish to extend our thanks to **ANJALI JIVANI** lecturer, department of computer engineering for their keen interest, valuable guidance and support rendered throughout our project.

1) INTRODUCTION

1.1) Problem Definition:

In traditional way, the attendance will be carried out in the hand written registers. It will be a tedious job to maintain the record for the Teacher. The human effort is more in this case. The retrieval of the information is not as easy as the records are maintained in the hand written registers. It increases paperwork, maintaining records and calculating attendance of each Student become tedious. So this attendance system overcome all this problem like paper work, time consuming, human effort, back-up data, etc..

Scope: The system will working enormously and is ready to use to manage all attendance details of students for any department of the University.

1.2) Project Overview/Specification:

There are mainly four modules in this project:

1) Admin (Head of University)
2) Sub-Admin (Head of Department)
3) Teacher
4) Student

Specification of each module briefly :

1) Admin (Head of University):

- Admin can manage data at University level.
- Admin can manage faculty and department details.
  - Add/ Edit/ Delete faculty details.
  - Add/ Edit/ Delete department details.
- Admin can also manage login credential for the all Head of Department and all Teachers of university. System will send that login credential to all Head of Department and all Teachers of university.
- Admin can view/ download attendance report of any Student easily.

2) Sub-Admin(Head of department):

- Sub-Admin can manage data at Department level.
- Sub-Admin can manage course, class and subject details.
    - Add/ Edit/ Delete course details.
    - Add/ Edit/ Delete class details.
    - Add/ Edit/ Delete subject details.
- Sub-Admin can also manage login credential for the all Students of department. System will send that login credential to all Students of department.
- Sub-Admin can assign subject to respective Teachers.
- Sub-Admin can assign elective subject to particular group of Students or a Student.
- Sub-Admin can view/ download attendance report of Student easily.

3) Teacher:

- Teacher can take attendance using OTP, QR code and manually.
- Teacher can edit attendance manually also.
- Teacher can view/ download attendance report of particular class easily.

4) Student:

- Student can mark their attendance by entering OTP or scanning QR code.
- Student can view/ download attendance report easily.

1.3) Hardware Specification:

- **Camera:** Device enable with web-camera

1.4) Software Specification:

- **Browser:** Any browser supports like Google Chrome, Firefox, Micro-soft Edge etc...
- **Office:** Microsoft Office 2010 or above.
- **Front end:** ASP.NET, HTML 5.0, JavaScript, CSS 3, Bootstrap 3.
- **Back End:** C#.
- **Database System:** MSSQL database.
- **Tools:** Visual Studio 2019.

2) LITERATURE SURVEY

2.1) Existing System:

Talking about existing traditional attendance system that we are following since many years and all work is done on paper. Teachers take attendance of students manually in paper sheet, due to which it increases paperwork. The whole session attendance is stored in register and at the end of the session the reports are generated. We are not able to generate report in the middle of the semester or as per the requirement because it takes more time in calculation. As the attendance is maintained in registers it is very cumbersome to manage, track and update the data.

Disadvantages of Existing System :

- **Not User-Friendly:** The Existing system is not user-friendly because the retrieval of data is very slow and data is not maintained efficiently.
- **Difficulty in report generating:** We require more calculations to generate the report so it is generated at the end of the session. And the Student not get a single chance to improve their attendance
- **Manual control**: All calculations to generate report done manually so there is greater chance of errors.
- **Lots of paperwork**: Existing system requires lot of paper work. Loss of even a single register/record led to difficult situation because all the papers are needed to generate the reports.
- **Time consuming**: Every work is done manually so we cannot generate report in the middle of the semester or as per the requirement because it is very time consuming.
- **No backup:** Having backup is also very difficult in this traditional attendance system.

2.2) Proposed System:

The intention of developing Attendance Management System is to computerize the traditional way of taking attendance. Attendance Management System is a platform for daily student attendance in University. We can minimize the amount of time and effort needed to accurately track and manage student attendance while providing convenient access to Teachers and Students as well. It facilitates to access the attendance information of a particular student in a particular class. It also avoids proxy attendance. The proposed system requires no paper work. Moreover work becomes very easy because of all the data is feted into the computer immediately and reports can be generated through System. This system will also help in evaluating attendance eligibility criteria of a student.

Characteristics of Proposed System :

- **User Friendly: -** The proposed system is user friendly because the retrieval and storing of data is fast and data is maintained efficiently. Moreover the graphical user interface is provided in the proposed system, which provides user to deal with the system very easily.
- **Reports are easily generated:** Reports can be easily generated in the proposed system so user can generate the report as per the requirement or in the middle of the session
- **Very less paper work:** The proposed system requires very less paper work. All the data is feted into the computer immediately and reports can be generated through computers. Moreover work becomes very easy because there is no need to keep data on papers.
- **Computer operator control**: Computer operator control will be there so no chance of errors. Moreover storing and retrieving of information is easy. So work can be done speedily and in time.
- **Backup:** Backup is also very easy in this propose attendance system because All the data is feted into the database.

Feature/Purpose of Proposed System:

- ✓ Manage faculty, department, course, class and subject records easily.
- ✓ Manage credential of Department's head, Teachers and Students.
- ✓ Head of department also assign subject to teachers and assign elective subject to group of students easily one by one clicking or using XLXS file.
- ✓ Teacher can take / update attendance and view / download attendance report easily.
- ✓ Student can mark attendance using OTP or QR code and also allow view/ download attendance report easily.
- ✓ System can generate and maintain all the updated data of attendance report.

3) SYSTEM ANALYSIS AND DESIGN

3.1) Requirement Specification:

Functional Requirement:

- Our system has mainly four modules: Admin module, Sub-Admin module, Teacher module, and Student module. Various processes involved in these four modules are:

FR 1) Login : Admin, Sub-Admin, Teacher and Student

- The system should be able to check the user's email and password and give them access to their account while logging in.

FR 2) Manage Faculty/ Department/ Teacher : Admin

- Admin will manage the faculty and department details.

FR 3) Manage Course/ Class/ Subject/ Student: Sub-Admin

- Sub-Admin will manage the course, class, subject and student details.

FR 4) Send Credential : Admin, Sub-Admin

- The system will send login credential of Sub-Admin / Teacher via E-mail when Admin can creates details of Head of Department / Teacher and also send login credential of Student via E-mail when Sub-Admin create details of Student.

FR 5) Assign Subject to Teacher : Sub-Admin

- Sub-Admin will assign the subject to respective Teachers.

FR 6) Assign Subject to students : Sub-Admin

- Sub-Admin will assign the elective subject to particular group of Students or particular Student.

FR 7) Take Attendance : Teacher

- Teacher can take attendance using OTP, QR code and manually.

FR 8) Mark Attendance: Student

- Student can mark attendance by entering OTP or scanning QR code.

FR 9) View attendance report: Admin, Sub-Admin, Teacher and Student

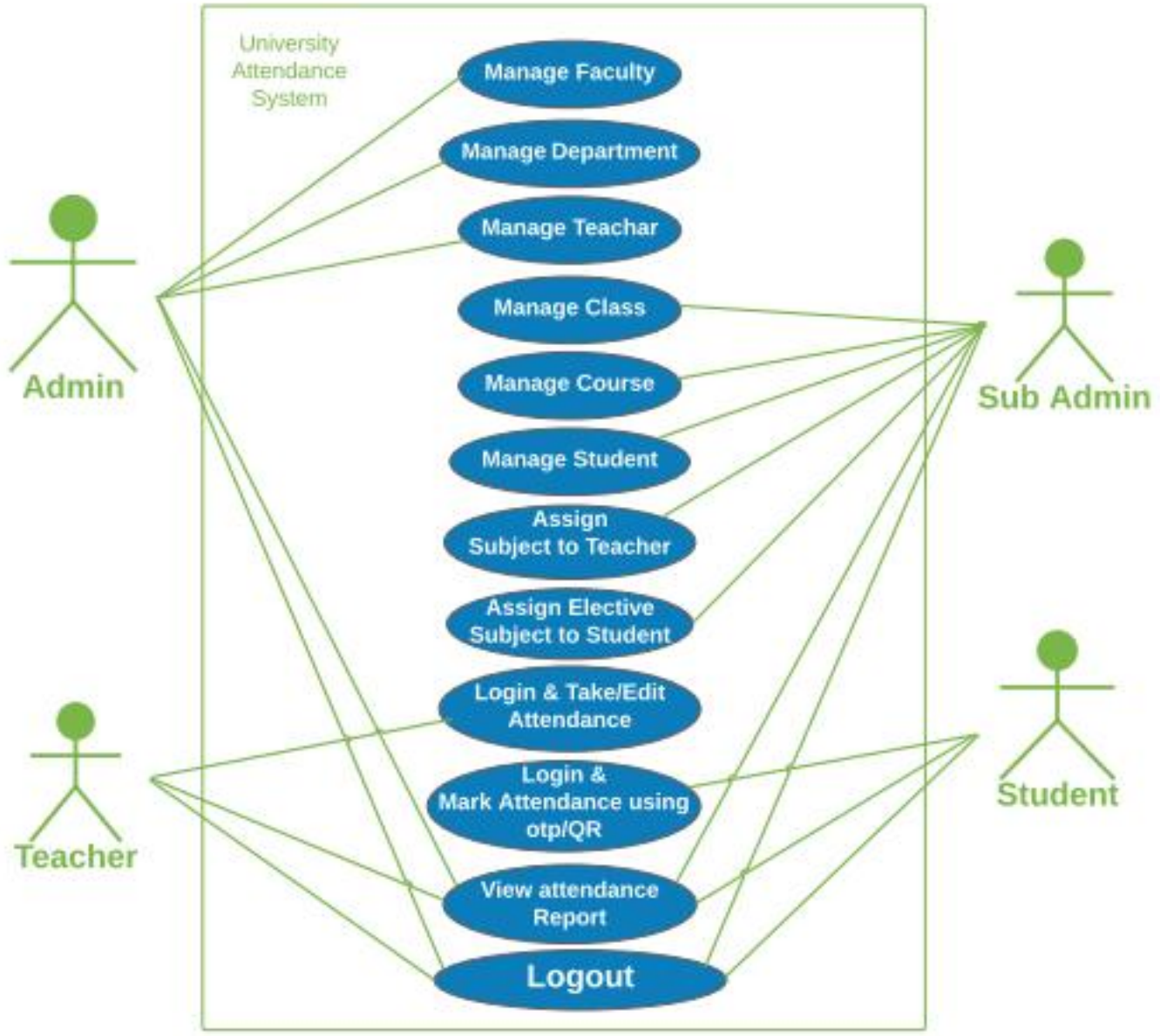
- System will generate updated attendance report and they can easily view or download it.

Non-Functional Requirement:

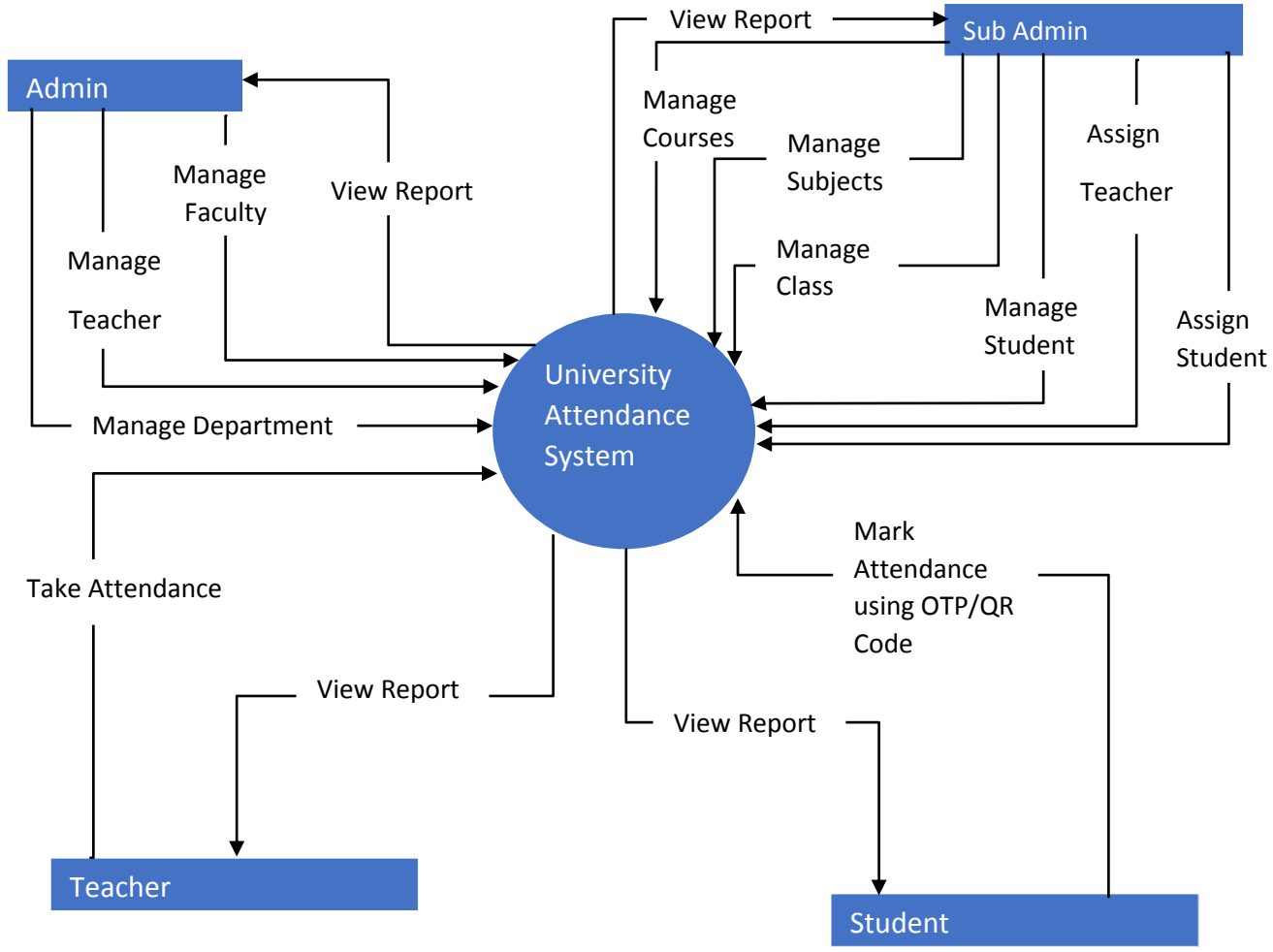
- **Portability**: - This application will work on any browser supported devices like Google Chrome, Firefox, Micro-soft Edge etc...
- **Performance**: - The software shall support use of multiple users at a time.
- **Security Requirement**: - Some of the factors that are identified to protect the software from accidental or malicious access, use, modification, destruction. Utilize certain cryptographic techniques. Keep specific log or history data sets. Assign certain functions to different modules.
- **Maintainability:** - The user will be able to reset all options and all stored user variable to default settings.
- **Reliability**: - All data storage for user variables will be committed to the database at the time of entry.
- **Usability**: - A logical interface is essential to an easy to use system speeding up tasks.
- **Availability**: - All cached data will be rebuilt during every start-up.

3.2) Flow Chart and DFDs/ERs:

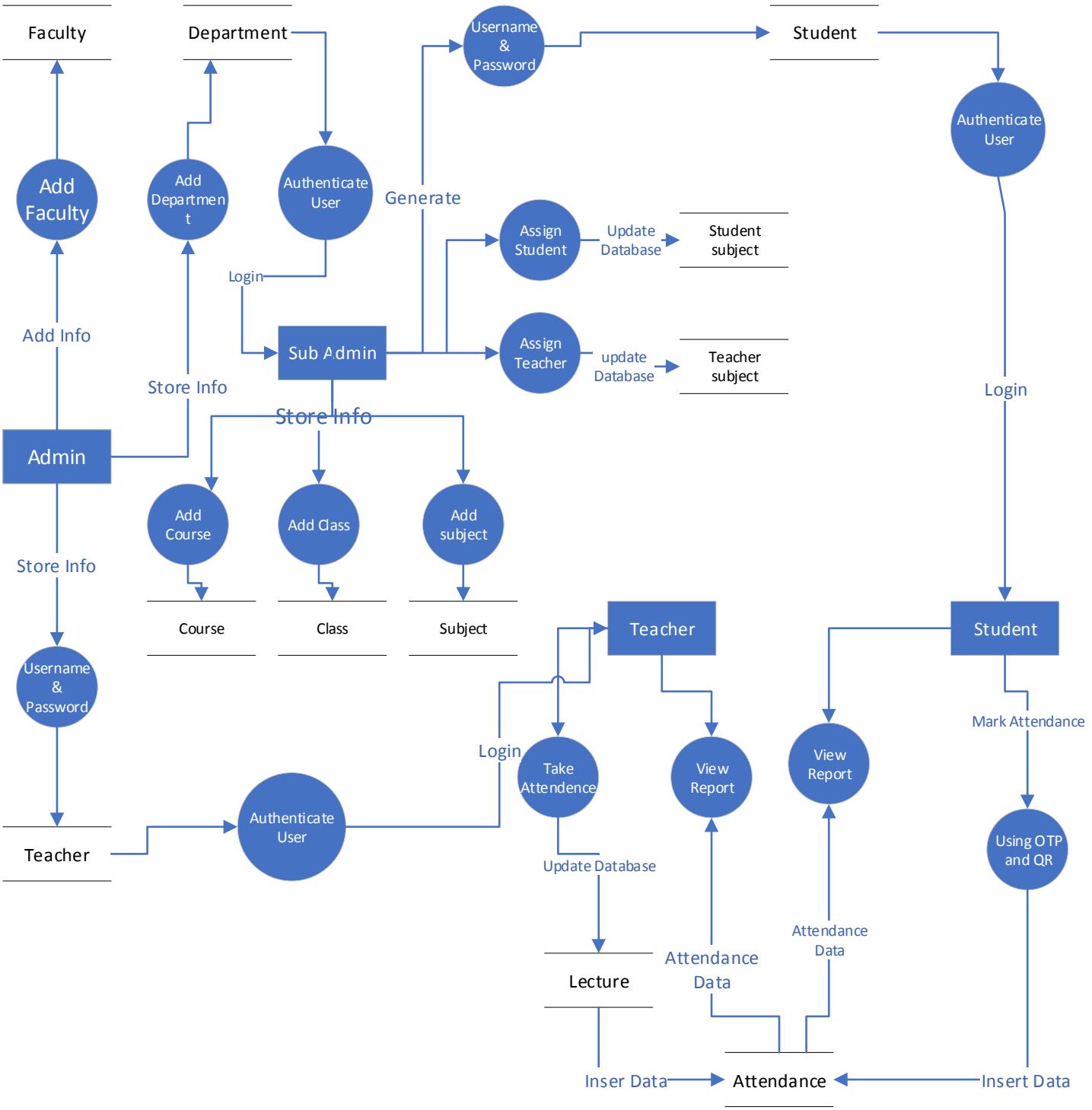
Use Case Diagram:



DFD Level-0 Diagram:

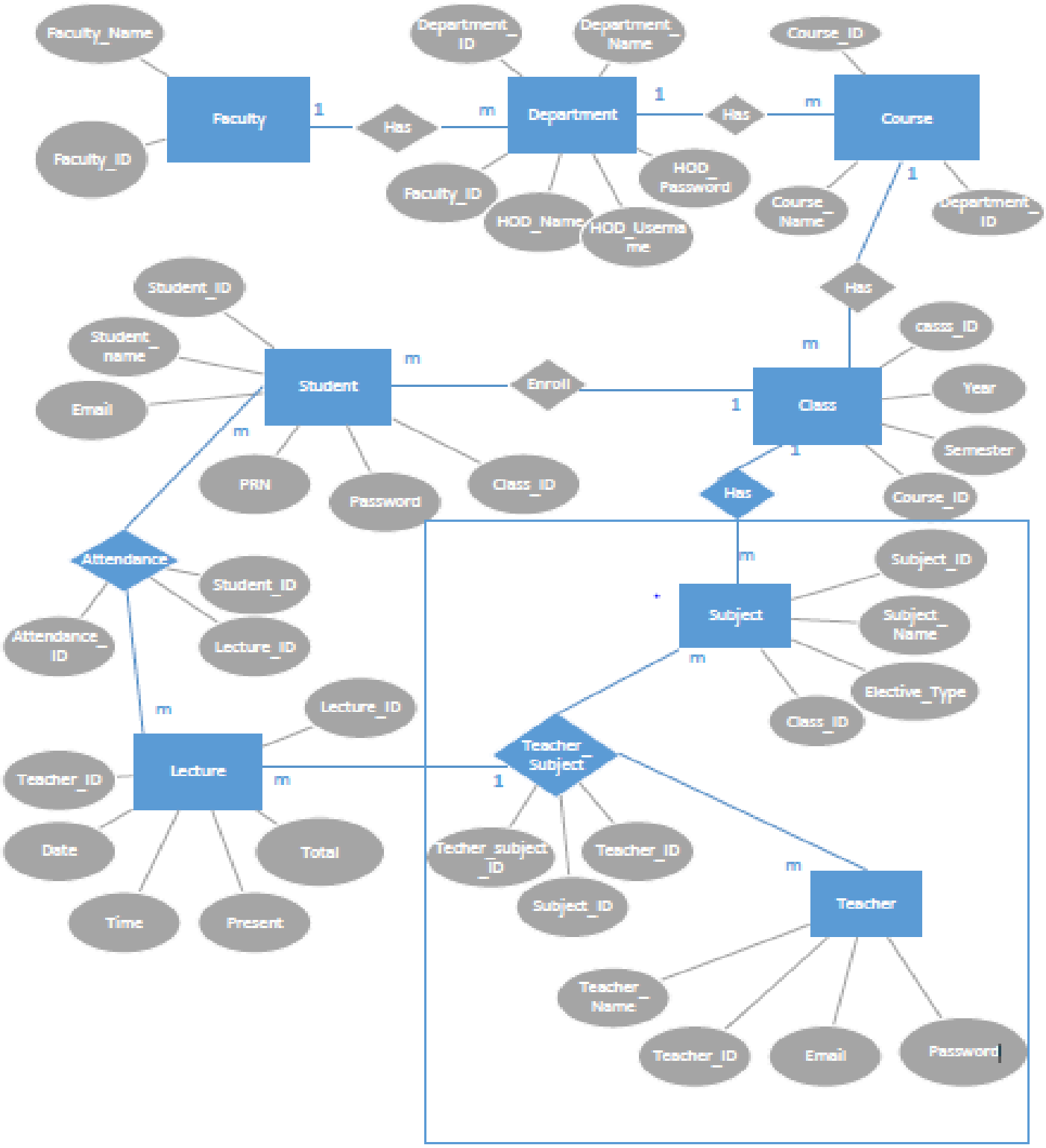


DFD Level-1 Diagram:



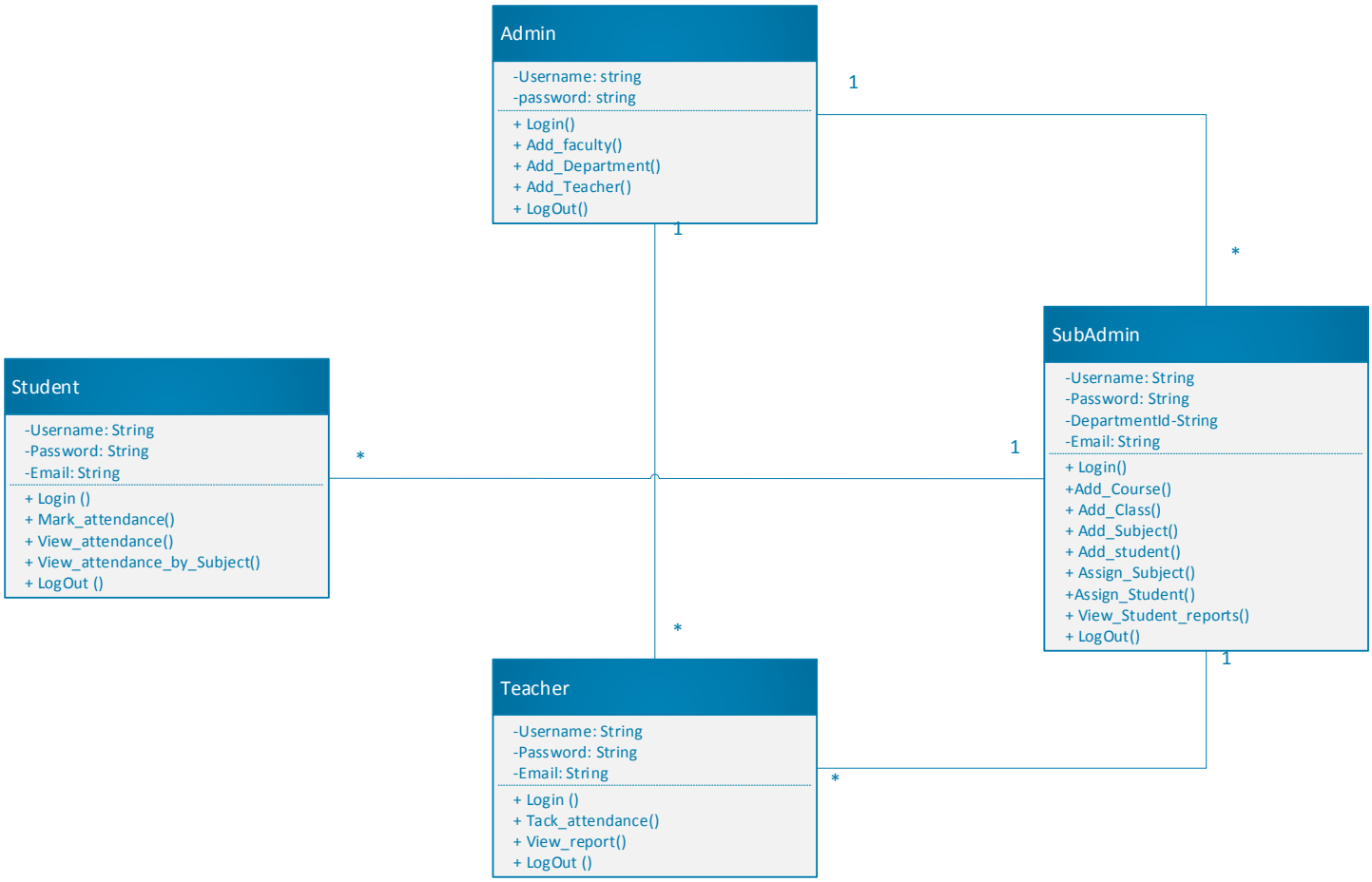
DFD Level-1

ER Diagram:

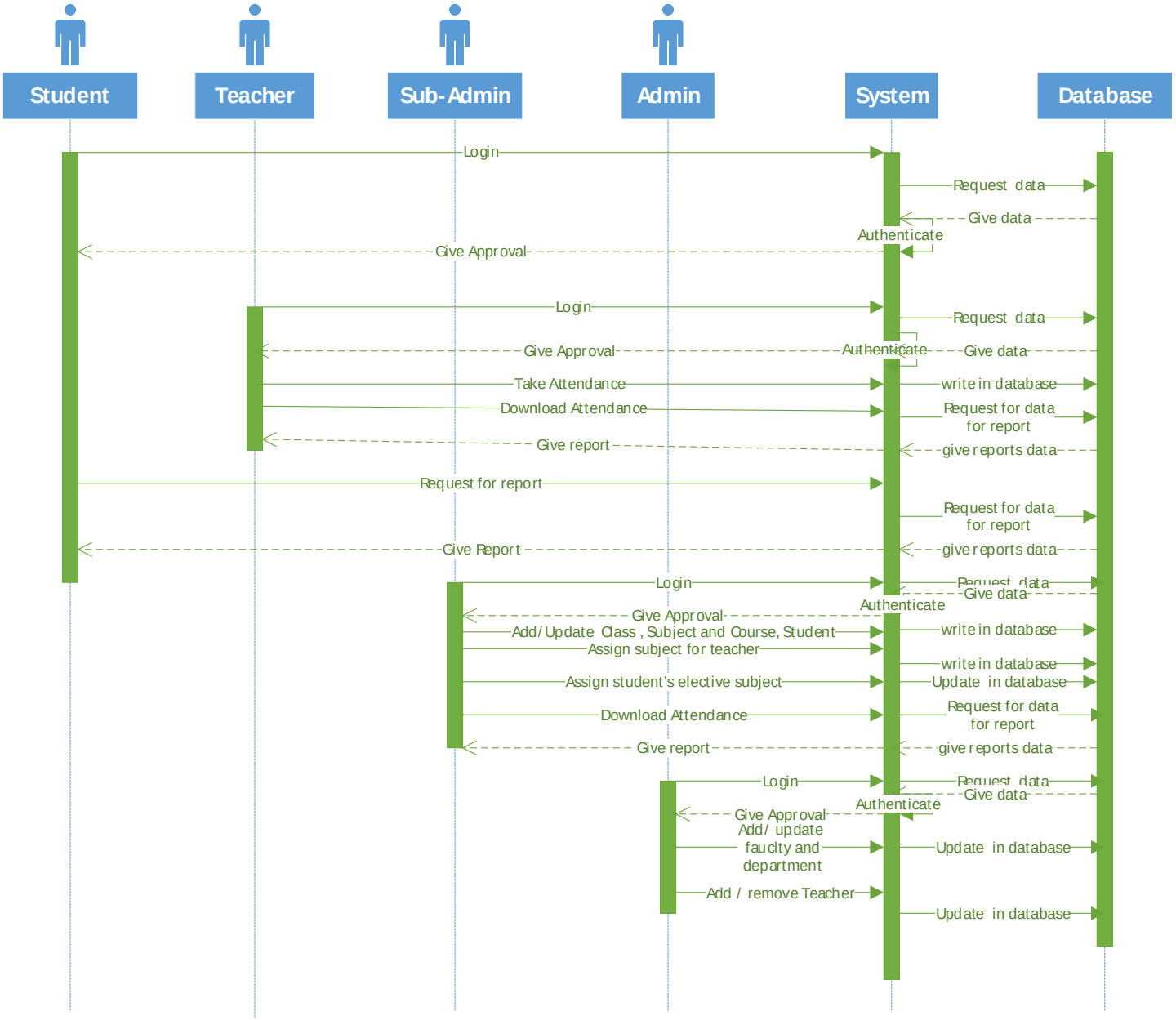

Faculty_Name
Faculty
Faculty_ID
1
Has
m
Department_ID
Department_Name
Department
Faculty_ID
HOD_Name
HOD_Username
HOD_Password
1
Has
m
Course_ID
Course
Course_Name
Department_ID
1
Has
m
Student_ID
Student_name
Email
Student
m
Enroll
1
Class
casss_ID
Year
Semester
Course_ID
1
Has
m
PRN
Password
Class_ID
Attendance
Student_ID
Attendance_ID
Lecture_ID
m
Lecture_ID
Lecture
Teacher_ID
Date
Time
Present
Total
m
1
Teacher_Subject
Techer_subject_ID
Teacher_ID
Subject_ID
m
Subject
Subject_ID
Subject_Name
Elective_Type
Class_ID
m
Teacher
Teacher_Name
Teacher_ID
Email
Password

University Attendance System

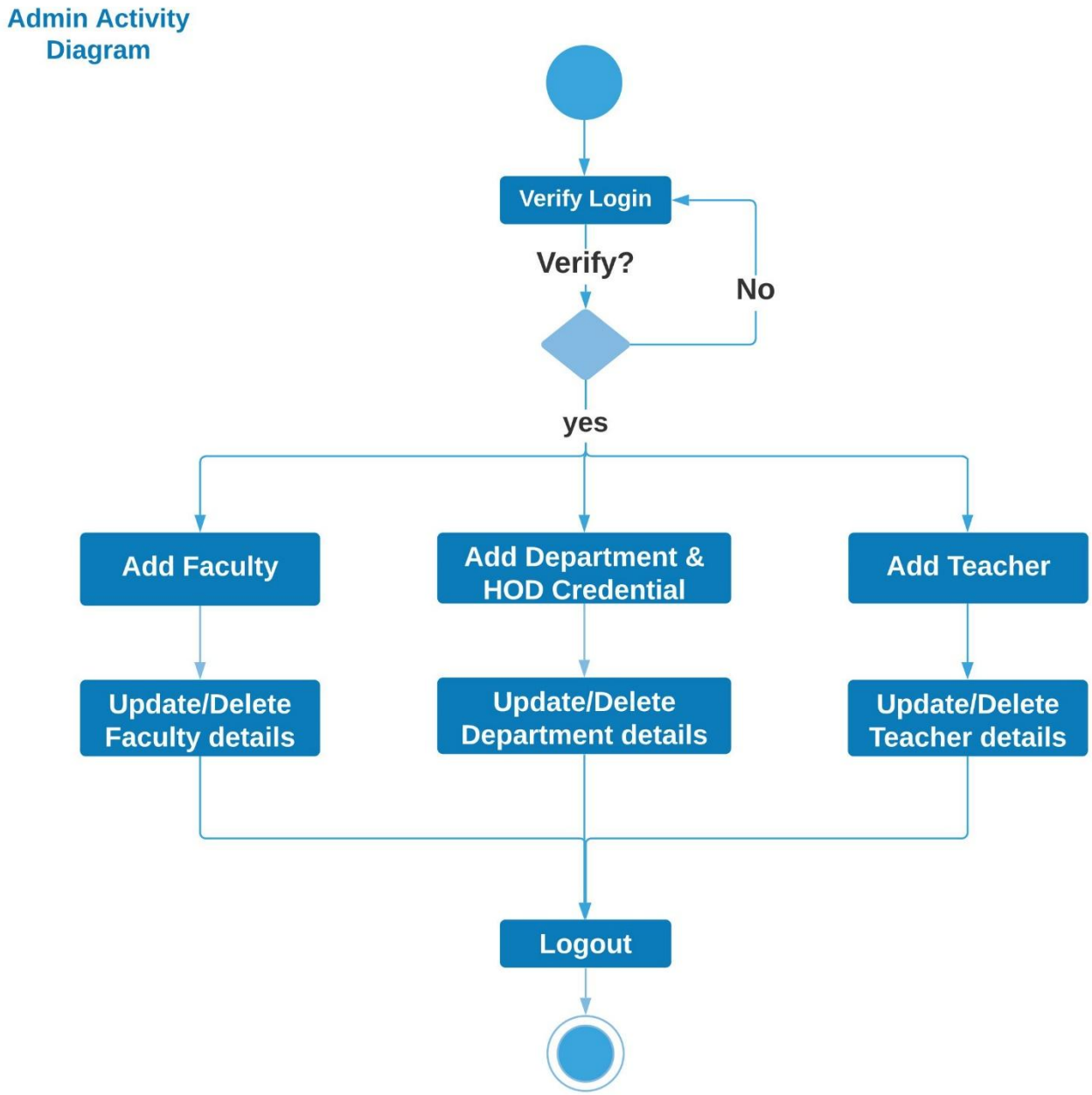
Class Diagram:



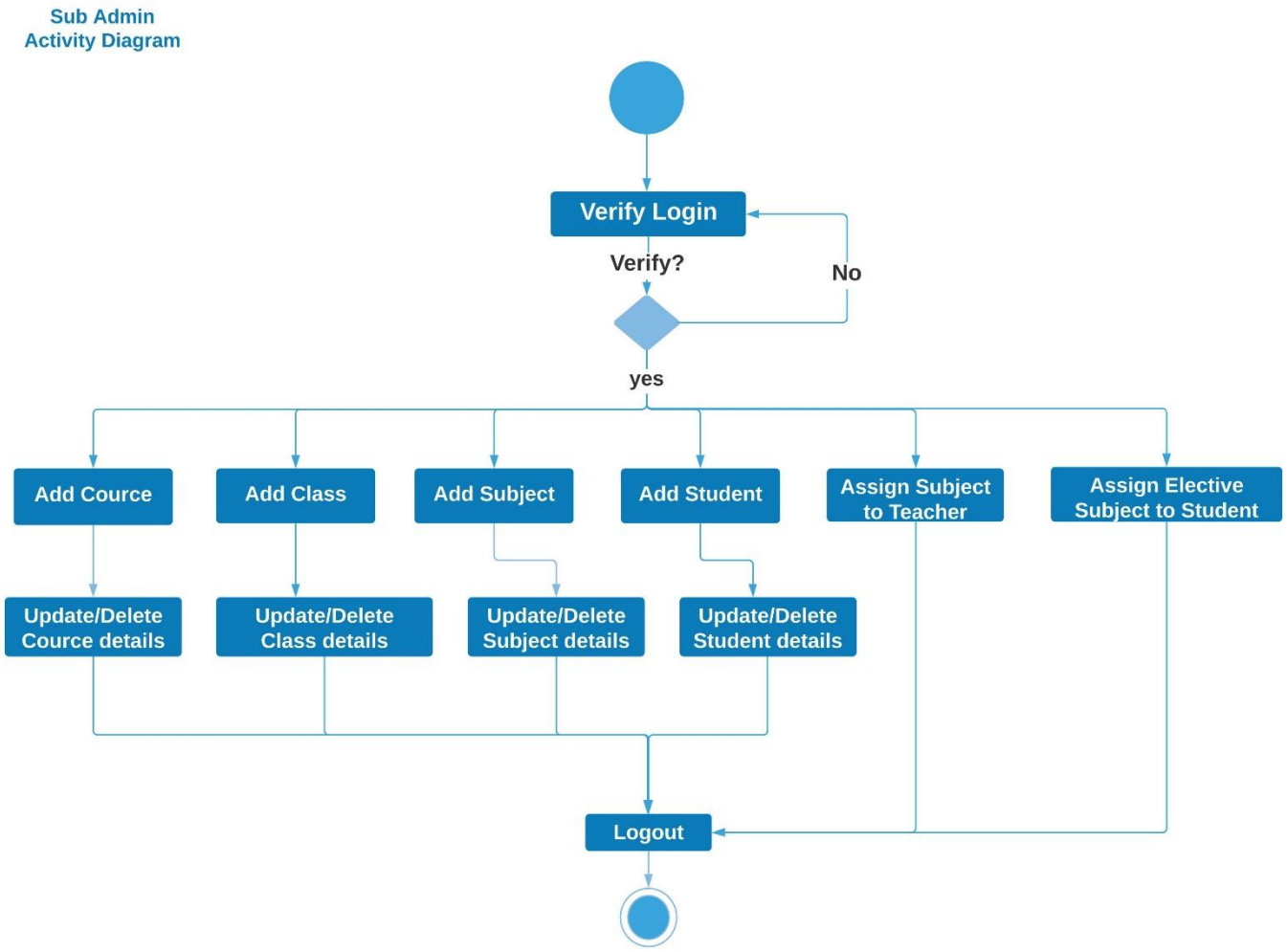
Sequence Diagram:



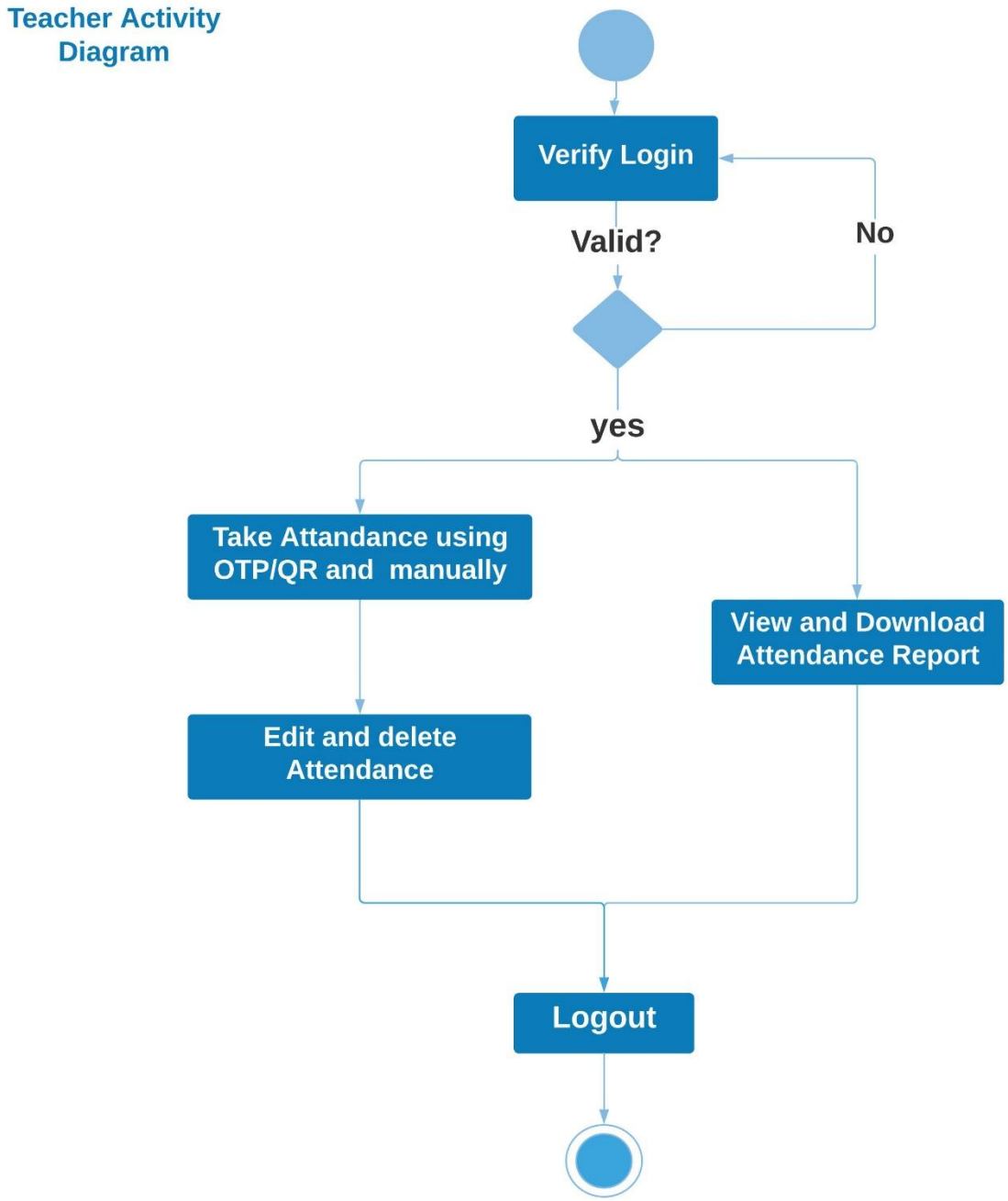
Admin Activity Diagram:



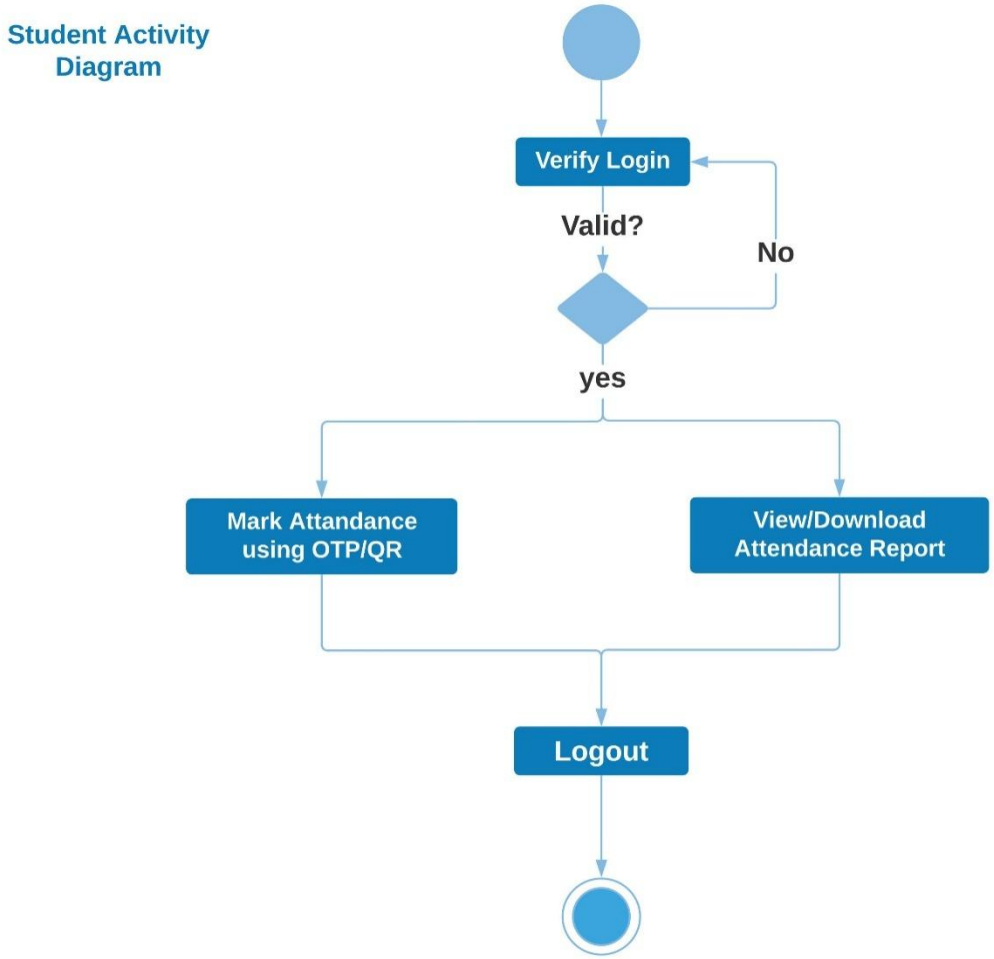
Sub-Admin Activity Diagram:



Teacher Activity Diagram:



Student Activity Diagram:



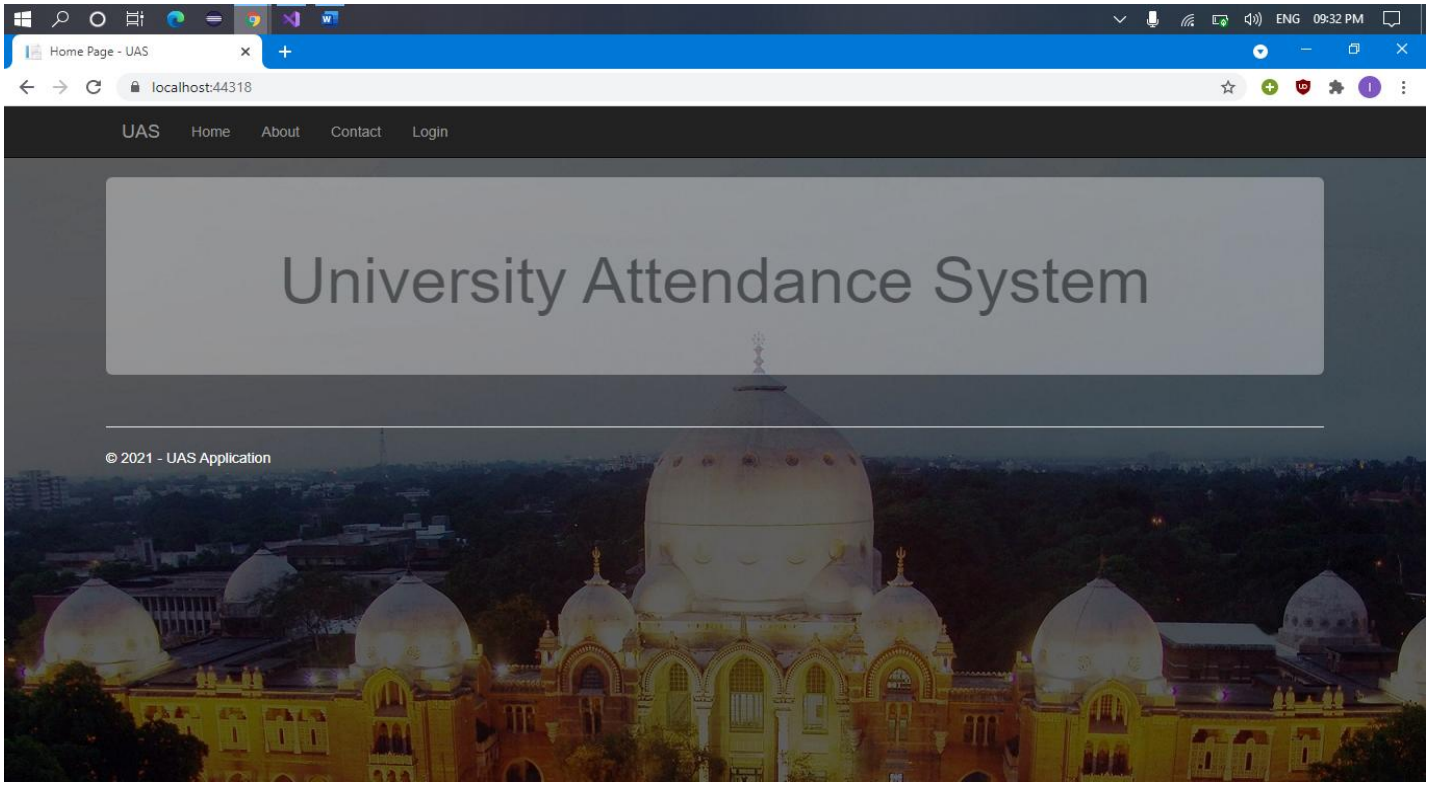
3.3) Testing Process:

INPUT	OUTPUT	RESULT
Login: User enters Username and Password.	→If Username and Password correct then redirect to their respective dashboard. →Otherwise displays alert message that “Wrong username and password”.	SUCCESS
Enter received OTP for verification in Forgot Password	→If OTP is correct then User goes in further process. → Otherwise displays alert message that “Invalid OTP Message”.	SUCCESS
Enter details of Faculty, Department, Course, Class, Subject	→ If data in not present in respective database then add that details into database. → If data match with existing data then displays alert message that “Data already with us”.	SUCCESS
Enter Email id of Sub-Admin , Teacher, Student	→ If Email id not registered in previously then simply go in flow. → Otherwise displays alert message that “This Email id already registered”.	SUCCESS

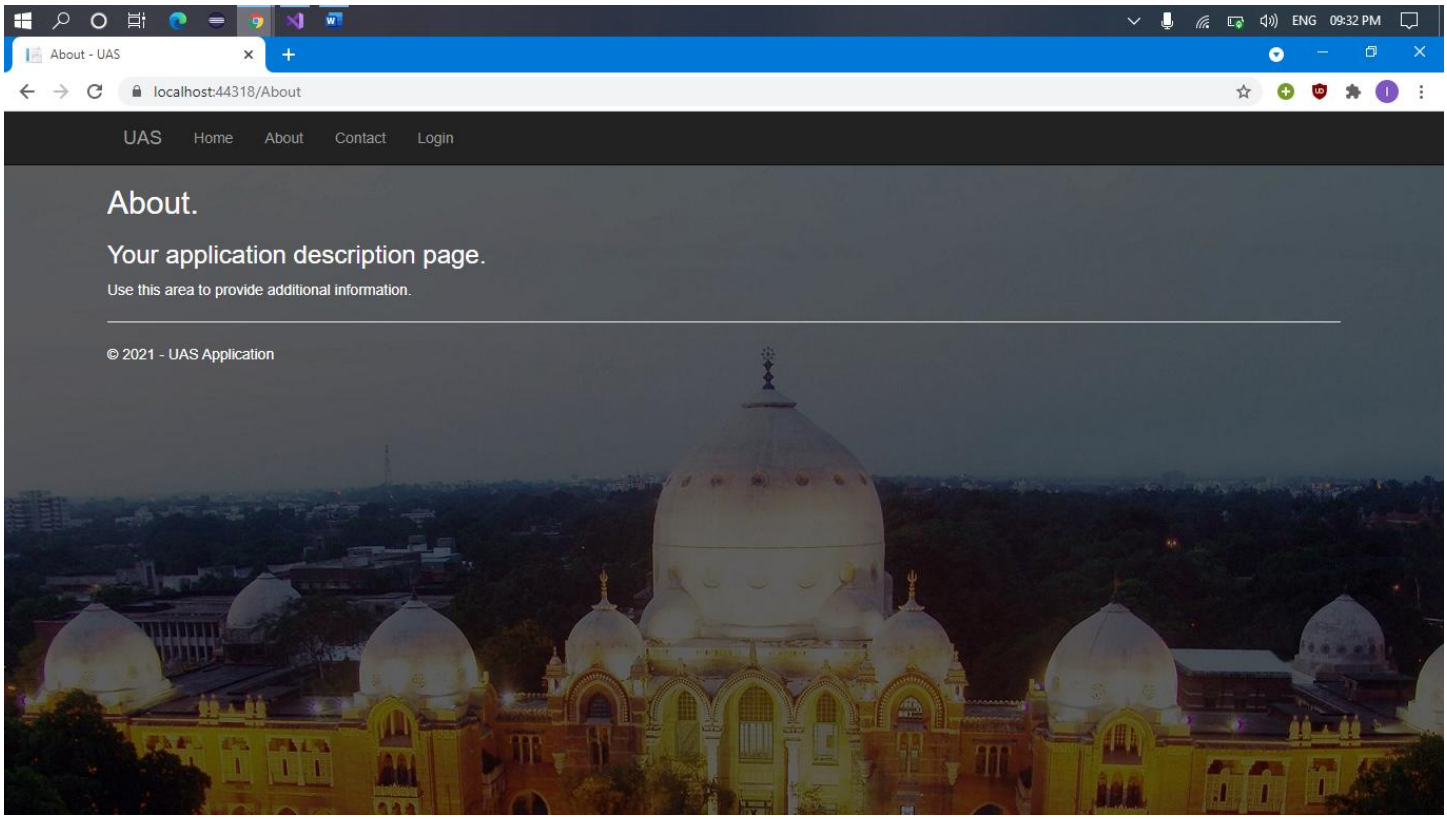
Upload Data File	→ If all Column name in file are matches then data file will uploaded. → Otherwise displays alert message and try with correct formatted file.	SUCCESS
Student try to mark their attendance using OTP	→Student marks their attendance by entering correct OTP in right time for first time then correctly mark their attendance → If Student try to mark their attendance by entering invalid OTP or after OTP expired then displays alert message that "OTP access time may has expired or OTP invalided". → If Student try to mark their attendance again then displays alert message that "Attendance already marked".	SUCCESS

4) RESULTS/ OUTPUTS/ SCREENSHOTS

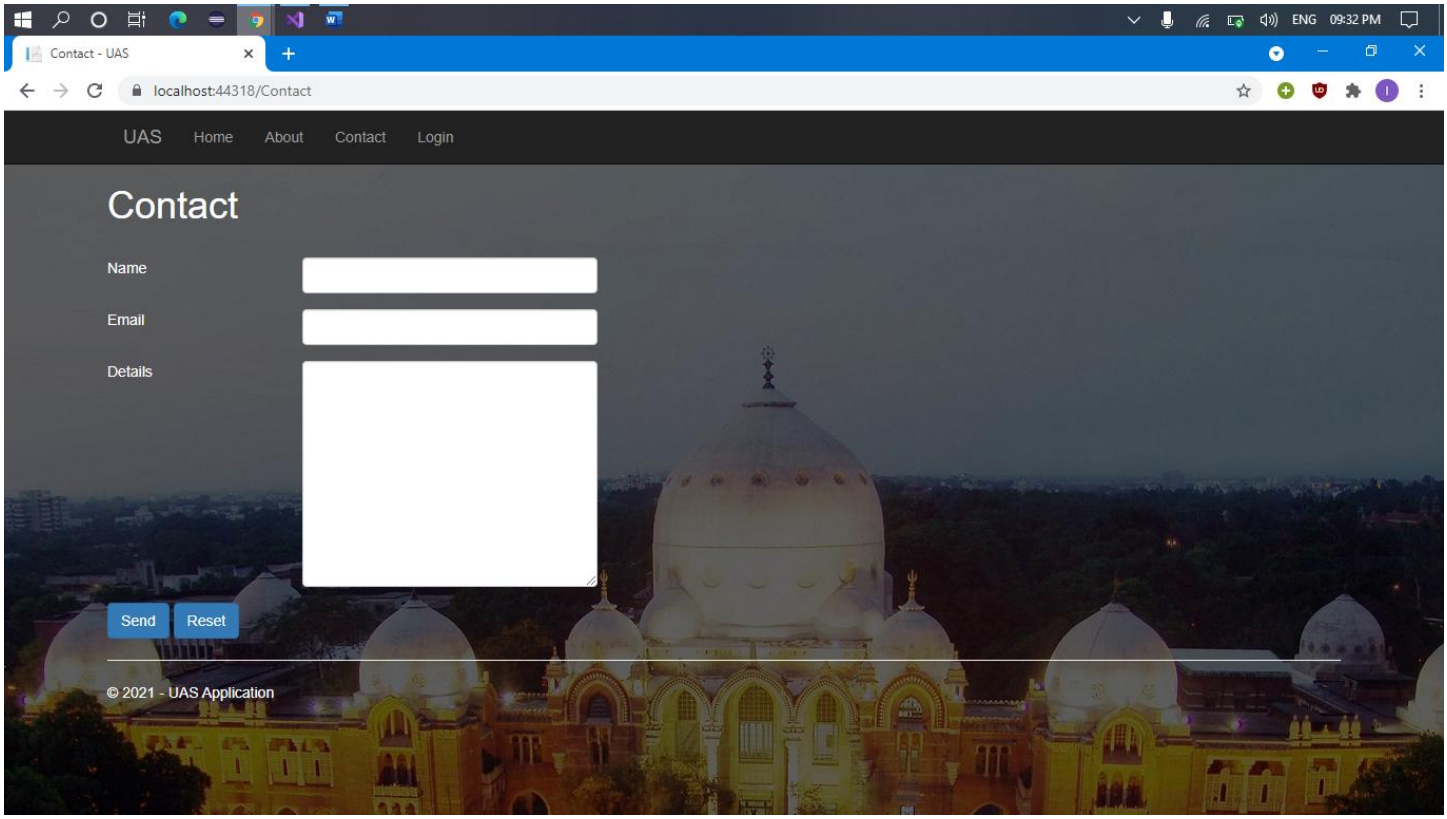
→Home :



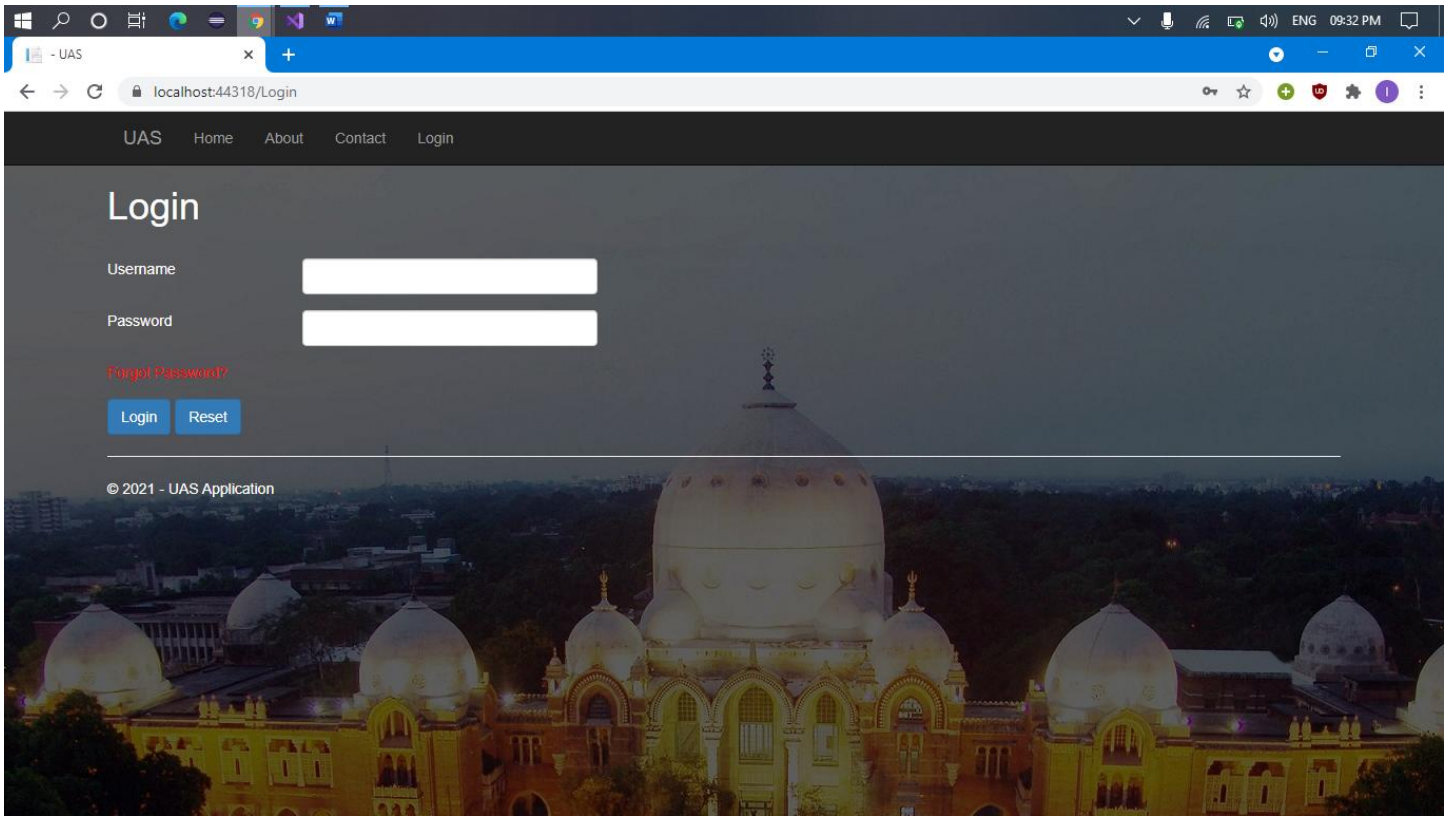
→About :



→ Contact Us :

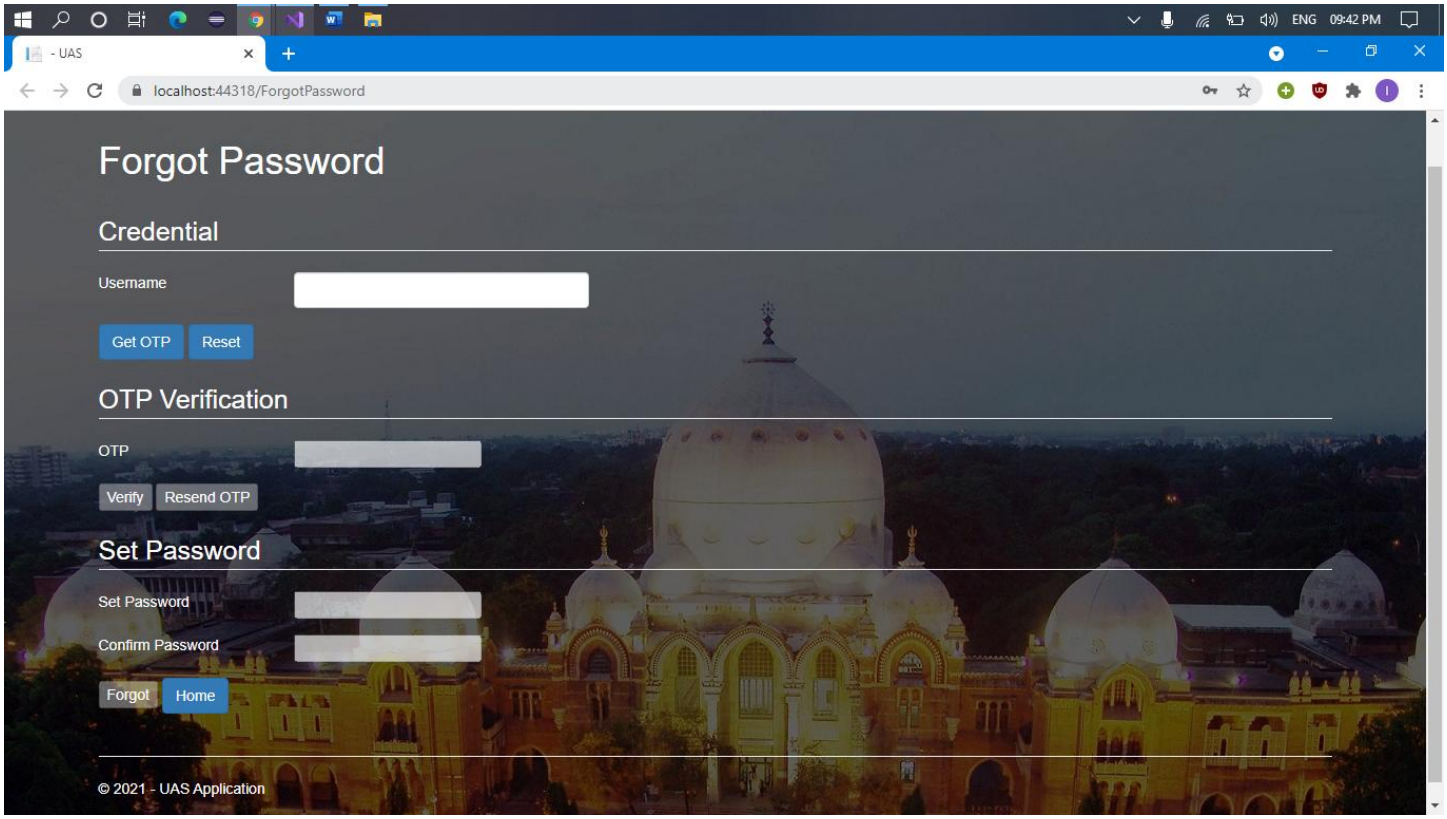


→Login :



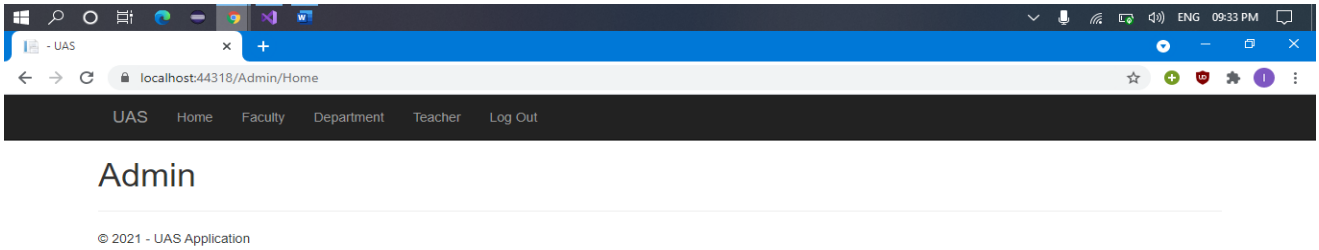
University Attendance System

→ Forgot password :



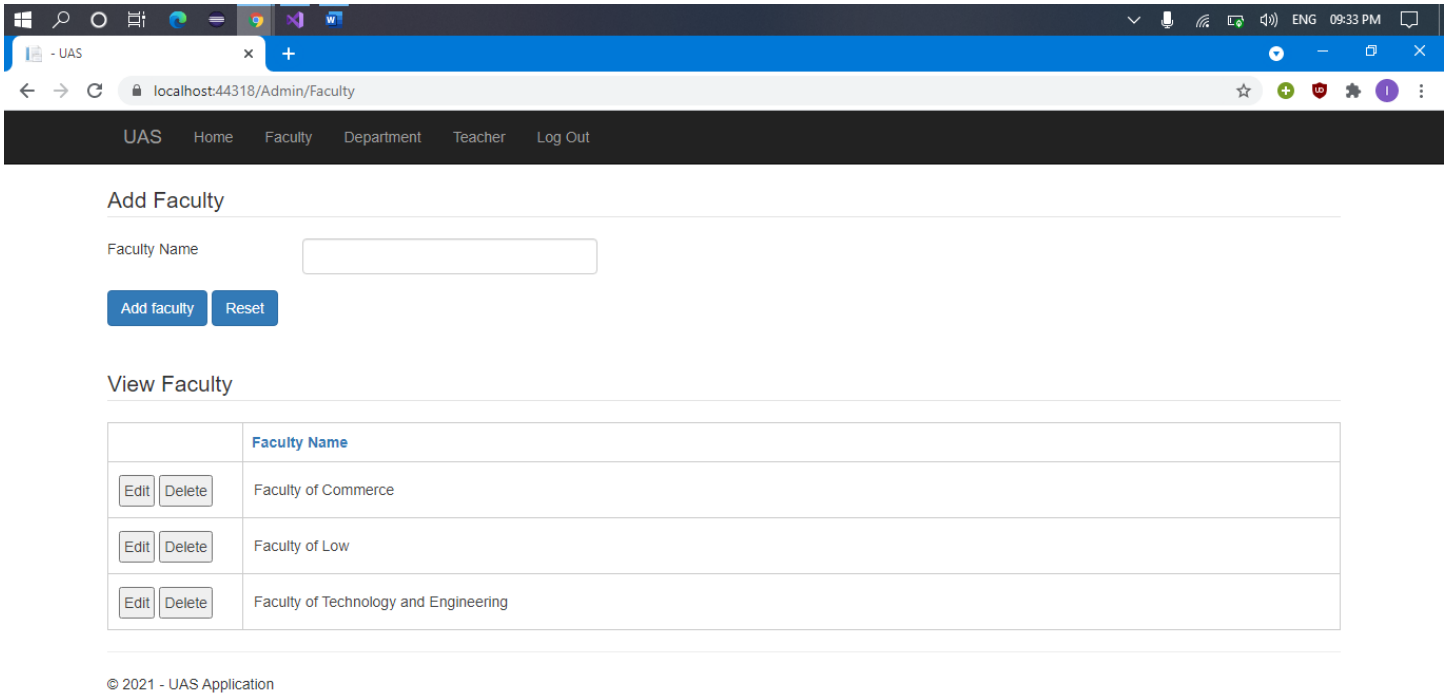
Admin :-

→ Admin home dashboard :

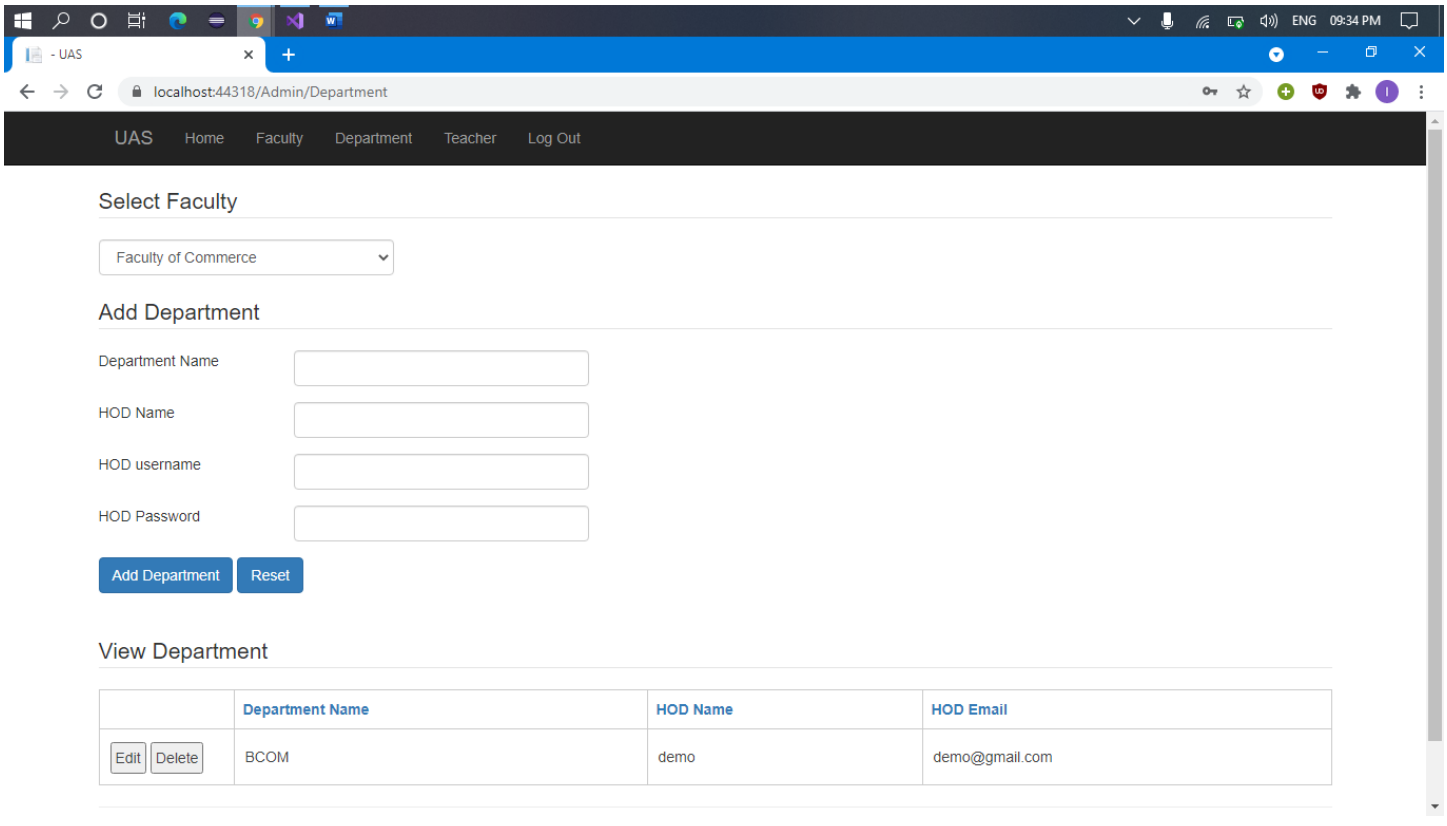


University Attendance System

→ Add/ Update/ Delete Faculty :

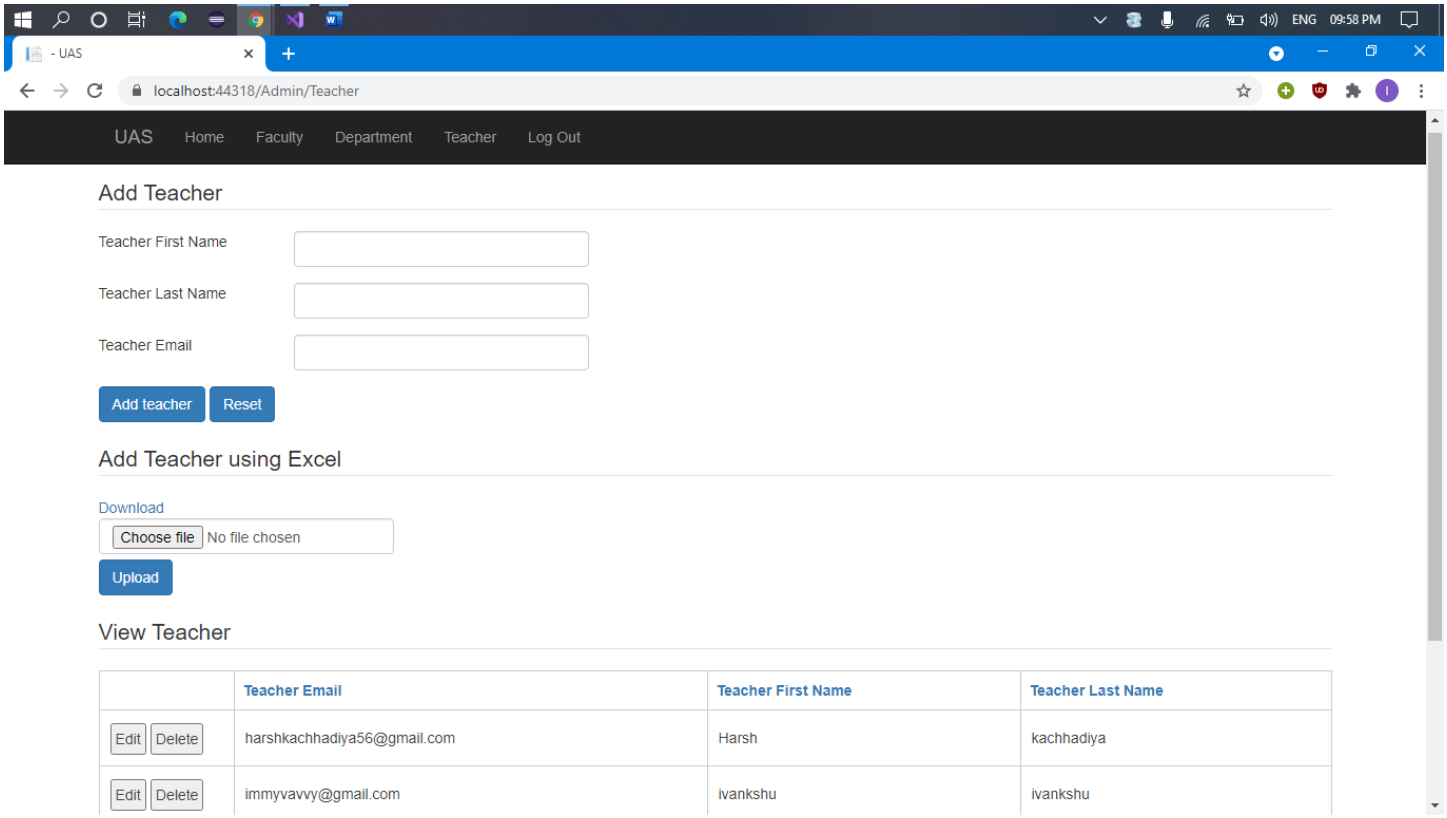


→ Add/ Update/ Delete Department :



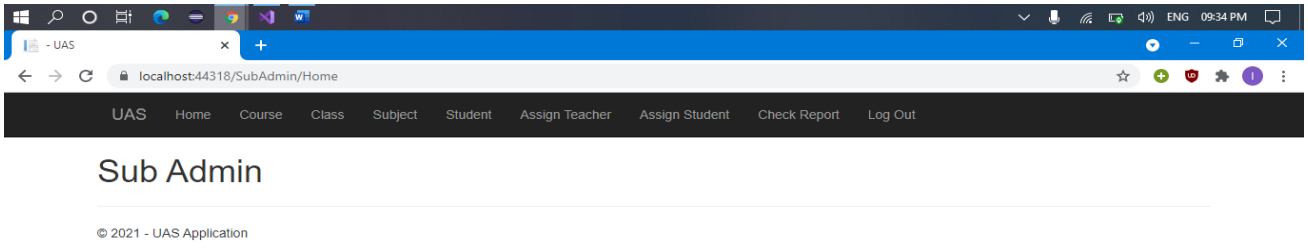
University Attendance System

→ Add/ Update/ Delete Teacher credential :



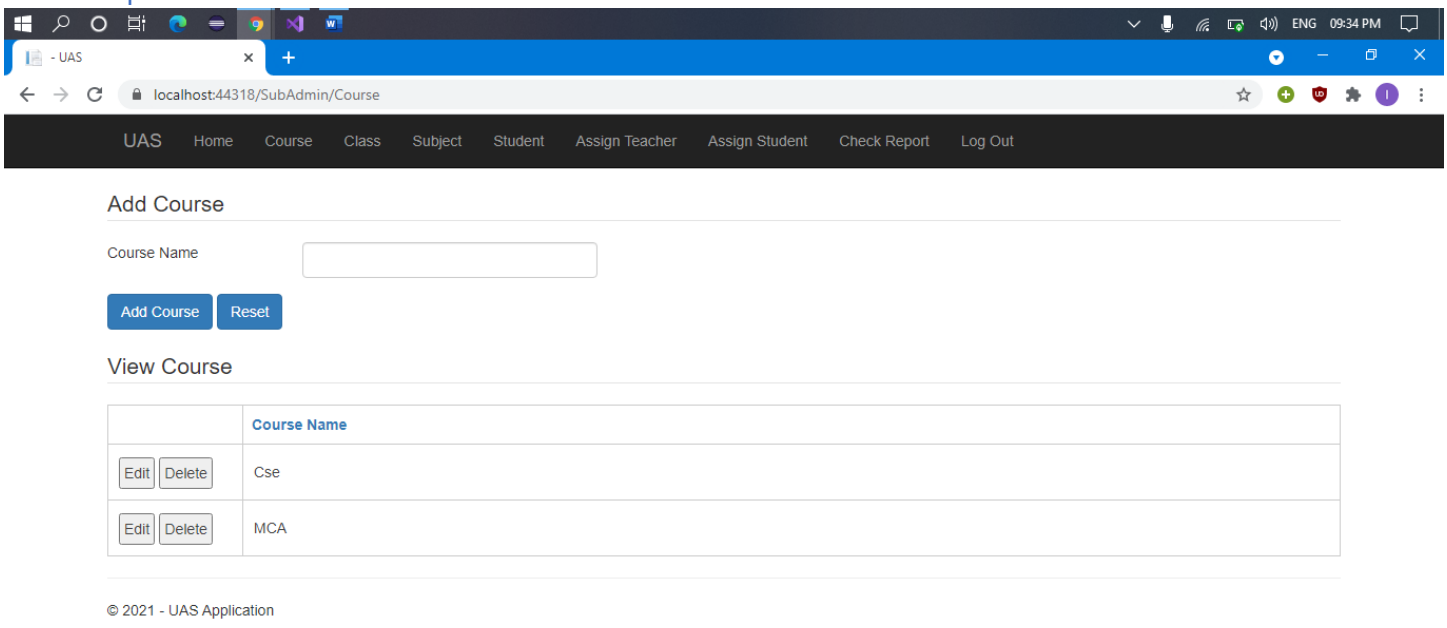
Sub-Admin :-

→ Sub-Admin home dashboard :

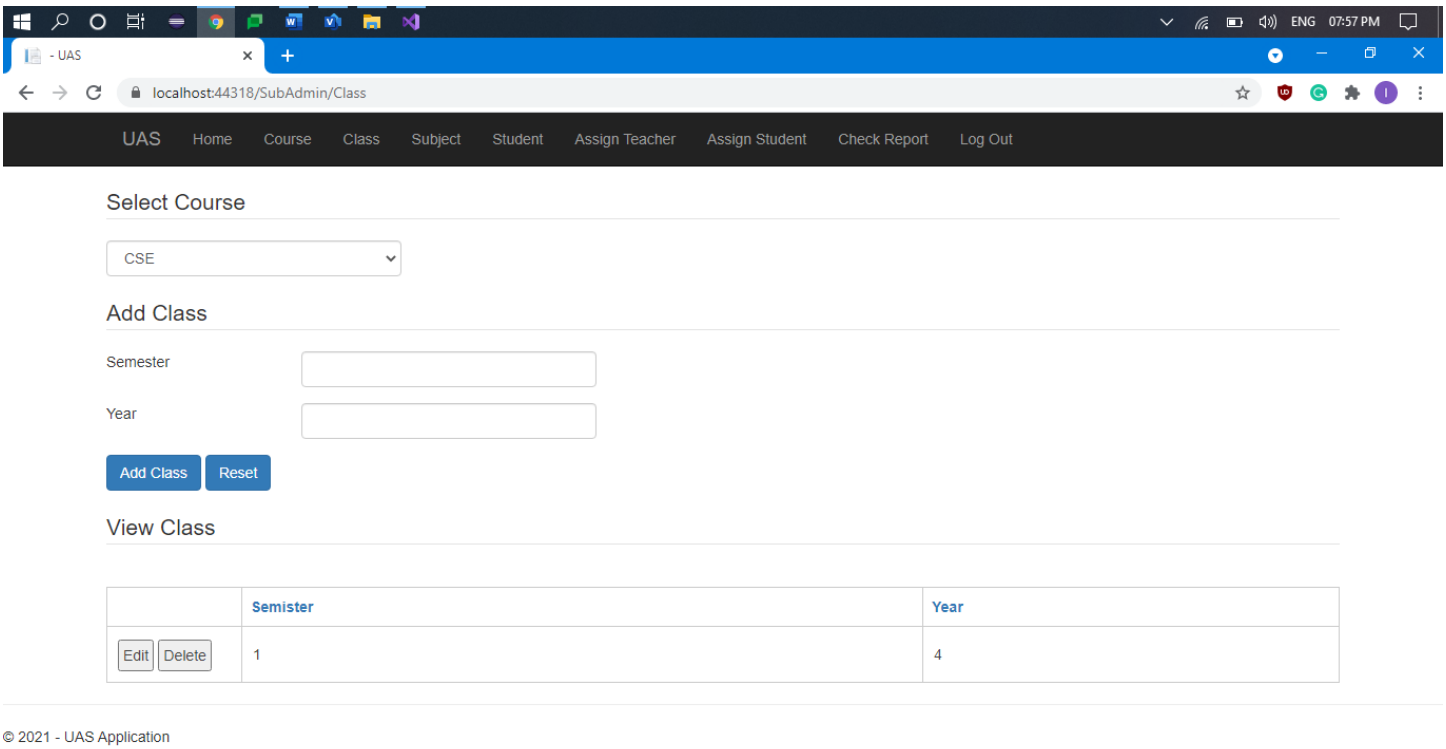


University Attendance System

→ Add/ Update/ Delete Course :

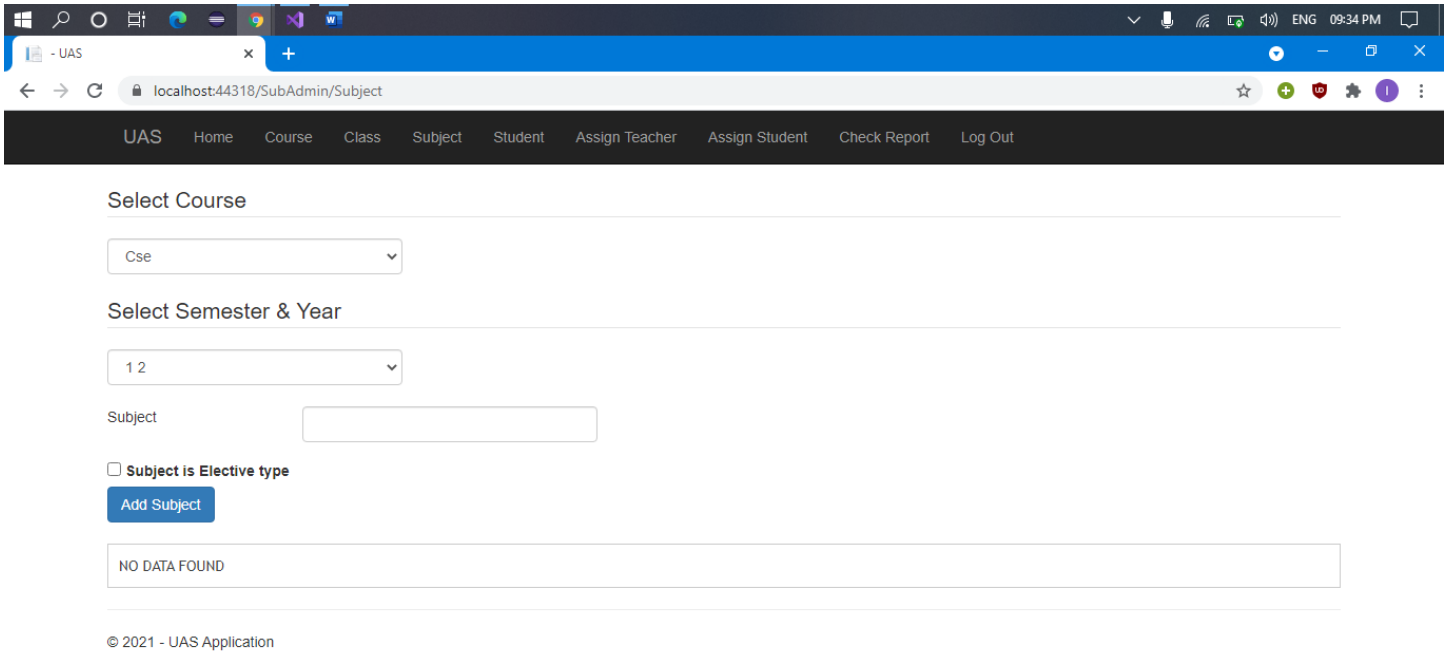


→ Add/ Update/ Delete Class :

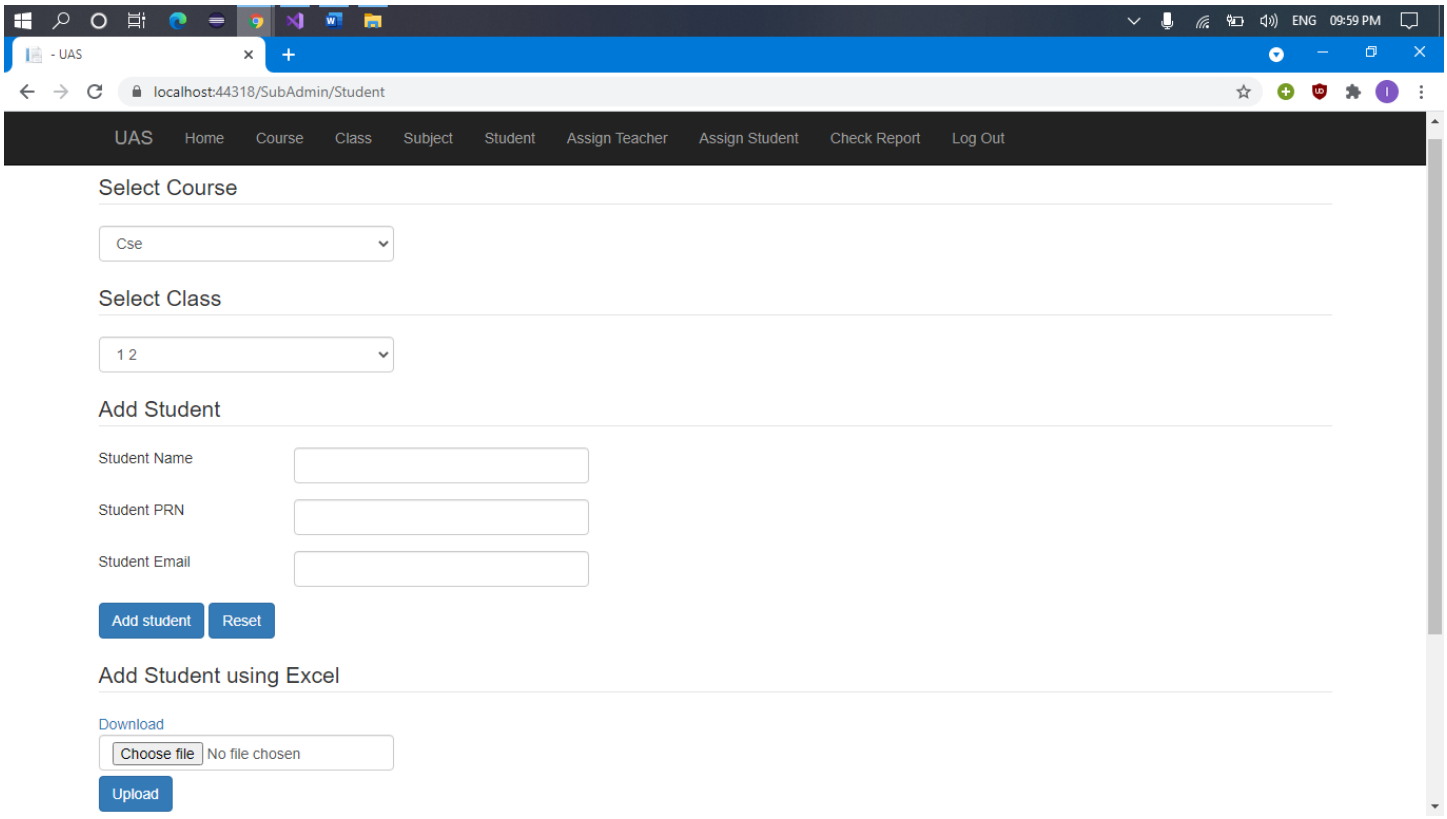


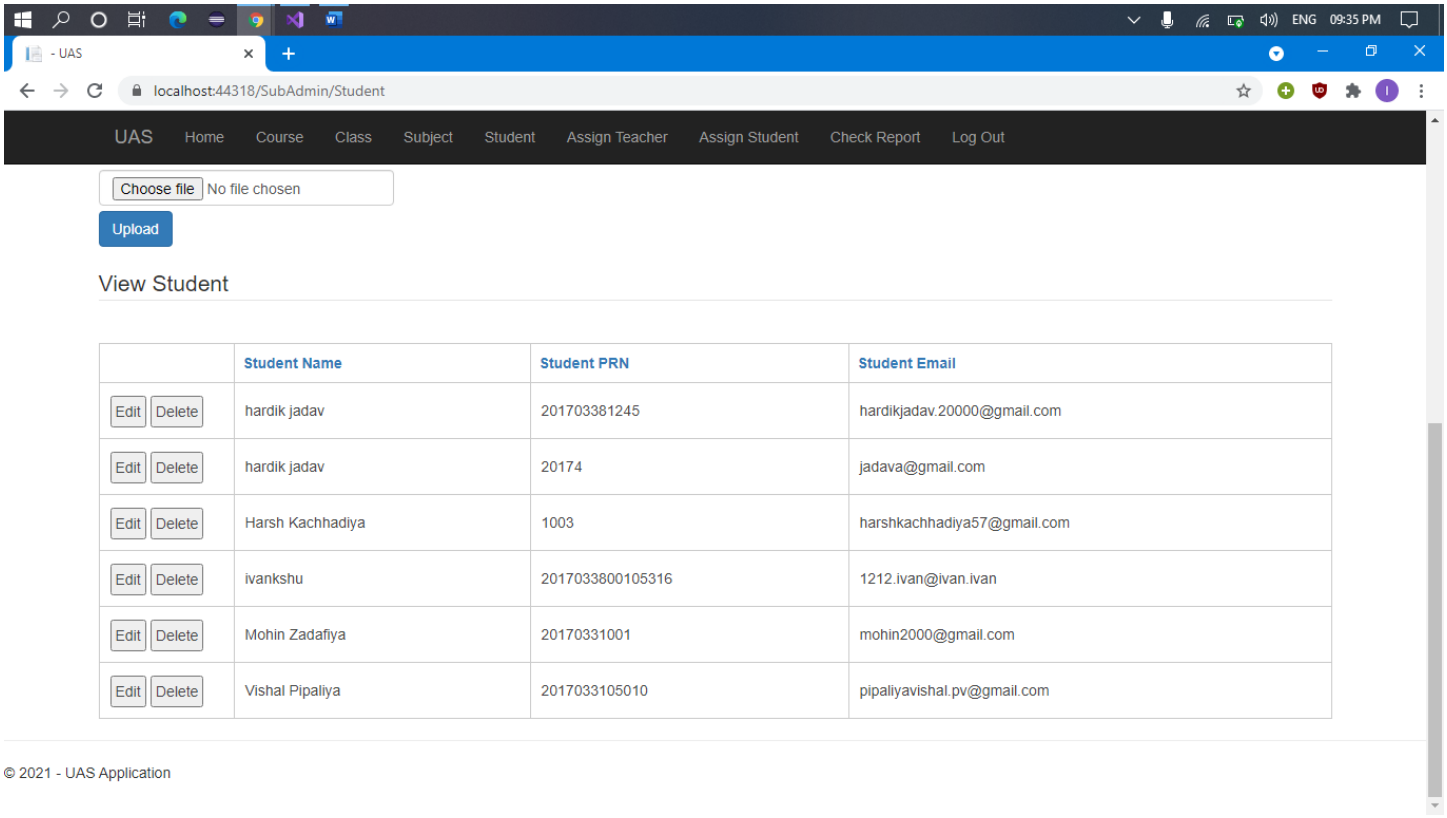
University Attendance System

→ Add/ Update/ Delete Subject :

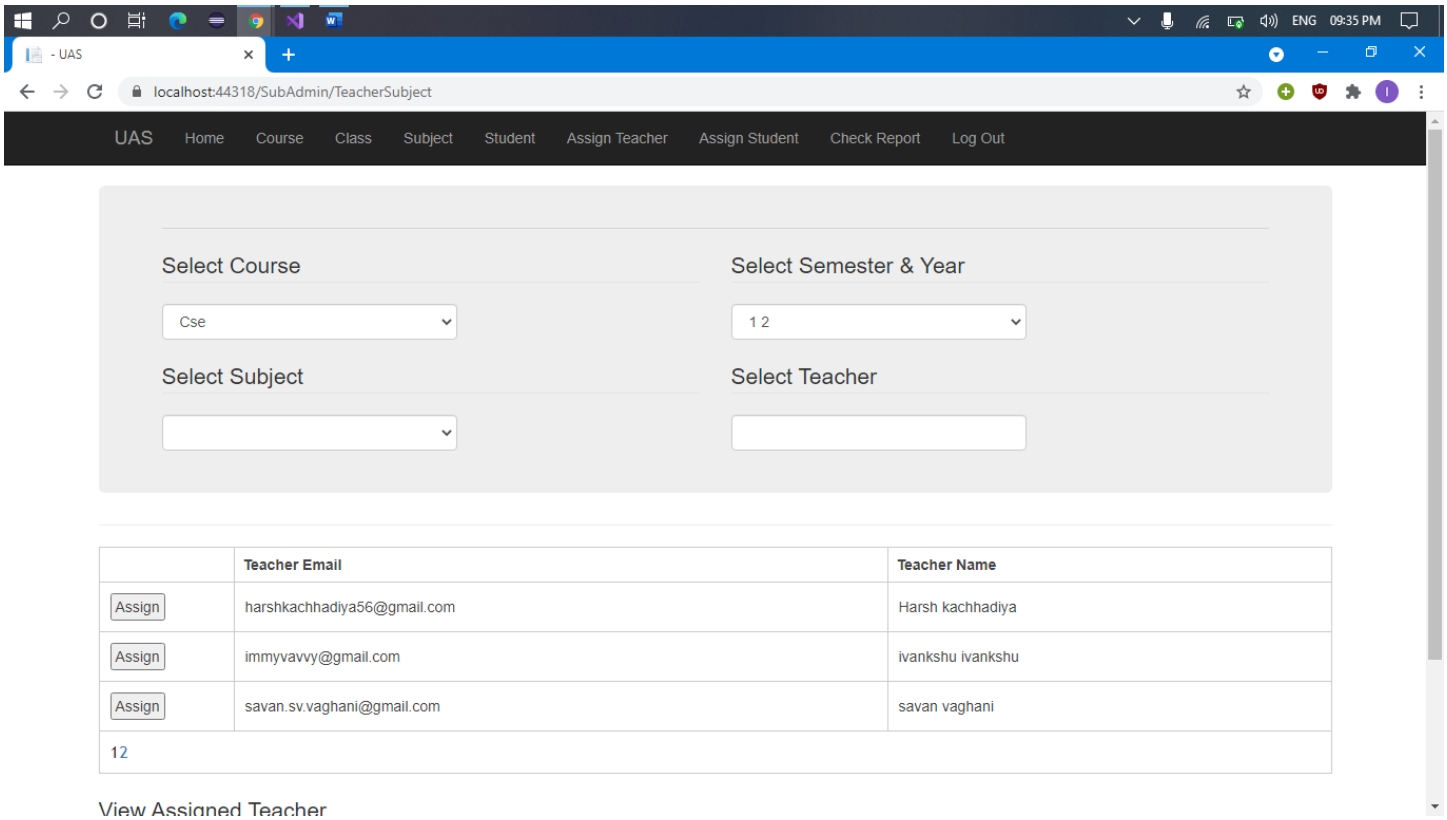


→ Add/ Update/ Delete Student credential :



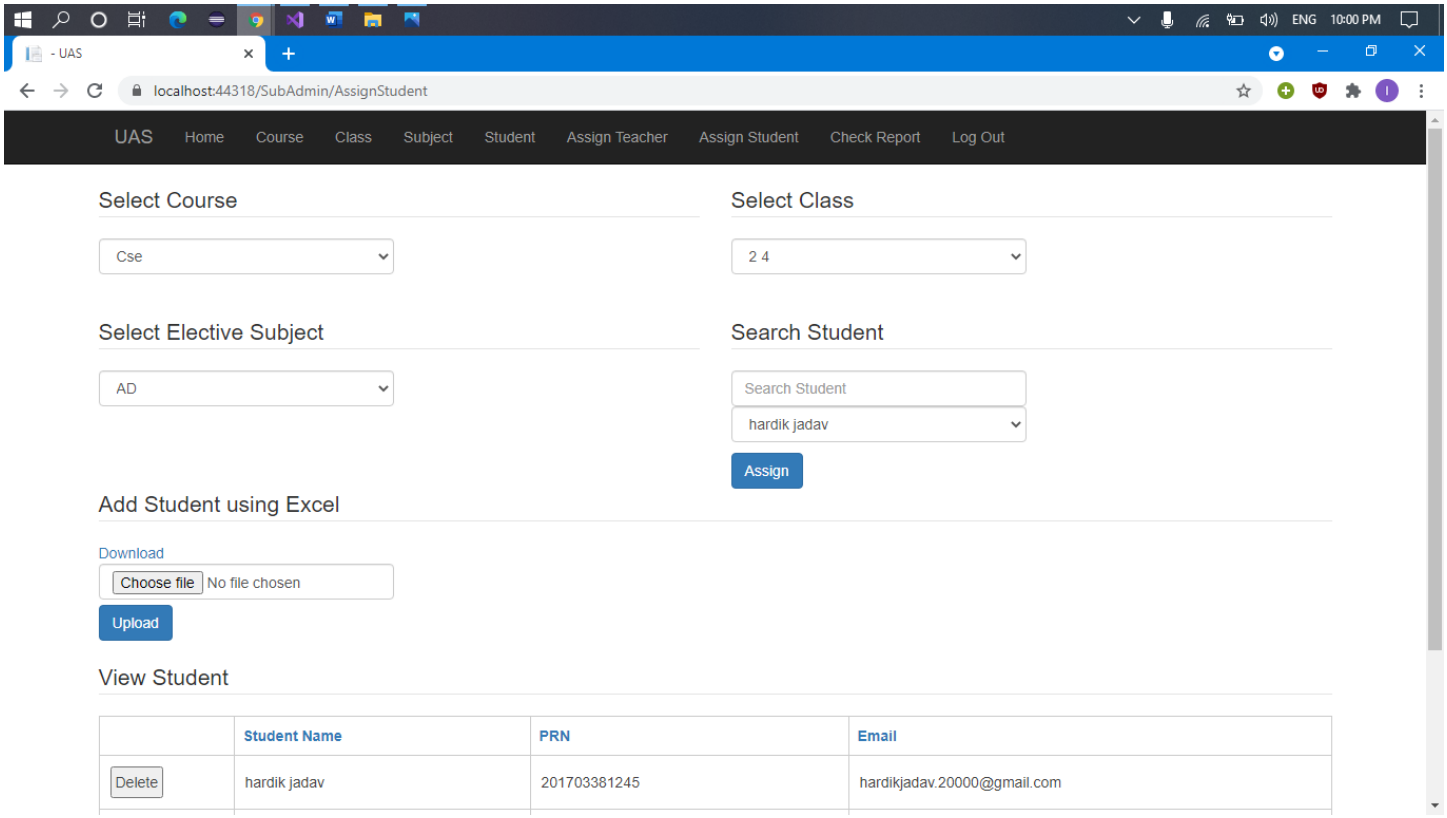


→ Assign Subject to Teacher :

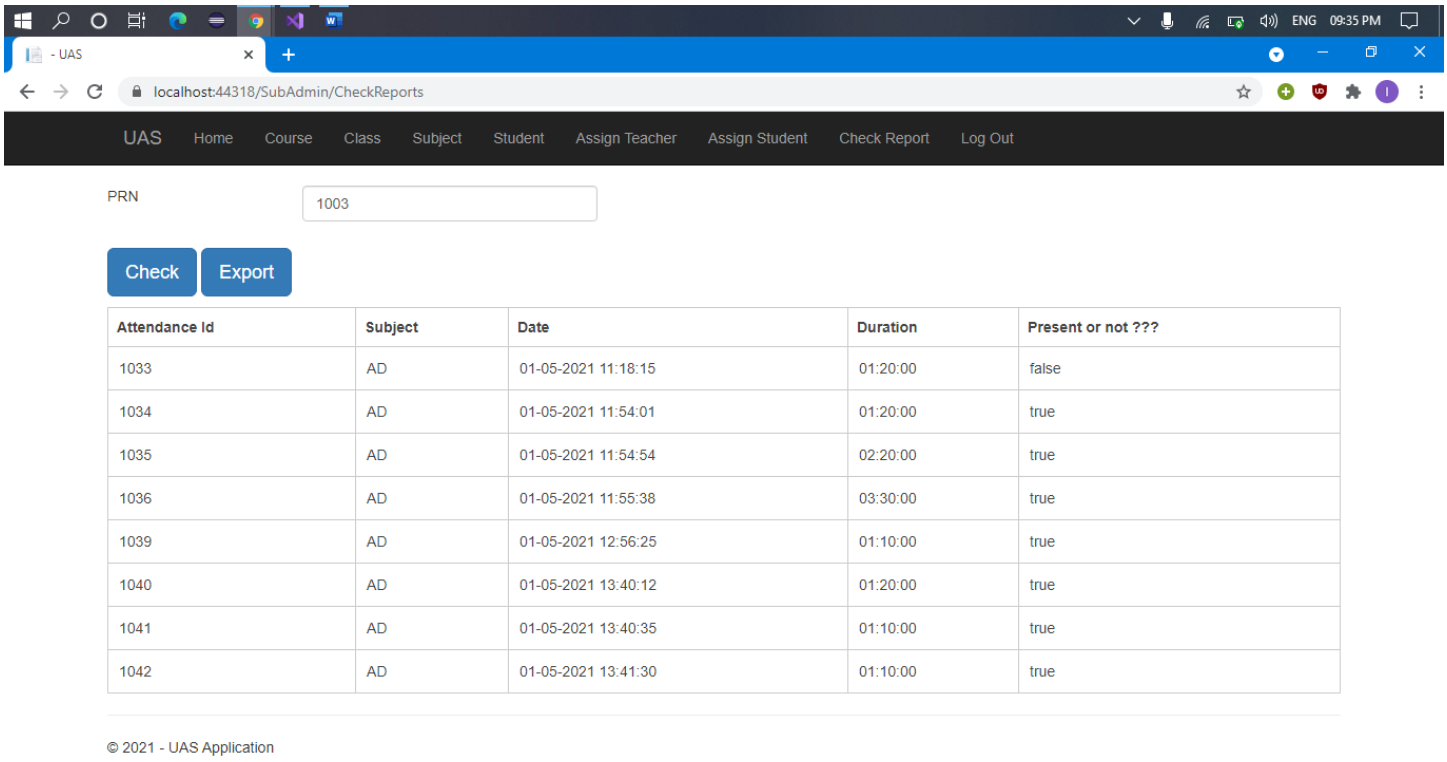


University Attendance System

→ Assign elective Subject to Students :

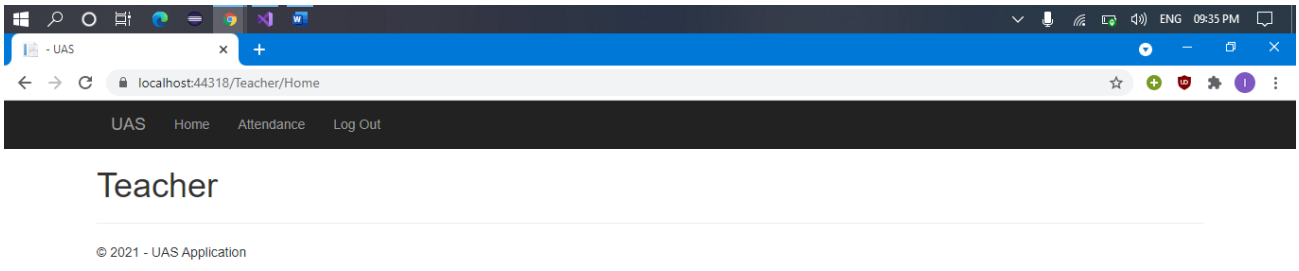


→Check report :

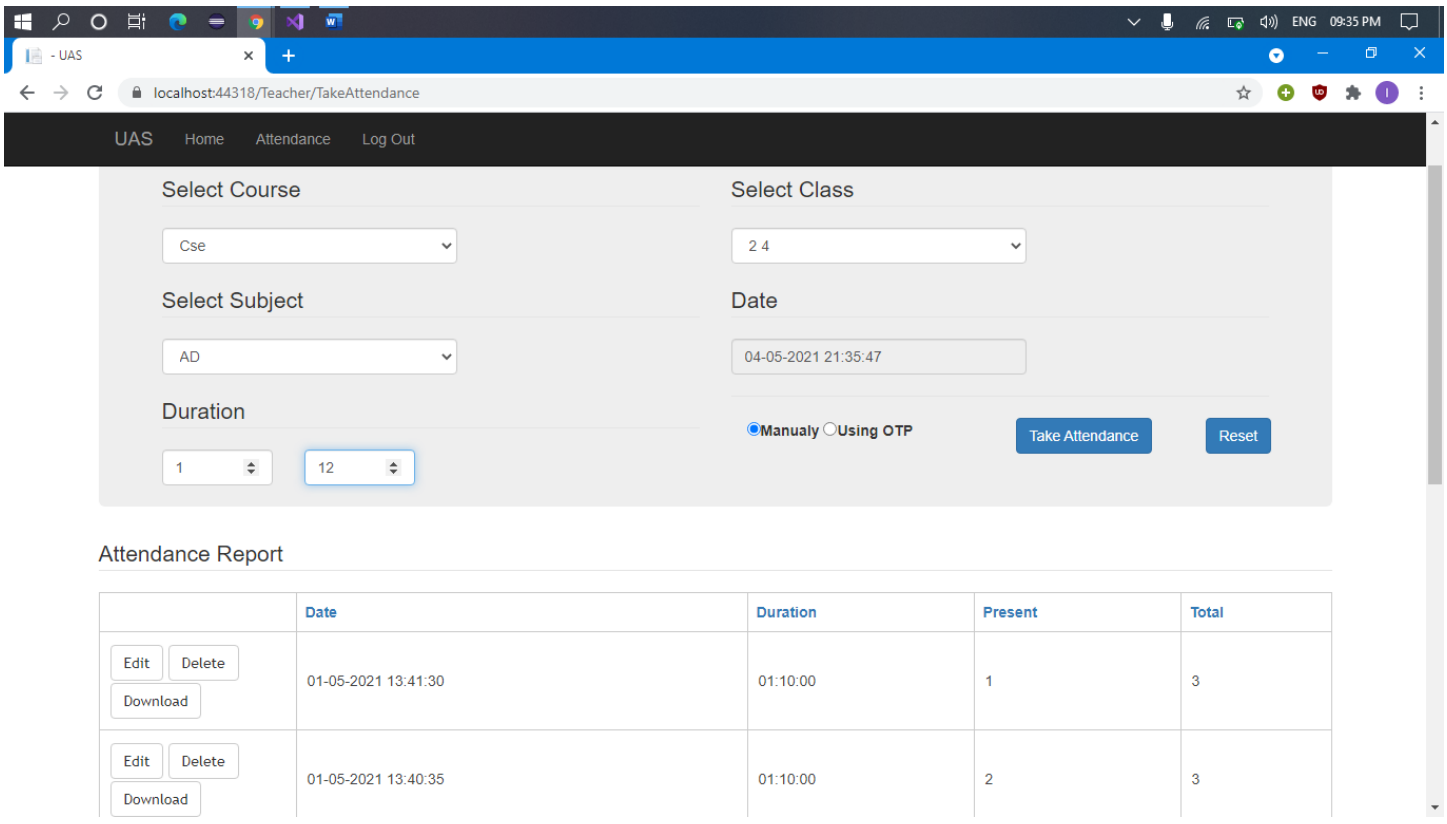


Teacher :-

→ Teacher home dashboard :

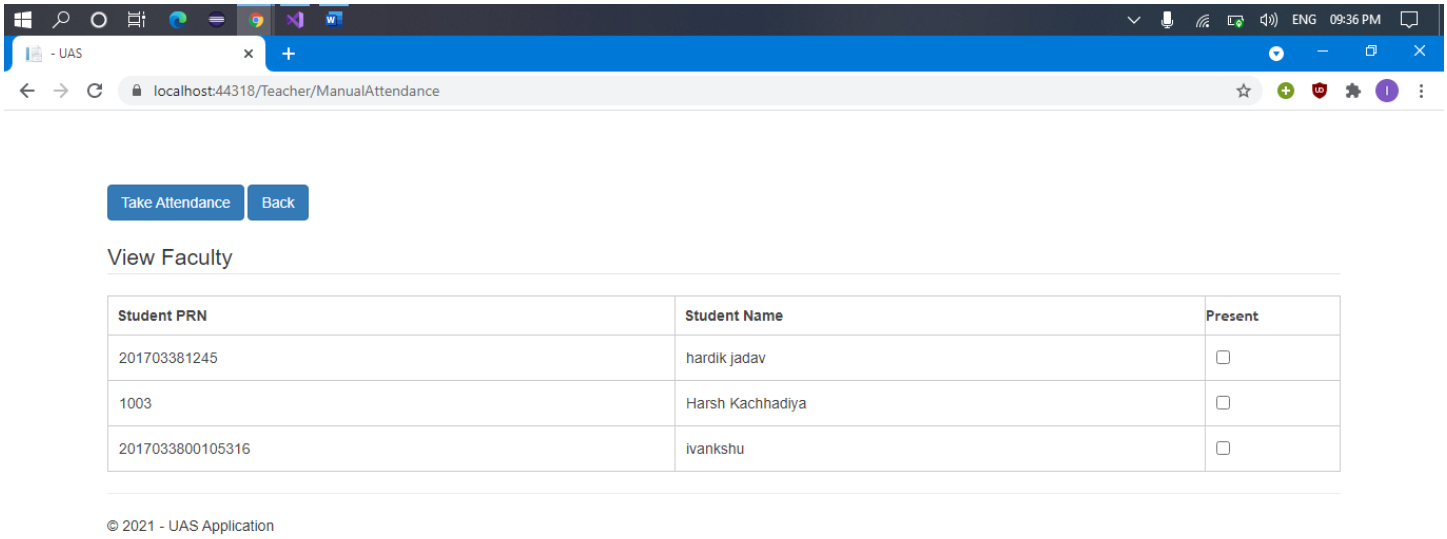


→ Take/ Edit/ Download attendance :

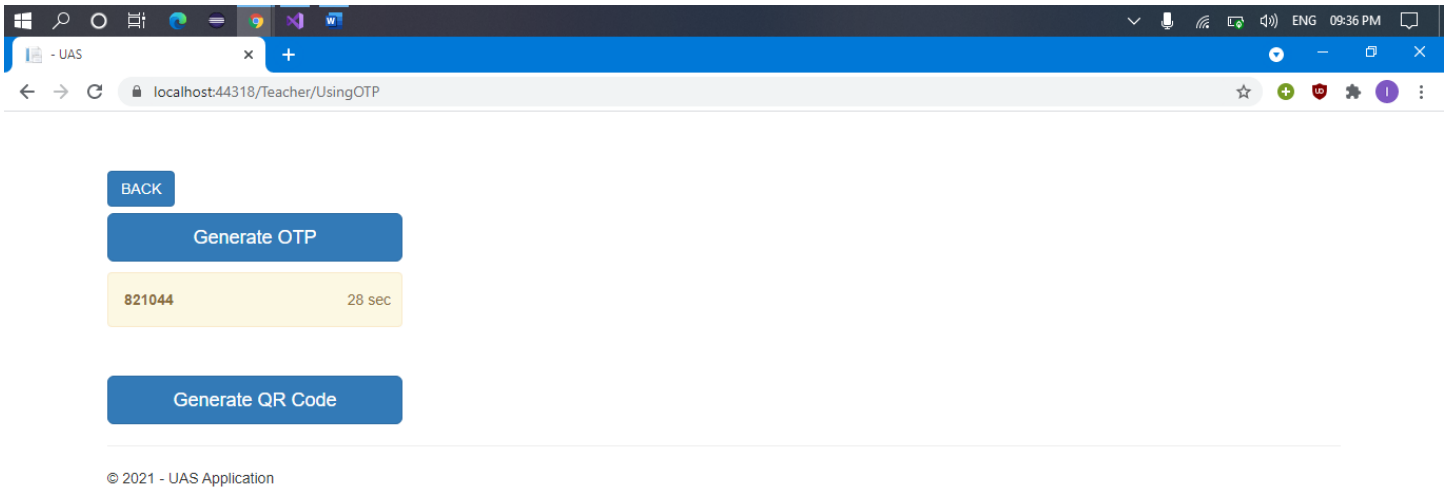


University Attendance System

→ Take/ Edit attendance manually :

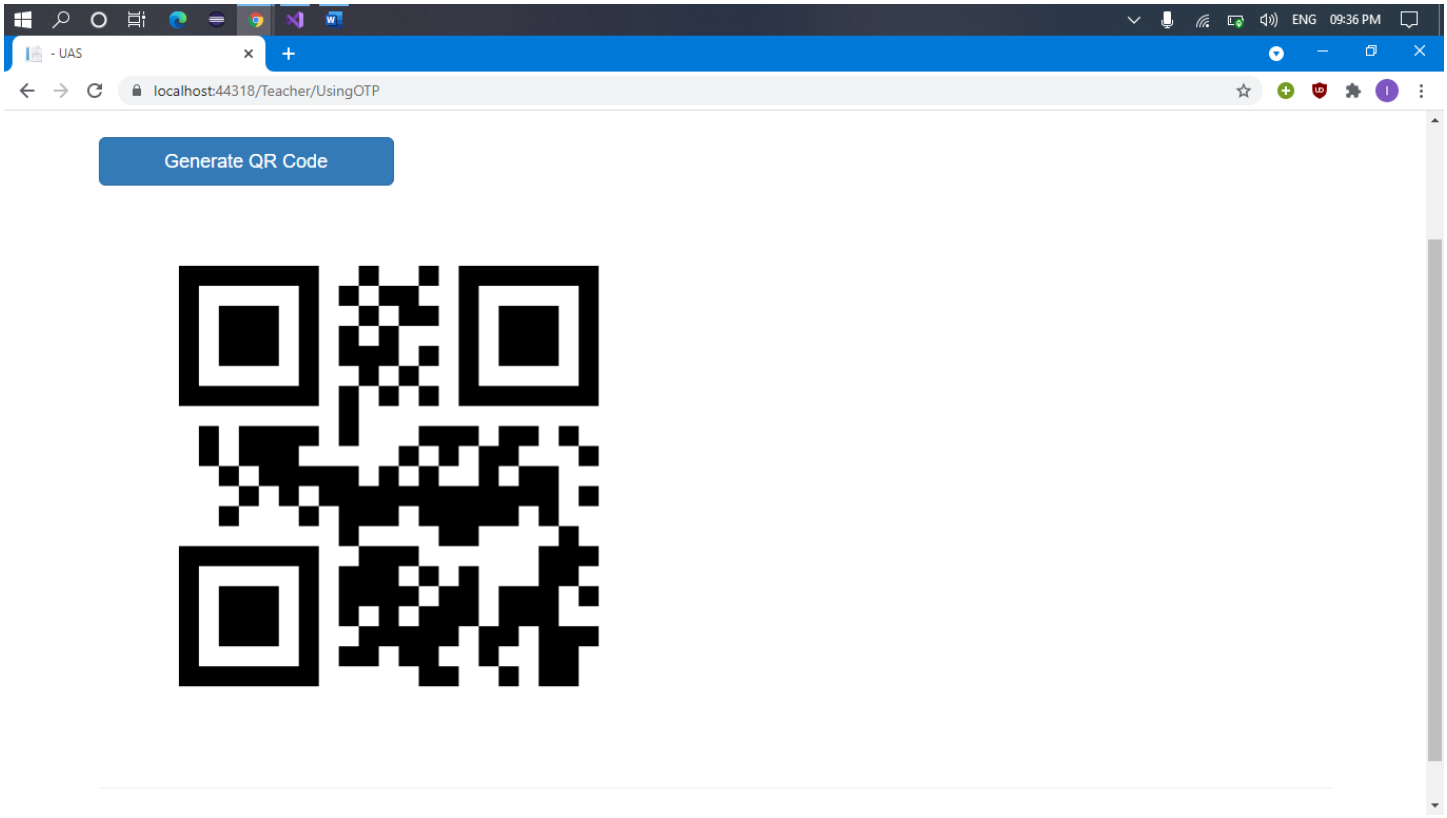


→ Take attendance using OTP :



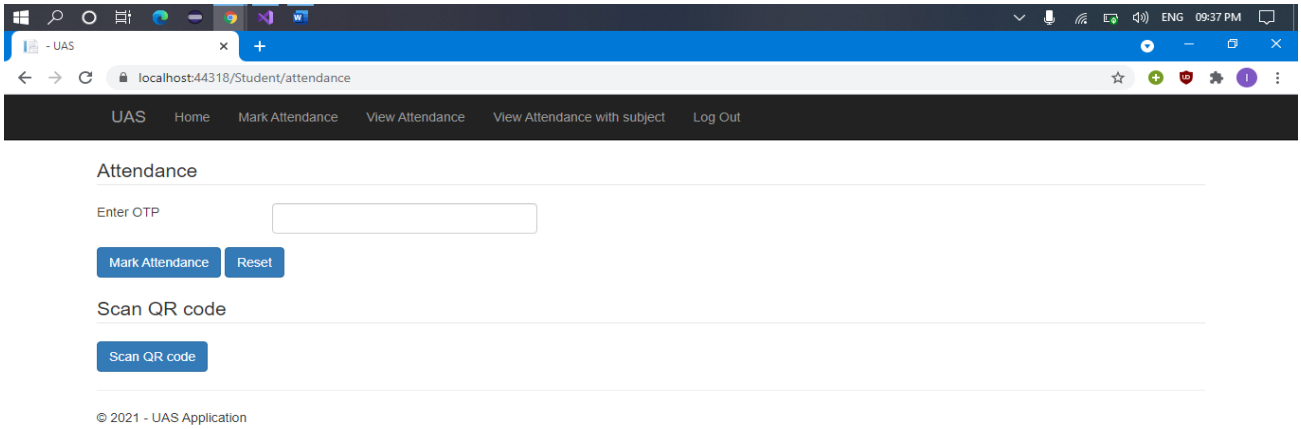
University Attendance System

→ Take attendance using OR code :



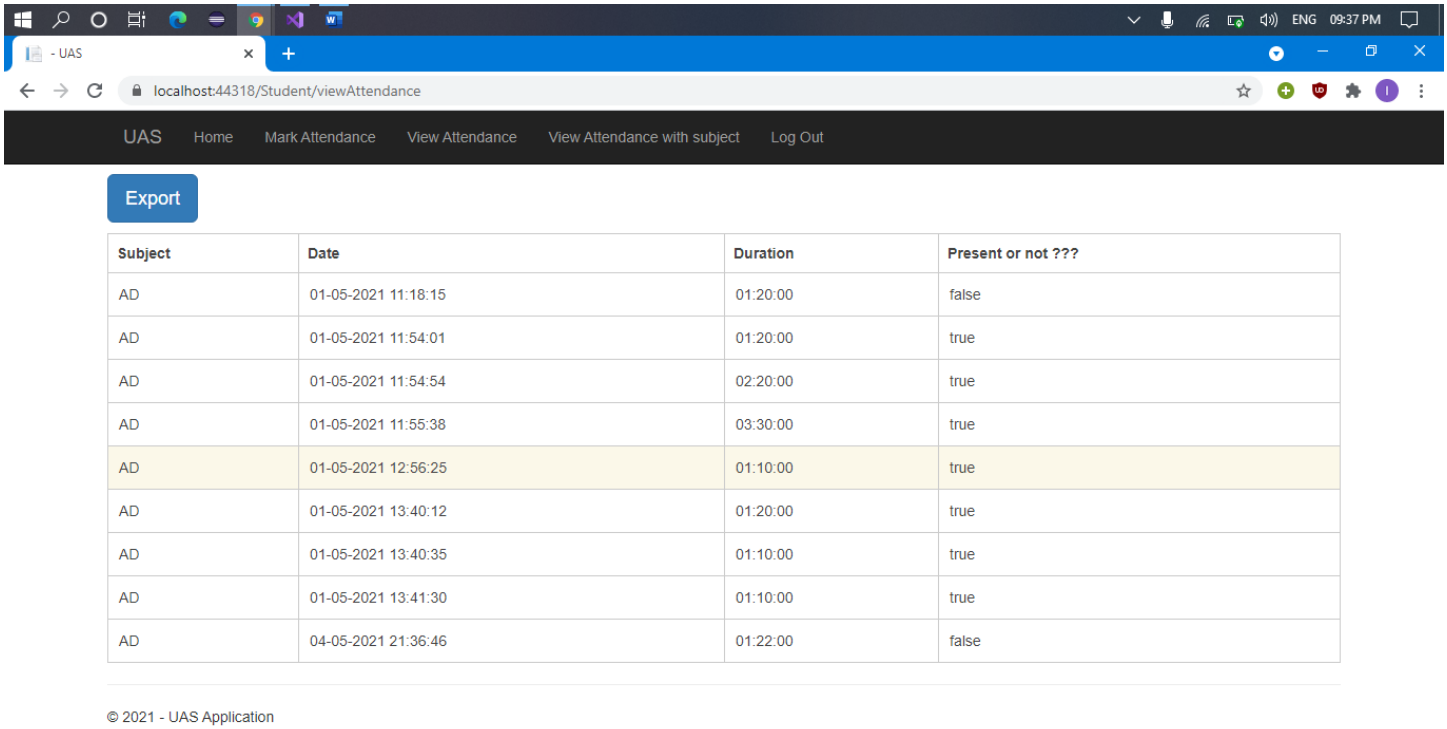
Student :-

→ Mark attendance using OTP :

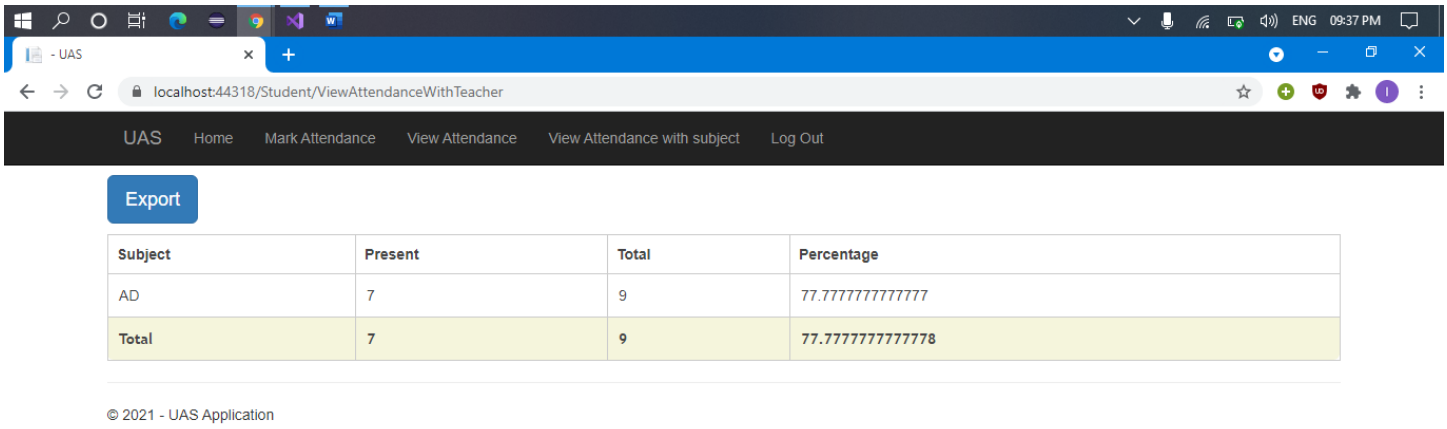


University Attendance System

→ View attendance report :



→View attendance report with Subject :



5) CONCLUSION

→ This Proposed attendance system overcome all problem of Existing system like paper work, time consuming, human effort, back-up data, etc.. . The system will working enormously and is ready to use to manage all attendance details of students for any department of the University.

6) REFERENCES

- Front-end Design:
  →https://getbootstrap.com/

- Back-end coding:
  →https://www.c-sharpcorner.com
  →https://stackoverflow.com
  →https://www.aspsnippets.com
  →https://docs.microsoft.com/en-us/aspnet

- Drawing tool for Diagram and Report (Software Engineering):
  →http://www.microsoftvisio.com/
  →GPRS Tutorial (https://www.tutorialspoint.com/software_engineering/)