

CSC1808 PROJECT

“University Attendance System”

A Project Report

Submitted by:

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Faculty of Technology & Engineering

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Table of Contents

Sr. No.	Topic	Page No.
I	Title Page	1
II	Declaration of the Student	3
III	Certificate of the Guide	4
IV	Abstract	5
V	Acknowledgement	6
1	INTRODUCTION	
1.1	Problem Definition	7
1.2	Project Overview/Specifications	7
1.3	Hardware Specification	9
1.4	Software Specification	9
2	LITERATURE SURVEY	
2.1	Existing System	10
2.2	Proposed System	11
3	SYSTEM ANALYSIS & DESIGN	
3.1	Requirement Specification	13
3.2	Flowcharts / DFDs / ERDs	15
3.3	Testing Process	25
4	RESULTS / OUTPUTS / SCREENSHOTS	27
5	CONCLUSIONS / RECOMMENDATIONS	40
6	REFERENCES	41



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 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.

University Attendance System

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

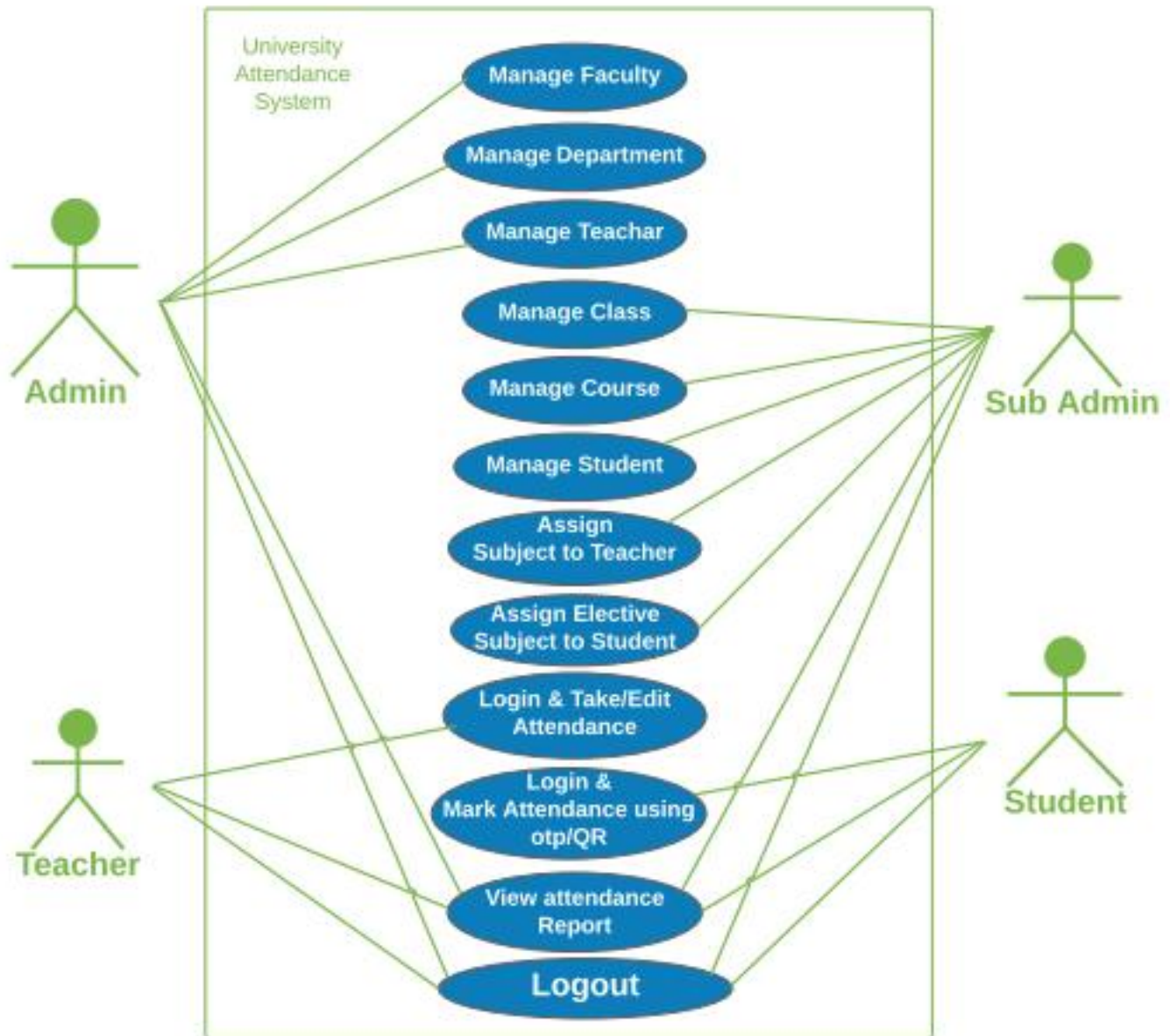
- System will generate updated attendance report and they can easily view or download it.

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.

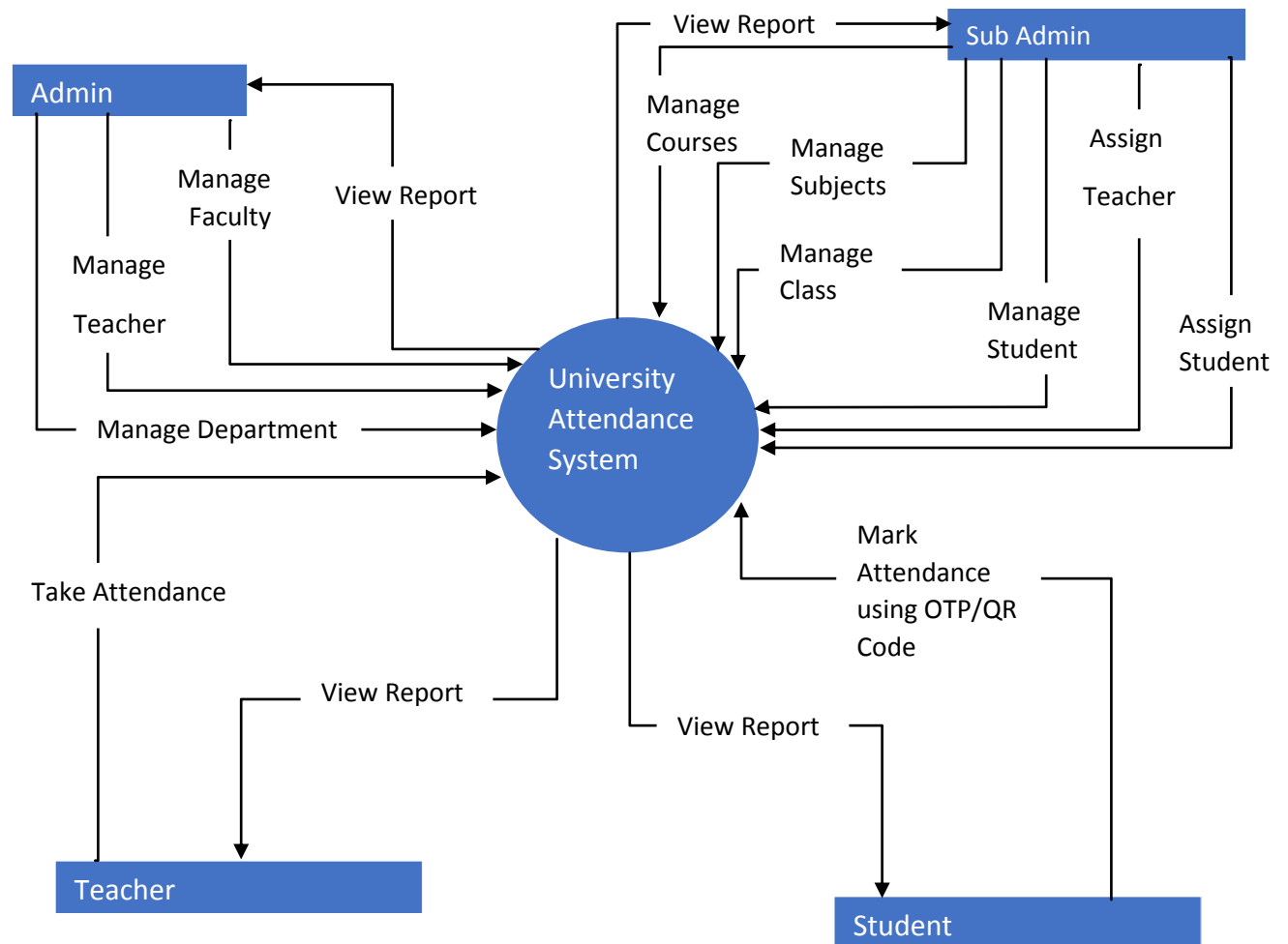
3.2) Flow Chart and DFDs/ERs:

Use Case Diagram:



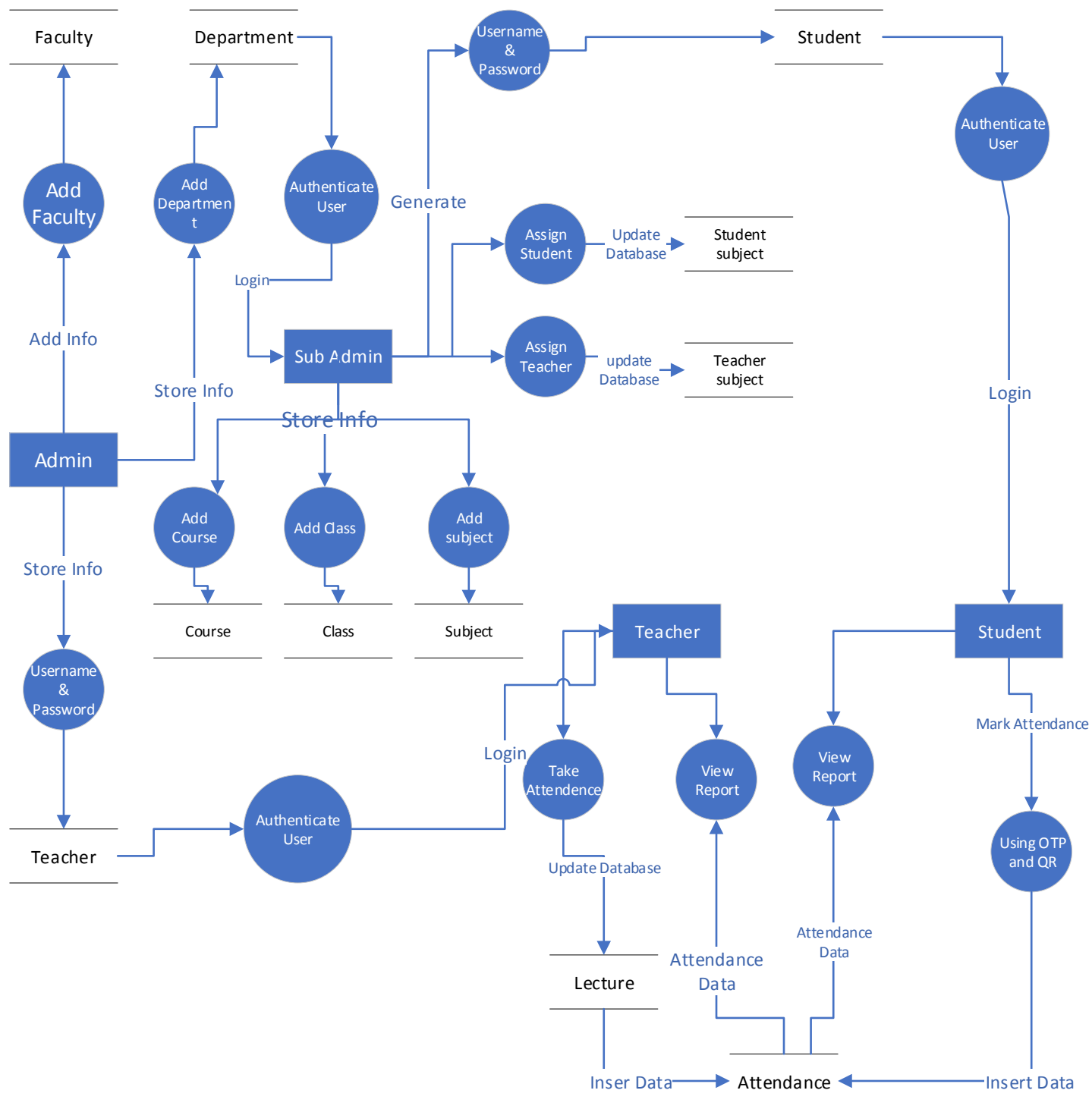
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DFD Level-0 Diagram:



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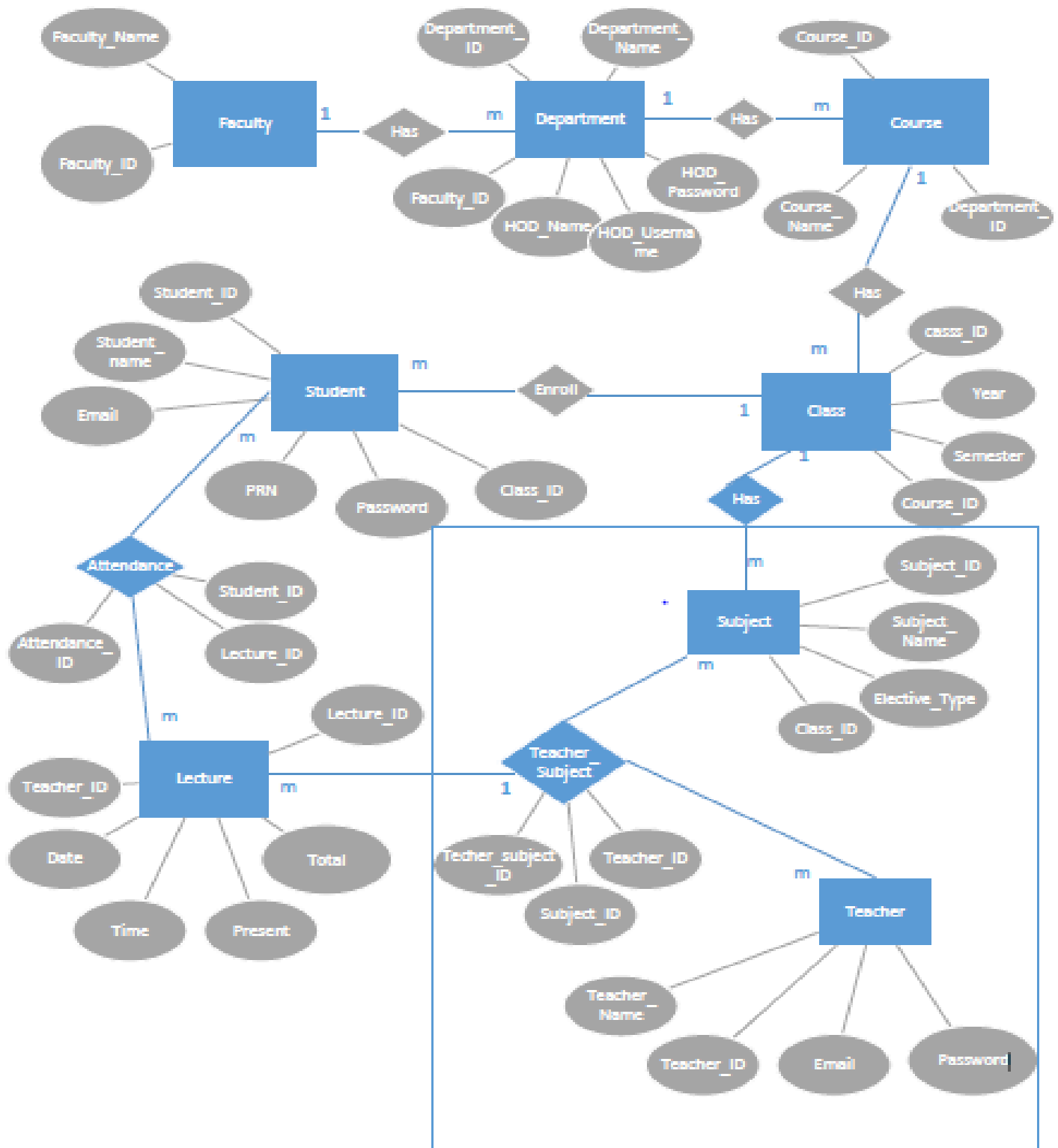
DFD Level-1 Diagram:



DFD Level-1

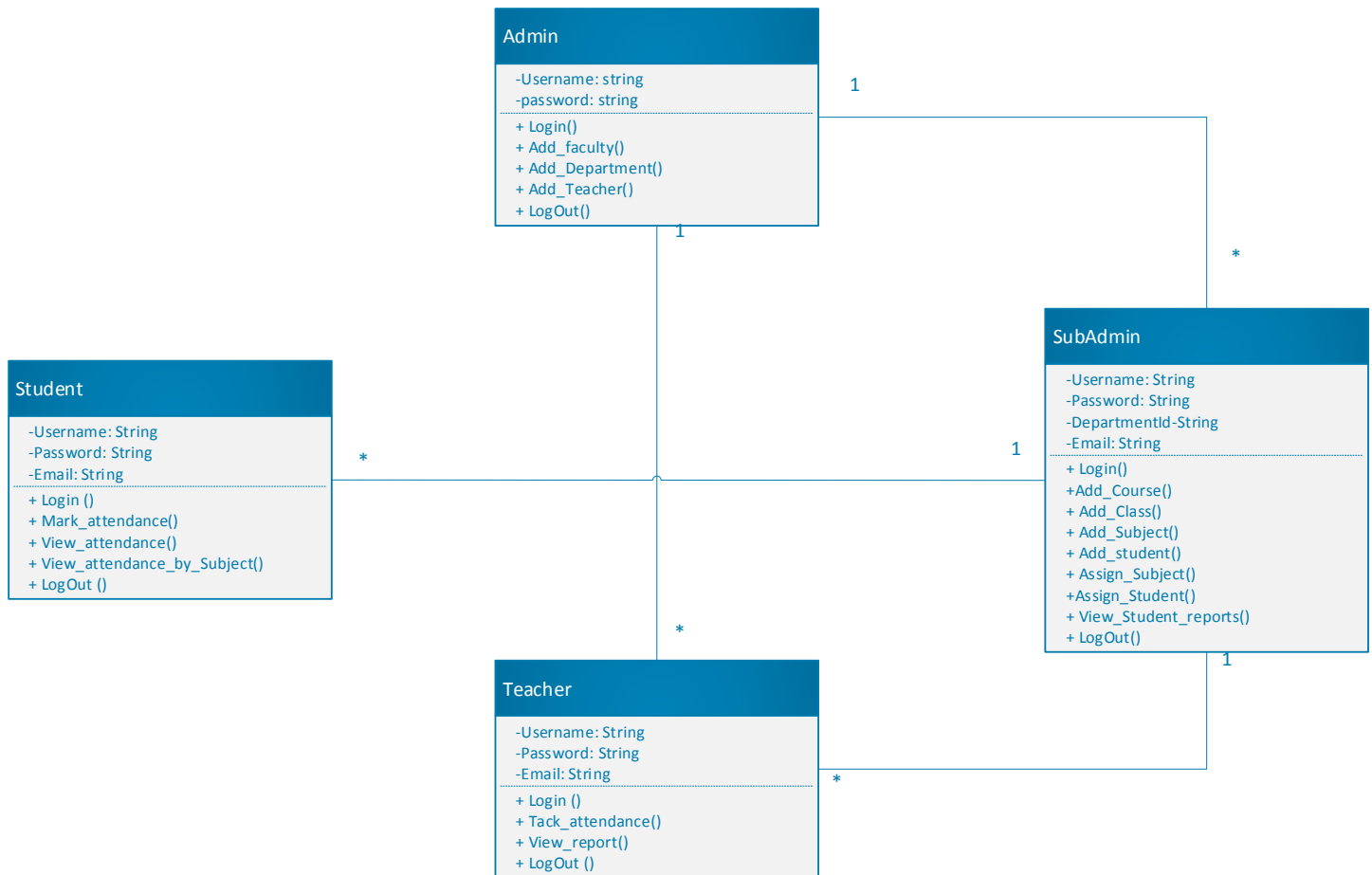
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ER Diagram:



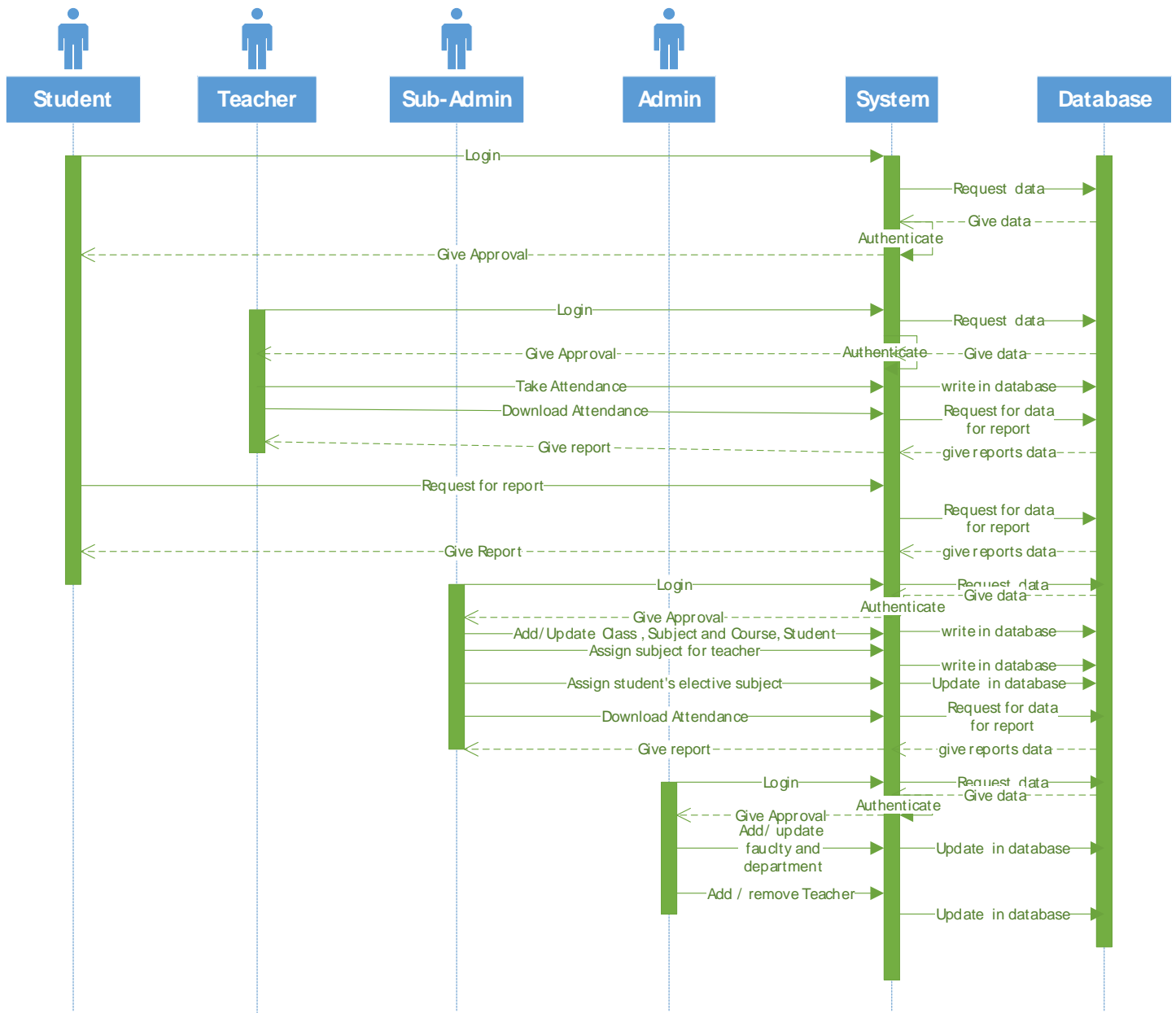
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Class Diagram:



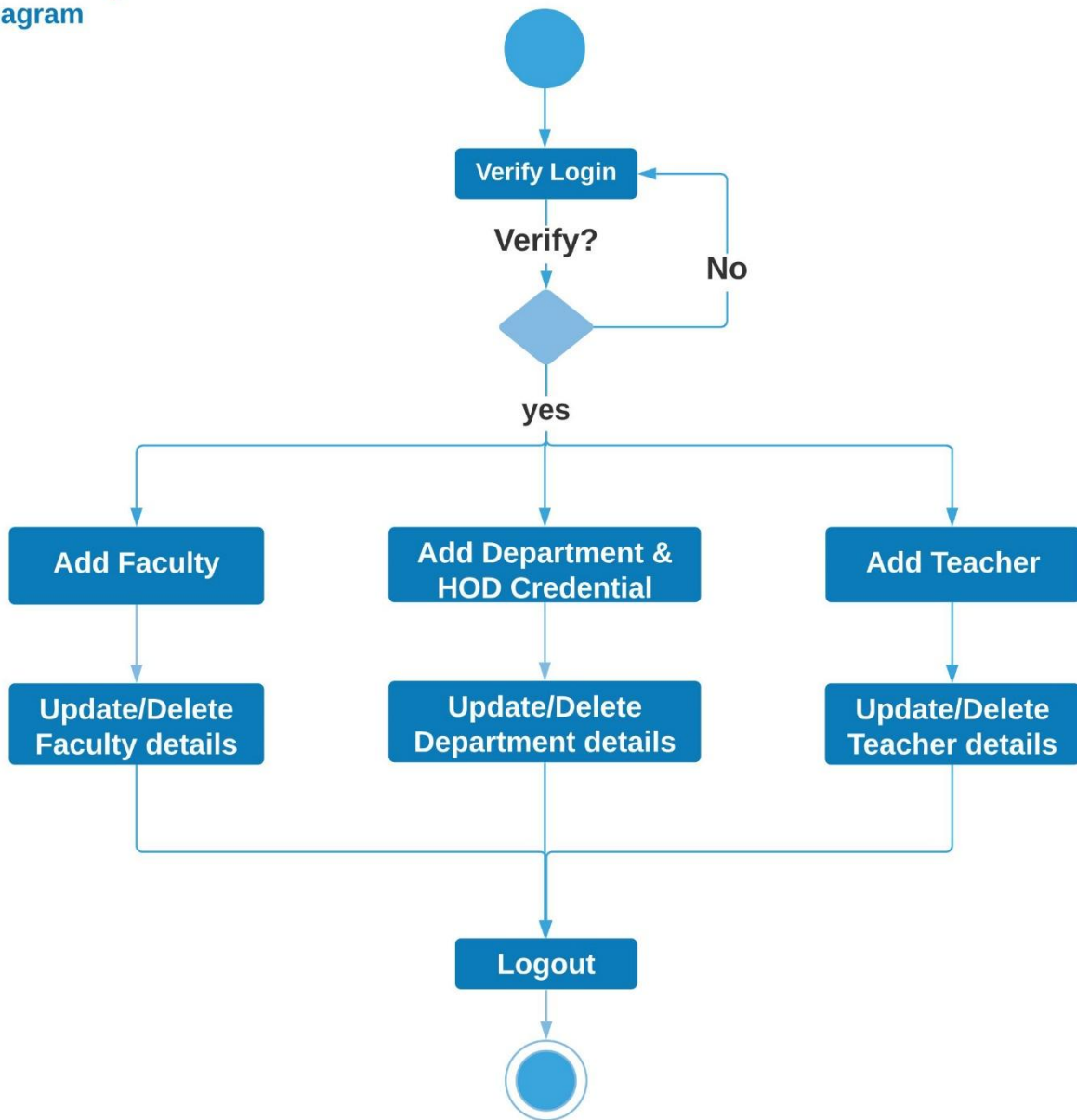
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Sequence Diagram:



Admin Activity Diagram:

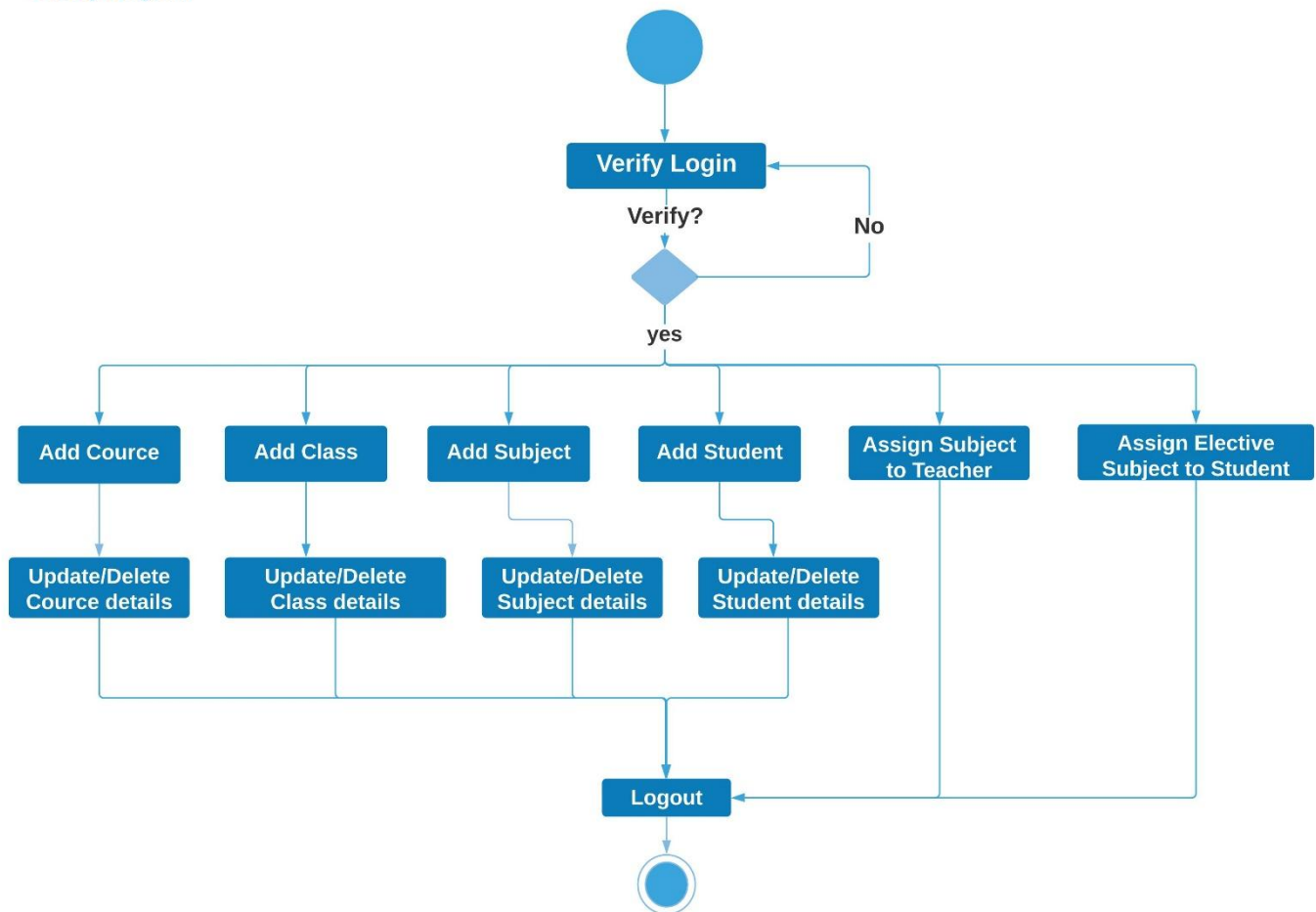
Admin Activity Diagram



University Attendance System

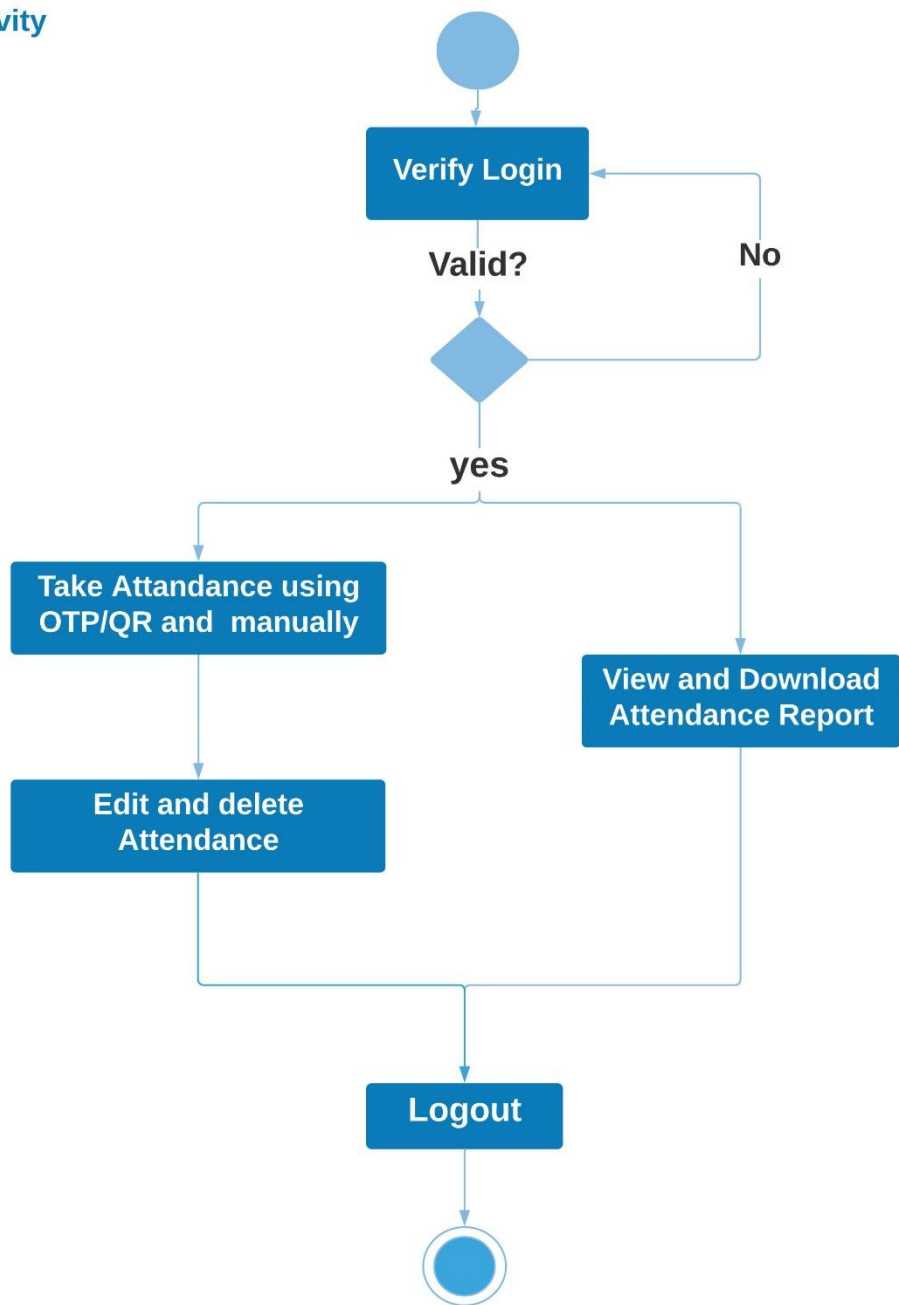
Sub-Admin Activity Diagram:

Sub Admin
Activity Diagram



Teacher Activity Diagram:

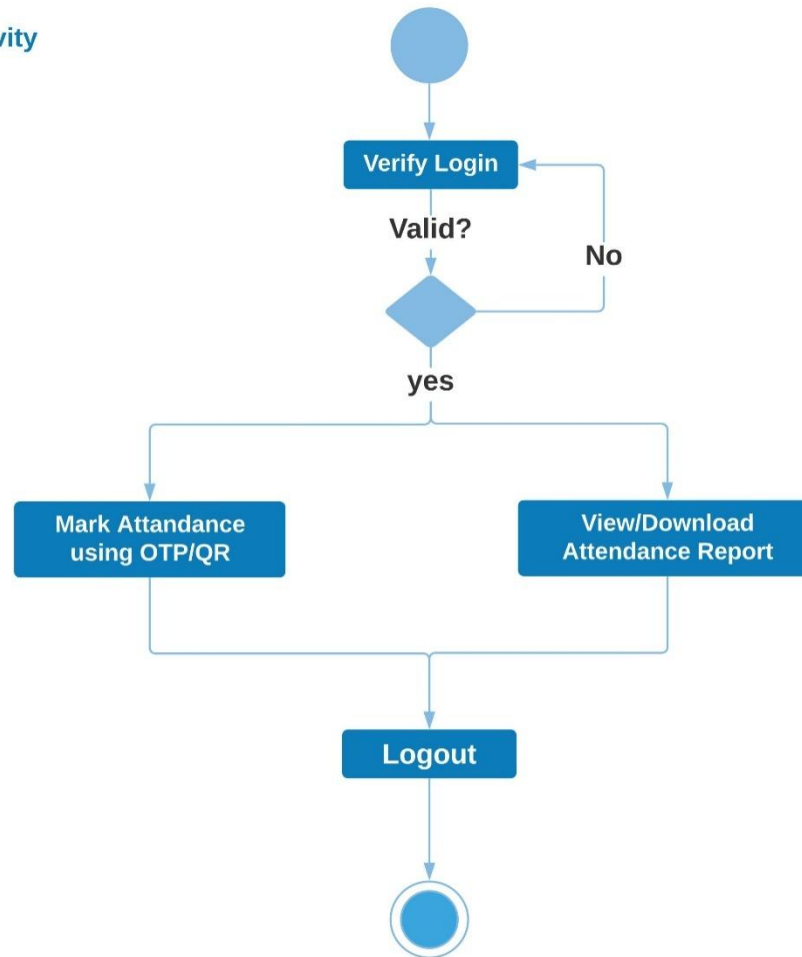
Teacher Activity Diagram



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Student Activity Diagram:

Student Activity Diagram



3.3) Testing Process:

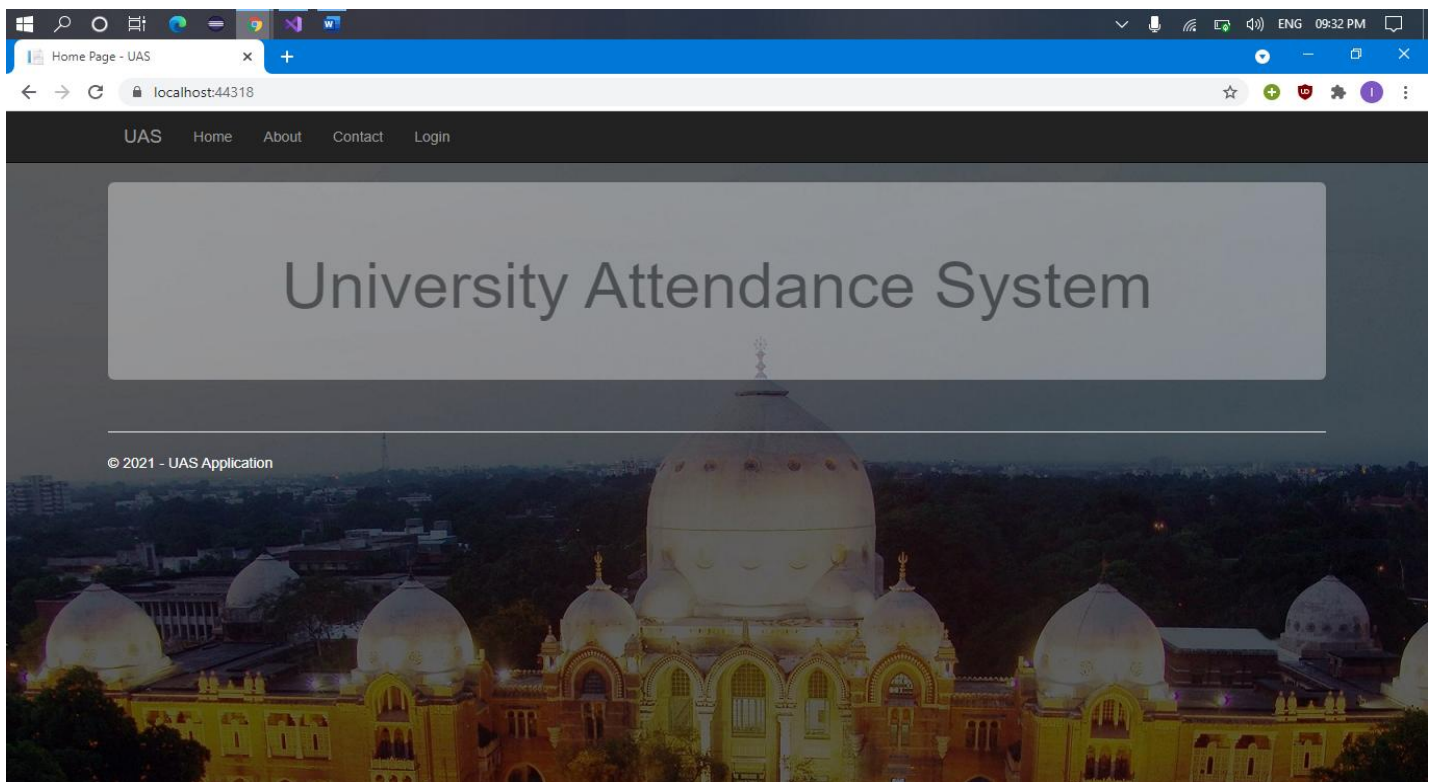
INPUT	OUTPUT	RESULT
Login: User enters Username and Password.	<p>→ If Username and Password correct then redirect to their respective dashboard.</p> <p>→ Otherwise displays alert message that “Wrong username and password”.</p>	SUCCESS
Enter received OTP for verification in Forgot Password	<p>→ If OTP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

University Attendance System

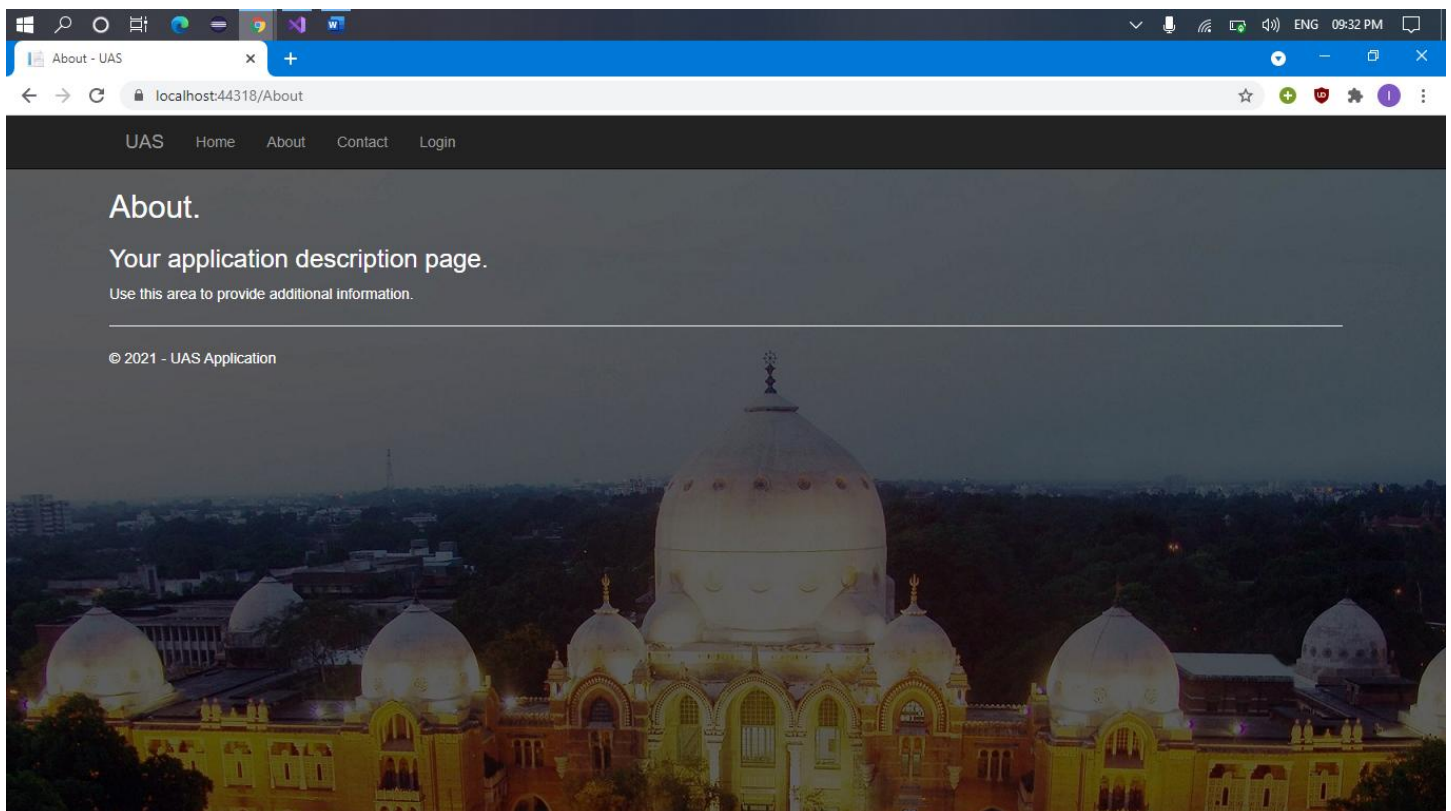
Upload Data File	<p>→ If all Column name in file are matches then data file will uploaded.</p> <p>→ Otherwise displays alert message and try with correct formatted file.</p>	SUCCESS
Student try to mark their attendance using OTP	<p>→ Student marks their attendance by entering correct OTP in right time for first time then correctly mark their attendance</p> <p>→ 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 invalidated”.</p> <p>→ If Student try to mark their attendance again then displays alert message that “Attendance already marked”.</p>	SUCCESS

4) RESULTS/ OUTPUTS/ SCREENSHOTS

→Home :

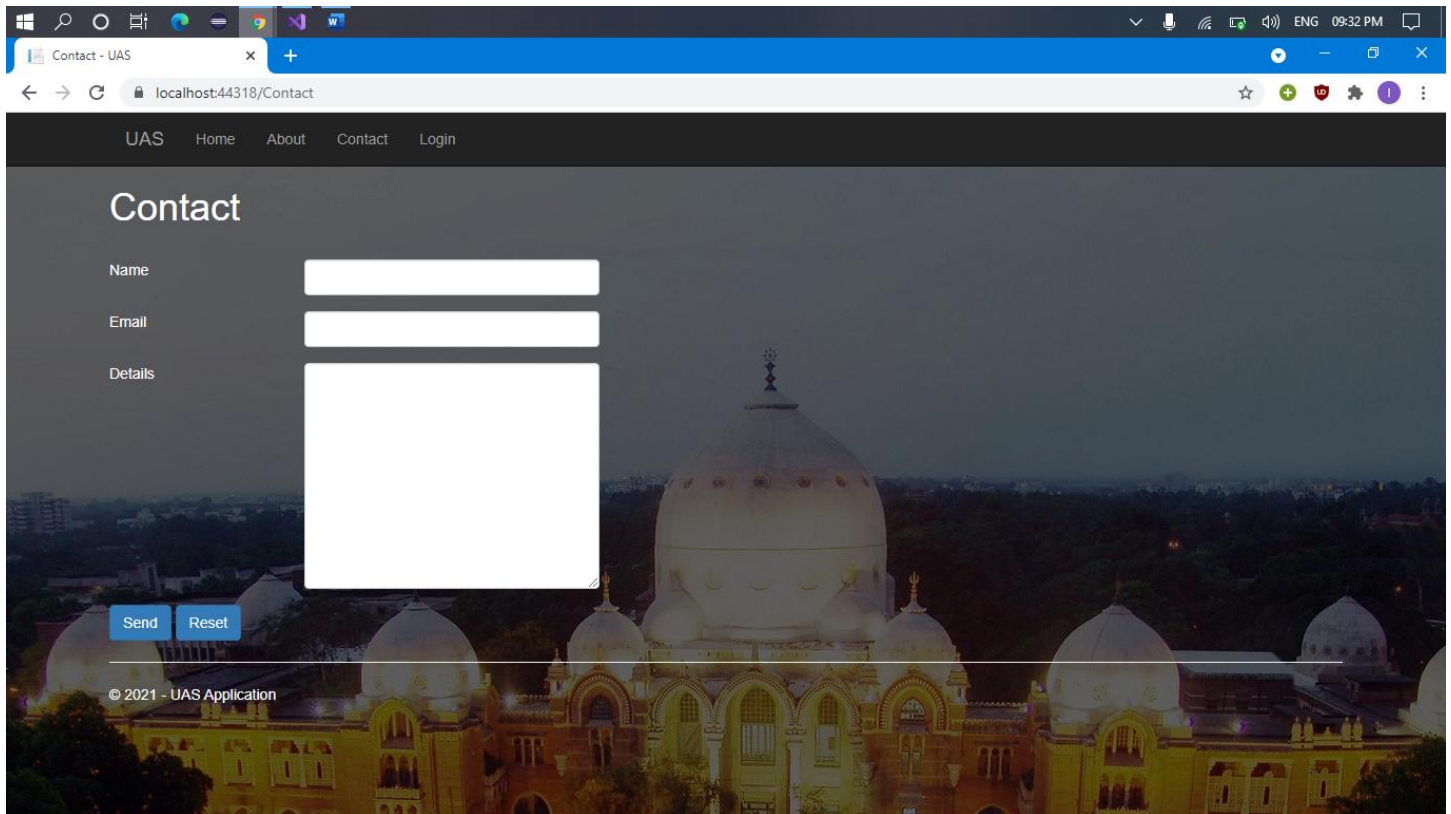


→About :



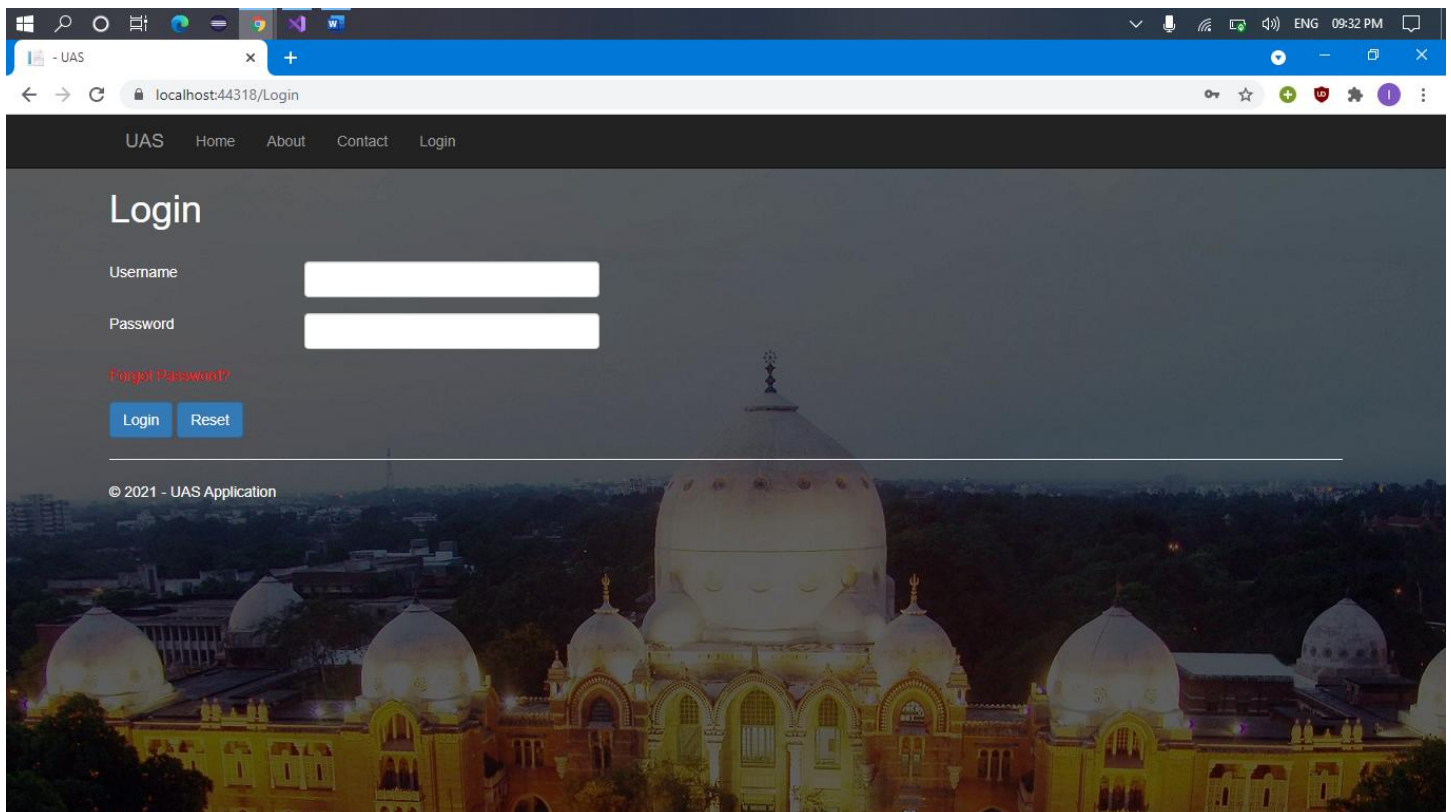
University Attendance System

→ Contact Us :



The screenshot shows a web browser window with the URL `localhost:44318/Contact`. The page has a dark header with navigation links: UAS, Home, About, Contact, and Login. The main content area features a large background image of a domed building at night. The 'Contact' title is prominently displayed. Below it, there are three input fields labeled 'Name', 'Email', and 'Details'. The 'Details' field is a larger text area. At the bottom of the form, there are 'Send' and 'Reset' buttons. A copyright notice '© 2021 - UAS Application' is visible at the bottom left of the page.

→Login :



The screenshot shows a web browser window with the URL `localhost:44318/Login`. The page has a dark header with navigation links: UAS, Home, About, Contact, and Login. The main content area features a large background image of a domed building at night. The 'Login' title is prominently displayed. Below it, there are two input fields labeled 'Username' and 'Password'. A link labeled 'Forgot Password?' is positioned below the password field. At the bottom of the form, there are 'Login' and 'Reset' buttons. A copyright notice '© 2021 - UAS Application' is visible at the bottom left of the page.

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→ Forgot password :

Forgot Password

Credential

Username

[Get OTP](#) [Reset](#)

OTP Verification

OTP

[Verify](#) [Resend OTP](#)

Set Password

Set Password

Confirm Password

[Forgot](#) [Home](#)

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 **Admin :-**

→ Admin home dashboard :

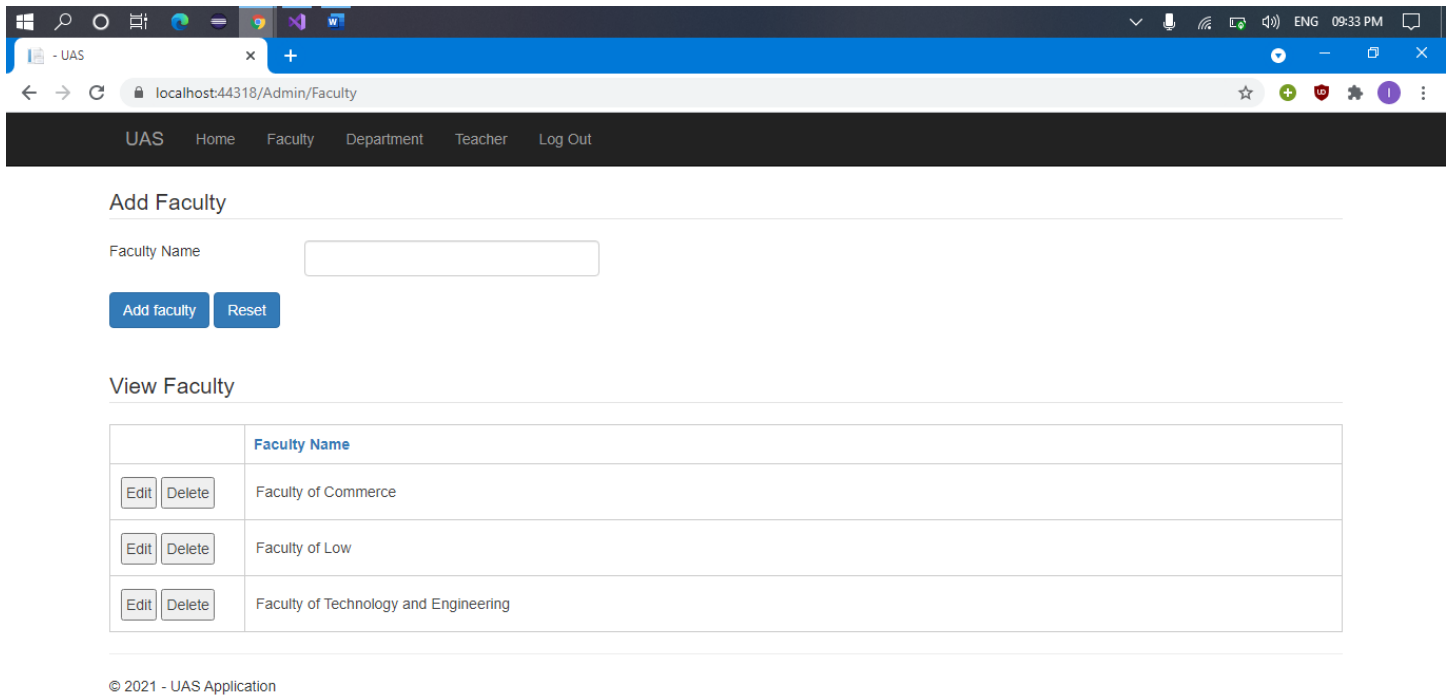
UAS Home Faculty Department Teacher Log Out

Admin

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University Attendance System

→ Add/ Update/ Delete Faculty :

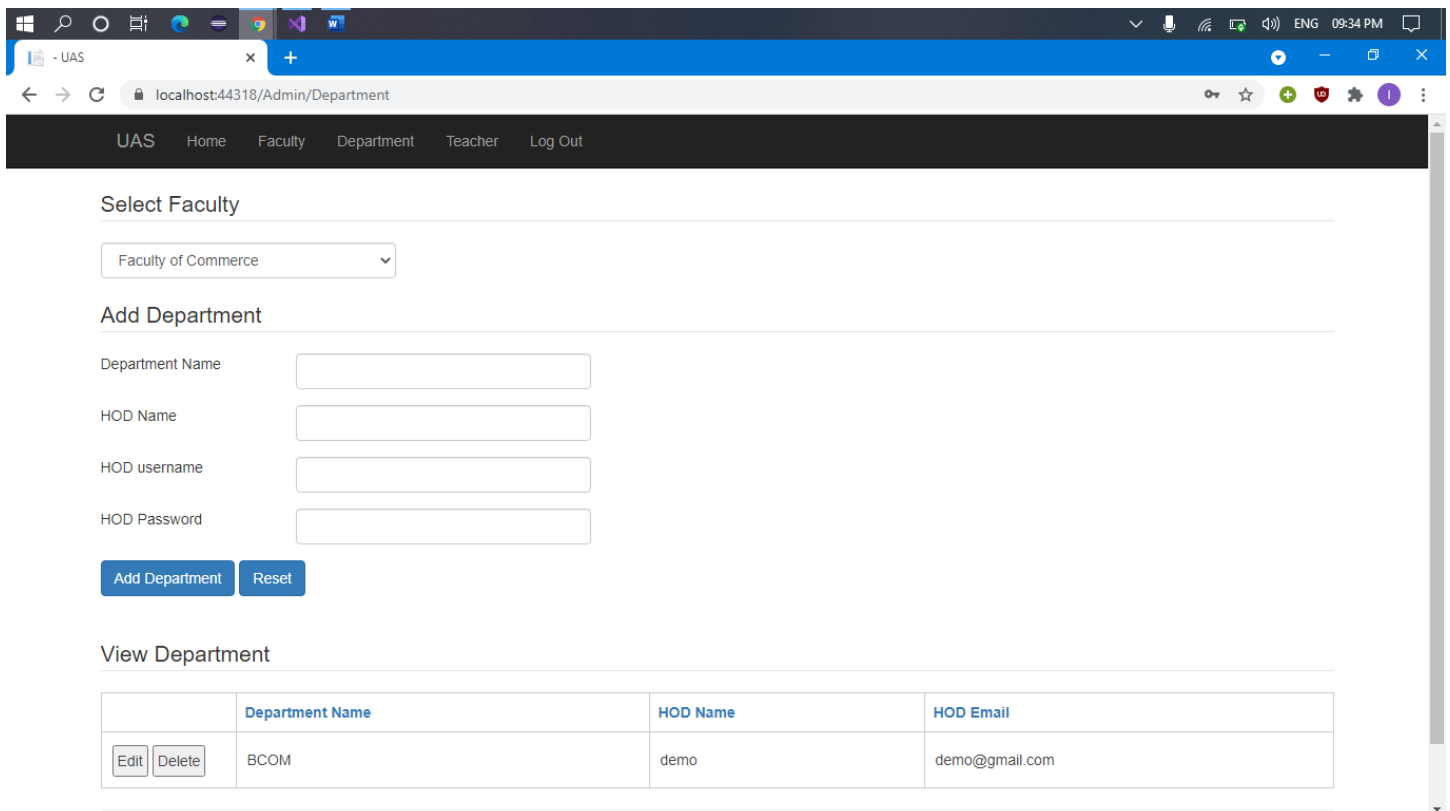


The screenshot shows the 'Admin/ Faculty' page of the UAS. The page has a navigation bar with links: UAS, Home, Faculty, Department, Teacher, and Log Out. The main content area is titled 'Add Faculty' and contains a form with a 'Faculty Name' input field and two buttons: 'Add faculty' and 'Reset'. Below this is a section titled 'View Faculty' which displays a table of existing faculty members.

	Faculty Name
Edit Delete	Faculty of Commerce
Edit Delete	Faculty of Law
Edit Delete	Faculty of Technology and Engineering

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→ Add/ Update/ Delete Department :



The screenshot shows the 'Admin/ Department' page of the UAS. The page has a navigation bar with links: UAS, Home, Faculty, Department, Teacher, and Log Out. The main content area is titled 'Select Faculty' and contains a dropdown menu with 'Faculty of Commerce' selected. Below this is a section titled 'Add Department' which contains a form with four input fields: 'Department Name', 'HOD Name', 'HOD username', and 'HOD Password'. There are two buttons: 'Add Department' and 'Reset'. Below this is a section titled 'View Department' which displays a table of existing departments.

	Department Name	HOD Name	HOD Email
Edit Delete	BCOM	demo	demo@gmail.com

University Attendance System

→ Add/ Update/ Delete Teacher credential :

UAS Home Faculty Department Teacher Log Out

Add Teacher

Teacher First Name

Teacher Last Name

Teacher Email

Add teacher Reset

Add Teacher using Excel

Download

No file chosen

Upload

View Teacher

	Teacher Email	Teacher First Name	Teacher Last Name
<input type="button" value="Edit"/> <input type="button" value="Delete"/>	harshkachhadiya56@gmail.com	Harsh	kachhadiya
<input type="button" value="Edit"/> <input type="button" value="Delete"/>	immyvavy@gmail.com	Ivankshu	Ivankshu

+ Sub-Admin :-

→ Sub-Admin home dashboard :

UAS Home Course Class Subject Student Assign Teacher Assign Student Check Report Log Out

Sub Admin

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University Attendance System

→ Add/ Update/ Delete Course :

UAS Home Course Class Subject Student Assign Teacher Assign Student Check Report Log Out

Add Course

Course Name

View Course

	Course Name
<input type="button" value="Edit"/> <input type="button" value="Delete"/>	Cse
<input type="button" value="Edit"/> <input type="button" value="Delete"/>	MCA

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→ Add/ Update/ Delete Class :

UAS Home Course Class Subject Student Assign Teacher Assign Student Check Report Log Out

Select Course

CSE ▼

Add Class

Semester

Year

View Class

	Semister	Year
<input type="button" value="Edit"/> <input type="button" value="Delete"/>	1	4

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University Attendance System

→ Add/ Update/ Delete Subject :

The screenshot shows a web browser window with the URL `localhost:44318/SubAdmin/Subject`. The page has a dark navigation bar with links: UAS, Home, Course, Class, Subject, Student, Assign Teacher, Assign Student, Check Report, and Log Out. The main content area is titled 'Select Course' and contains a dropdown menu with 'Cse' selected. Below this is a section titled 'Select Semester & Year' with a dropdown menu showing '1 2'. A 'Subject' text input field is present, followed by a checkbox labeled 'Subject is Elective type'. An 'Add Subject' button is located below the checkbox. A message box at the bottom of the form area displays 'NO DATA FOUND'. The footer of the page reads '© 2021 - UAS Application'.

Select Course

Cse

Select Semester & Year

1 2

Subject

☐ Subject is Elective type

Add Subject

NO DATA FOUND

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→ Add/ Update/ Delete Student credential :

The screenshot shows a web browser window with the URL `localhost:44318/SubAdmin/Student`. The page has a dark navigation bar with links: UAS, Home, Course, Class, Subject, Student, Assign Teacher, Assign Student, Check Report, and Log Out. The main content area is titled 'Select Course' and contains a dropdown menu with 'Cse' selected. Below this is a section titled 'Select Class' with a dropdown menu showing '1 2'. The 'Add Student' section contains three text input fields: 'Student Name', 'Student PRN', and 'Student Email'. Below these fields are 'Add student' and 'Reset' buttons. A section titled 'Add Student using Excel' includes a 'Download' link, a file selection button labeled 'Choose file' with the text 'No file chosen', and an 'Upload' button.

Select Course

Cse

Select Class

1 2

Add Student

Student Name

Student PRN

Student Email

Add student Reset

Add Student using Excel

Download

Choose file No file chosen

Upload

University Attendance System

UAS Home Course Class Subject Student Assign Teacher Assign Student Check Report Log Out

Choose file No file chosen

Upload

View Student

	Student Name	Student PRN	Student Email
Edit Delete	hardik jadav	201703381245	hardikjadav.20000@gmail.com
Edit Delete	hardik jadav	20174	jadava@gmail.com
Edit Delete	Harsh Kachhadiya	1003	harshkachhadiya57@gmail.com
Edit Delete	ivankshu	2017033800105316	1212.ivan@ivan.ivan
Edit Delete	Mohin Zadafiya	20170331001	mohin2000@gmail.com
Edit Delete	Vishal Pipaliya	2017033105010	pipaliyavishal.pv@gmail.com

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→ Assign Subject to Teacher :

UAS Home Course Class Subject Student Assign Teacher Assign Student Check Report Log Out

Select Course
Cse

Select Semester & Year
1 2

Select Subject

Select Teacher

	Teacher Email	Teacher Name
Assign	harshkachhadiya56@gmail.com	Harsh kachhadiya
Assign	immyvavvy@gmail.com	ivankshu ivankshu
Assign	savan.sv.vaghani@gmail.com	savan vaghani

12

View Assigned Teacher

University Attendance System

→ Assign elective Subject to Students :

UAS Home Course Class Subject Student Assign Teacher Assign Student Check Report Log Out

Select Course
Cse

Select Class
2 4

Select Elective Subject
AD

Search Student
Search Student
hardik jadav
Assign

Add Student using Excel
Download
Choose file No file chosen
Upload

View Student

	Student Name	PRN	Email
Delete	hardik jadav	201703381245	hardikjadav.20000@gmail.com

→ Check report :

UAS Home Course Class Subject Student Assign Teacher Assign Student Check Report Log Out

PRN
1003

Check Export

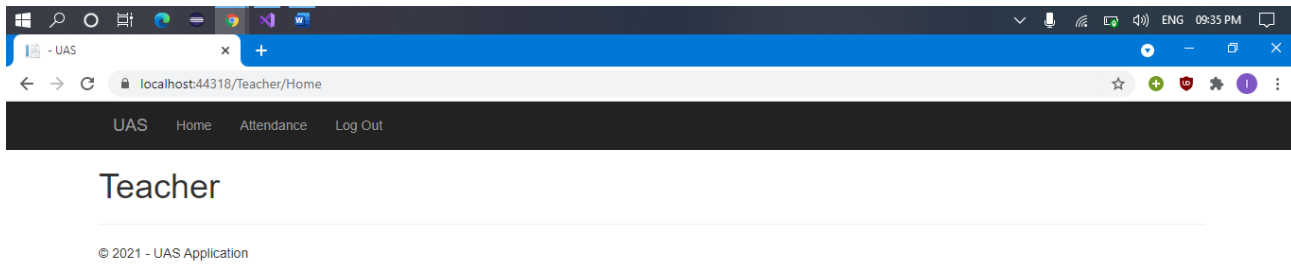
Attendance Id	Subject	Date	Duration	Present or not ???
1033	AD	01-05-2021 11:18:15	01:20:00	false
1034	AD	01-05-2021 11:54:01	01:20:00	true
1035	AD	01-05-2021 11:54:54	02:20:00	true
1036	AD	01-05-2021 11:55:38	03:30:00	true
1039	AD	01-05-2021 12:56:25	01:10:00	true
1040	AD	01-05-2021 13:40:12	01:20:00	true
1041	AD	01-05-2021 13:40:35	01:10:00	true
1042	AD	01-05-2021 13:41:30	01:10:00	true

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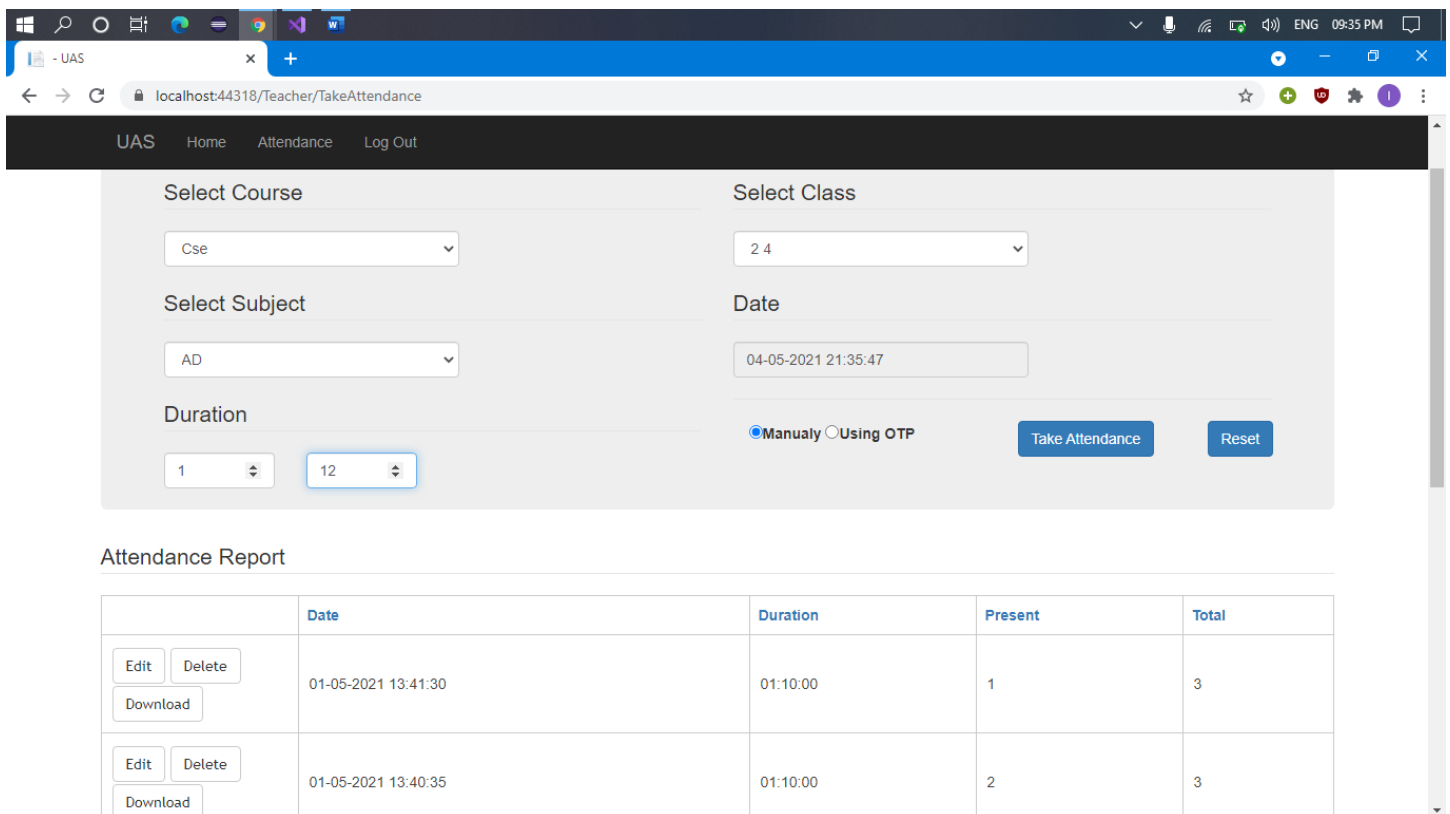
University Attendance System

 Teacher :-

→ Teacher home dashboard :



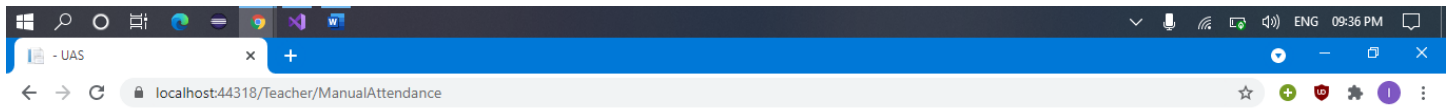
→ Take/ Edit/ Download attendance :



	Date	Duration	Present	Total
<div>Edit Delete</div> <div>Download</div>	01-05-2021 13:41:30	01:10:00	1	3
<div>Edit Delete</div> <div>Download</div>	01-05-2021 13:40:35	01:10:00	2	3

University Attendance System

→ Take/ Edit attendance manually :



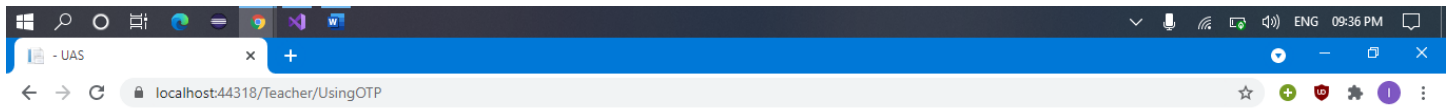
[Take Attendance](#) [Back](#)

View Faculty

Student PRN	Student Name	Present
201703381245	hardik jadav	<input type="checkbox"/>
1003	Harsh Kachhadiya	<input type="checkbox"/>
2017033800105316	ivankshu	<input type="checkbox"/>

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→ Take attendance using OTP :



[BACK](#)

[Generate OTP](#)

821044

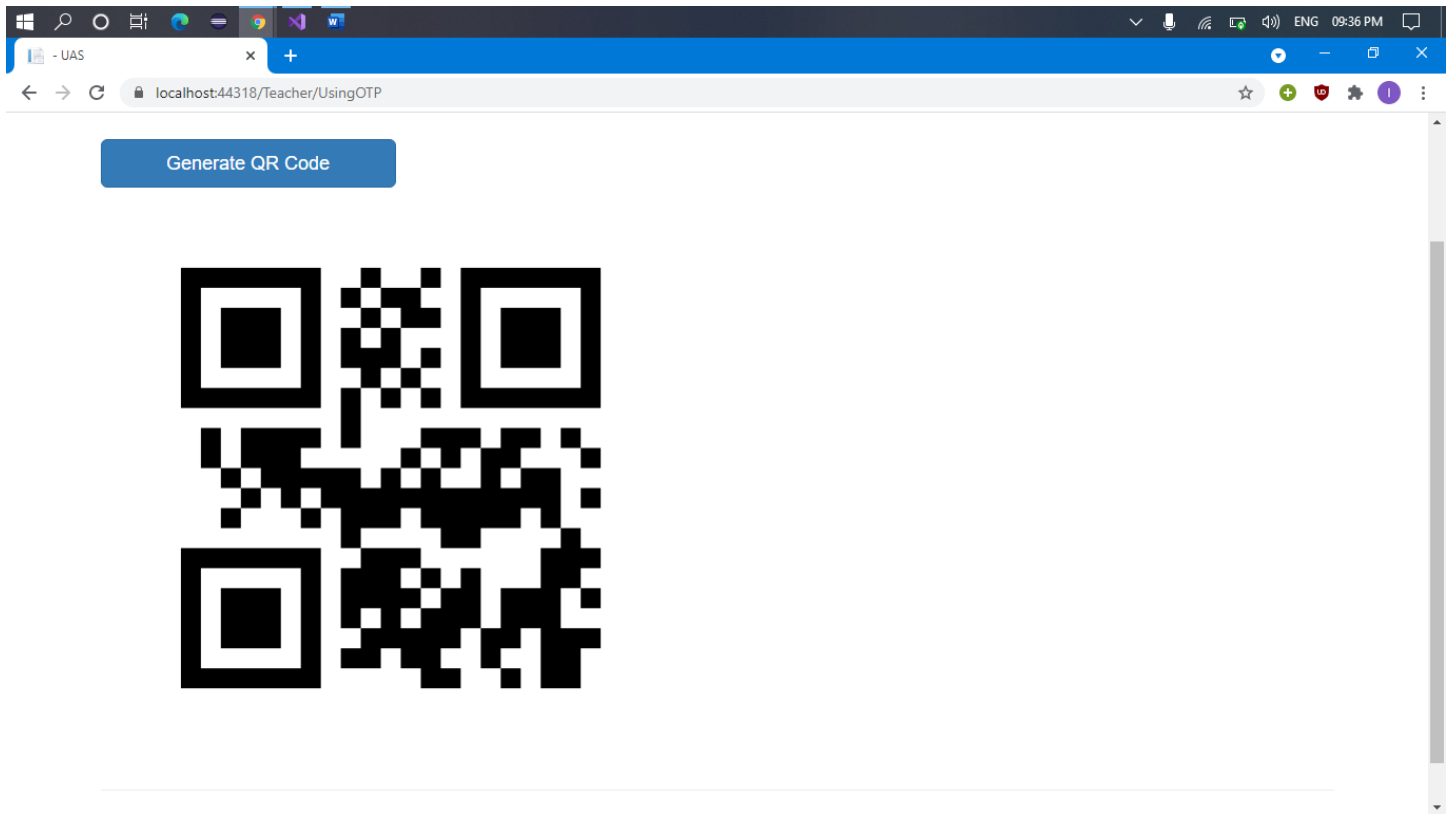
28 sec

[Generate QR Code](#)

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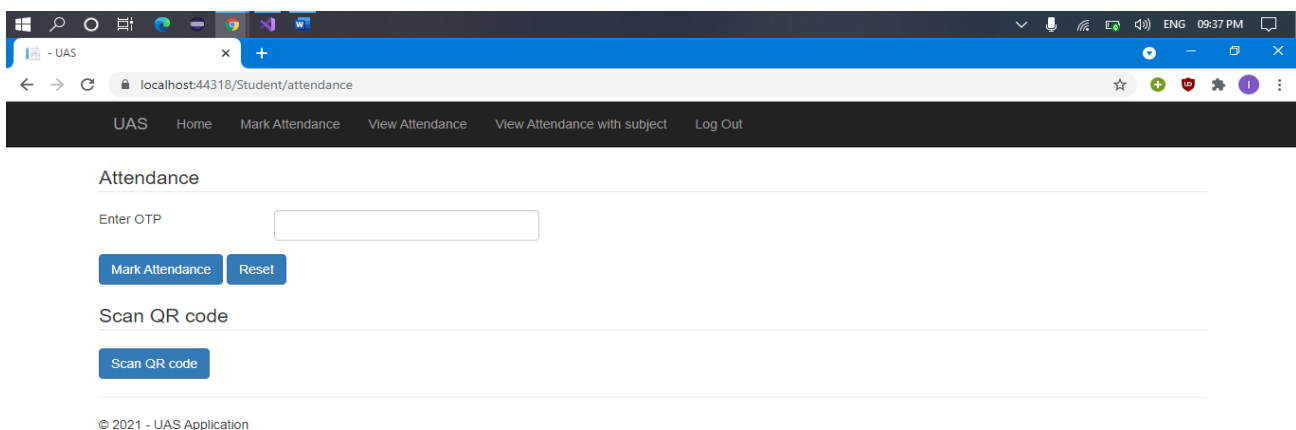
University Attendance System

→ Take attendance using QR code :



 Student :-

→ Mark attendance using OTP :



University Attendance System

→ View attendance report :

The screenshot shows a web browser window with the URL `localhost:44318/Student/viewAttendance`. The application has a dark navigation bar with links: UAS, Home, Mark Attendance, View Attendance, View Attendance with subject, and Log Out. Below the navigation bar is a blue 'Export' button. The main content area displays a table with the following data:

Subject	Date	Duration	Present or not ???
AD	01-05-2021 11:18:15	01:20:00	false
AD	01-05-2021 11:54:01	01:20:00	true
AD	01-05-2021 11:54:54	02:20:00	true
AD	01-05-2021 11:55:38	03:30:00	true
AD	01-05-2021 12:56:25	01:10:00	true
AD	01-05-2021 13:40:12	01:20:00	true
AD	01-05-2021 13:40:35	01:10:00	true
AD	01-05-2021 13:41:30	01:10:00	true
AD	04-05-2021 21:36:46	01:22:00	false

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→ View attendance report with Subject :

The screenshot shows a web browser window with the URL `localhost:44318/Student/ViewAttendanceWithTeacher`. The application has a dark navigation bar with links: UAS, Home, Mark Attendance, View Attendance, View Attendance with subject, and Log Out. Below the navigation bar is a blue 'Export' button. The main content area displays a table with the following data:

Subject	Present	Total	Percentage
AD	7	9	77.77777777777777
Total	7	9	77.77777777777778

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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/)