

Eagle Eye

A PROJECT REPORT

Submitted by

Vrushang Vaishnav (170323107026)

Joel Patel (160320107061)

Kirtan Patel (160320107063)

*In partial fulfillment for the award of degree
of Bachelor of Engineering in Computer Engineering*



**COMPUTER ENGINEERING DEPARTMENT
L. J. INSTITUTE OF ENGINEERING AND TECHNOLOGY
GUJARAT TECHNOLOGICAL UNIVERSITY
AHMEDABAD
YEAR, 2019-20**

L. J. INSTITUTE OF ENGINEERING AND TECHNOLOGY

COMPUTER ENGINEERING DEPARTMENT

YEAR, 2019-20



CERTIFICATE

This is to certify that the Project entitled "**Eagle Eye**" submitted by **Vrushang Vaishnav (170323107026)**, towards the partial fulfillment of the requirements for the degree of Bachelor of Engineering in Information Technology of L.J. Institute of Engineering and Technology, Ahmedabad, under the Gujarat Technological University, Ahmedabad is the record of work carried out by him under my supervision and guidance. In my opinion, the submitted work has reached a level required for being accepted for examination. The results embodied in this project, to the best of my knowledge, haven't been submitted to any other university or institution for award of any degree or diploma.

Prof. Ankit Patel
(Assistant Professor, L.J.)

Prof. Shweta Yagnik
(HOD - CE)

L. J. INSTITUTE OF ENGINEERING AND TECHNOLOGY

COMPUTER ENGINEERING DEPARTMENT

YEAR, 2019-20



CERTIFICATE

This is to certify that the Project entitled "**Eagle Eye**" submitted by **Joel Patel (160320107061)**, towards the partial fulfillment of the requirements for the degree of Bachelor of Engineering in Information Technology of L.J. Institute of Engineering and Technology, Ahmedabad, under the Gujarat Technological University, Ahmedabad is the record of work carried out by him under my supervision and guidance. In my opinion, the submitted work has reached a level required for being accepted for examination. The results embodied in this project, to the best of my knowledge, haven't been submitted to any other university or institution for award of any degree or diploma.

Prof. Ankit Patel
(Assistant Professor, L.J.)

Prof. Shweta Yagnik
(HOD - CE)

L. J. INSTITUTE OF ENGINEERING AND TECHNOLOGY

COMPUTER ENGINEERING DEPARTMENT

YEAR, 2019-20



CERTIFICATE

This is to certify that the Project entitled "**Eagle Eye**" submitted by **Kirtan Patel (160320107063)**, towards the partial fulfillment of the requirements for the degree of Bachelor of Engineering in Information Technology of L.J. Institute of Engineering and Technology, Ahmedabad, under the Gujarat Technological University, Ahmedabad is the record of work carried out by him under my supervision and guidance. In my opinion, the submitted work has reached a level required for being accepted for examination. The results embodied in this project, to the best of my knowledge, haven't been submitted to any other university or institution for award of any degree or diploma.

Prof. Ankit Patel
(Assistant Professor, L.J.)

Prof. Shweta Yagnik
(HOD - CE)

GUJARAT TECHNOLOGICAL UNIVERSITY

Undertaking about originality of work

We hereby certify that we are the sole authors of this IDP/UDP project report and that neither any part of this IDP/UDP project report nor the whole of the IDP/UDP Project report has been submitted for a degree by other student(s) to any other University or Institution.

We certify that, to the best of our knowledge, the current IDP/UDP Project report does not infringe upon anyone's copyright nor violate any proprietary rights and that any ideas, techniques, quotations or any other material from the work of other people included in our IDP/UDP Project report, published or otherwise, are fully acknowledged in accordance with the standard referencing practices. Furthermore, to the extent that we have included copyrighted material that surpasses the boundary of fair dealing within the meaning of the Indian Copyright (Amendment) Act 2012, we certify that we have obtained a written permission from the copyright owner(s) to include such material(s) in the current IDP/UDP Project report and have included copies of such copyright clearances to our appendix.

We have checked the write up of the present IDP/UDP Project report using anti-plagiarism database and it is in the allowable limit. In case of any complaints pertaining to plagiarism, we certify that we shall be solely responsible for the same and we understand that as per norms, University can even revoke BE degree conferred upon the student(s) submitting this IDP/UDP Project report, in case it is found to be plagiarized.

Team:

Name of Students	Enrollment number	Signature
Vrushang Vaishnav	170323107026	
Joel Patel	160320107061	
Kirtan Patel	160320107063	

Place: Ahmedabad

Date:

Guide : Prof.Ankit Patel

(Signature of Guide)

ACKNOWLEDGEMENT

I am giving hearty thanks to L.J. Institute of Engineering & Technology for providing me this opportunity for taking this kind of practical project which would be an asset for me for my future carrier and I am also very thankful to all who have directly or indirectly supported me in completion of this project. Proper organization of concept and analysis of the system is due to keen interest and helping hand of my faculties and colleagues.

I am taking this opportunity to express my gratitude and to thank all they helped me in this project. The whole process of development was able to bring out much more than what was expected by me, out of me. “Learning is a continuous process” and at this moment, I hardly have enough words to express my gratitude towards those who were constantly involved with me during my project period.

The guide performs their role of path shower. Under the shade of proper guidance a person can shape his untouched talent. Thus, my special obligations remain due towards Prof. Ankit Patel Guides with those valuable supports, guidance and inspiration, the completion of this project would not have been possible who has provided me and guided me through all the phases of my project work, and done much beyond my expectations to bring out the best in me.

Finally, I am thankful to my friends who were always there to support and help me whenever needed.

Vrushang Vaishnav(170323107026)

Joel Patel(160320107061)

Kirtan Patel(160320107063)

ABSTRACT

Eagle eye is an **Automatic Attendance System**. Initially when lecture starts, our camera will scan the face of students entering the classes which will be fixed for some time slots. And when lecture ends our camera will scan the face of students exiting the classroom which is also fixed for some time slots. After this both data at the starting of the lecture and at the ending of the lecture are matched and attendance of the particular student is done. Students have to use our website in which they will get notification when their attendance is done. And if they don't get the notification after being in lecture then students can send request of attendance to the faculty. In this web application students can view their overall attendance and also number of lectures they attended on monthly basis. Faculty will be using our windows application in which he/she can enroll new face data of students, train the model, accept/reject the attendance requests of students, edit lecture/time table details, edit student's data and edit attendance reports(excel sheets).

Table Of Content

Sr. No	Index	Page
I	Acknowledgement	I
II	Abstract	II
III	Table of Content	III
IV	List of Figures	V
V	List of Tables	VI
VI	List of Abbreviations	VII
Chapter 1	Introduction	1
1.1	Introduction to System	1
1.2	Limitation of Existing System	1
1.3	Objective of the New System	1
1.4	Problem Definition	2
Chapter 2	Requirement Analysis	3
2.1	Feasibility Study	3
2.2	Requirement of System	4
2.3	Tools and Technology used	5
2.4	Project Estimation	6
Chapter 3	System Design	7
3.1	Use-Case Diagram	7
3.2	Activity Diagram	8

170323107026
160320107063
160320107061

3.3	Data Flow Diagram	11
3.4	Sequence Diagram	15
3.5	Class Diagram	16
3.6	E-R Diagram	17
3.7	State Diagram	18
Chapter 4	Data Dictionary	19
Chapter 5	Snapshot	21
Chapter 6	Testing	30
Chapter 7	Future Enhancement	33
Chapter 8	Conclusion	34
Chapter 9	References	35
Chapter 10	Appendix	36
10.1	Periodic Progress Reports (PPR)	36
10.2	Business Model Canvas (BMC)	39
10.3	Patent Drafting Exercise(PDE)	40
10.4	Plagiarism Certificate	43

List of Figures

Sr. no	Figures	Page
3.1	Use Case Diagram	7
3.2	Activity Diagram	8
3.2.1	Activity Diagram for Main System	8
3.2.2	Activity Diagram for admin	8
3.2.3	Activity Diagram for student	9
3.2.4	Activity Diagram for faculty	10
3.3	Data Flow Diagram	11
3.3.1	Level 0 DFD	11
3.3.2	Level 1 DFD Student	12
3.3.3	Level 1 DFD Faculty	13
3.3.4	Level 1 DFD Admin	14
3.4	Sequence Diagram	15
3.5	Class Diagram	16
3.6	E-R Diagram	17
3.7	State Diagram	18
5.1	Student login	21
5.2	Registration	21

170323107026
160320107063
160320107061

5.3	Attendance Log	22
5.4	Web App Menu	22
5.5	Student's Attendance	23
5.6	Student's Profile	23
5.7	Request Page	24
5.8	Edit Profile	25
5.9	Request Page	25
5.10	Faculty Login	26
5.11	Face Recognition	26
5.12	System Training	27
5.13	Start Taking Attendedance	27
5.14	Request Checking	28
5.15	Total lectures	28
5.16	Profile Update	29
5.17	Attendance Sheet	29

170323107026
160320107063
160320107061

List of Tables

Sr. No	Tables	Page
4.1	Student	19
4.2	Faculty	19
4.3	Attendance	20
4.4	Logs	20
4.5	Requests	21
4.6	Lectures	21
6.1	Registration Testing	30
6.2	Login Page Testing	32

170323107026
160320107063
160320107061

List of abbreviations

1. UI: User Interface
2. UX: User Experience
3. LBPH: Local Binary Patterns Histograms
4. ML: Machine Learning
5. AI: Artificial Intelligence

Chapter: 1 Introduction

1.1 Introduction

Automatic Attendance System using CCTV camera:

- CCTV camera or any other camera is used to get the input footage.
- The footage is sent to the Server.
- The Server does Face Detection and Identification using a Dataset.
- Once the Face Detection and Recognition is done a Notification is sent to all students in their Web application and their attendance is stored on database.
- Identified and unidentified faces of students are also stored in our system.
- The Web application shows all the records of attendance of a student also number of lectures attended or missed and also average attendance.

1.2 Limitation of existing system

- It takes lot of time
- Student may fill attendance of another student.
- Waste of paper
- It is not easy to maintain all these papers.
- The entire task is manual.

1.3 Objective of the new system

- No need of any person, system takes attendance automatically.
- Report will be generated automatically.
- Easy maintenance.
- Requires less time

1.4 Problem Definition

Eagle eye is an Automatic Attendance System. Initially when lecture starts, our camera will scan the face of students entering the classes which will be fixed for some time slots. And when lecture ends our camera will scan the face of students exiting the classroom which is also fixed for some time slots. After this both data at the starting of the lecture and at the ending of the lecture are matched and attendance of the particular student is done. Students have to use our website in which they will get notification when their attendance is done. And if they don't get the notification after being in lecture then students can send request of attendance to the faculty. In this web application students can view their overall attendance and also number of lectures they attended on monthly basis. Faculty will be using our windows application in which he/she can enroll new face data of students, train the model, accept/reject the attendance requests of students, edit lecture/time table details, edit student's data and edit attendance reports(excel sheets).

Chapter: 2 Requirement Analysis

2.1 Feasibility study

A feasibility study is used to determine the viability of an idea, such as ensuring a project is legally and technically feasible as well as economically justifiable.

➤ Technical Feasibility:

- Integrated Python and MongoDB.
- Low light face detection

➤ Economic feasibility:

- The maintenance of a fast and reliable Server.
- Good Cameras with High Resolution to capture far-off faces.

➤ Organizational Feasibility:

- For an organizational perspective,
- The project is considered to be low risk as it analyzing the risk and minimizing it.
- It should take high demand among users.
- Board members should provide high motivation & interest for the compilation of the system.
- It should produce a better and efficient outcome for an organization which should be a fruitful outcome.

2.2 Requirement of System

➤ Functional Requirements:

- Programming Language –Python , HTML/CSS/JS/NodeJS
- High Resolution Camera
- Face Detection Algorithm
- Face Recognition Algorithm

➤ Non-Functional Requirements:

- Faster processing.
- Synchronization of datasets globally.
- Laptop/Desktop with high speed processor.

2.3 Tools and Technologies used

➤ Tools:-

- Pycharm
- Anaconda 3
- VS Code
- Robo3T

➤ Algorithms:-

- LBPH(Local Binary Patterns Histogram) for face Identification
- Sorting

➤ Libraries:-

- OpenCV
- Tensorflow
- Keras
- Numpy
- NodeJS/ExpressJS

➤ Technologies:-

- HTML
- CSS
- Java Script
- NodeJS/ExpressJS
- Python
- MongoDB

2.4 Project Estimation

- Productivity=500 lines/month;
- Salary (estimated) = \$300/month;
- LOC =600 lines;
- Effort= LOC / Productivity.
- Effort=600/300=2.
- Cost= Effort * Salary.
- Cost=2*500 = \$1000.

Chapter: 3 System Design

3.1 Usecase Diagram:

Login/Registration: User has to login/register with all the information.

View Attendance Summary: User can check their attendance.

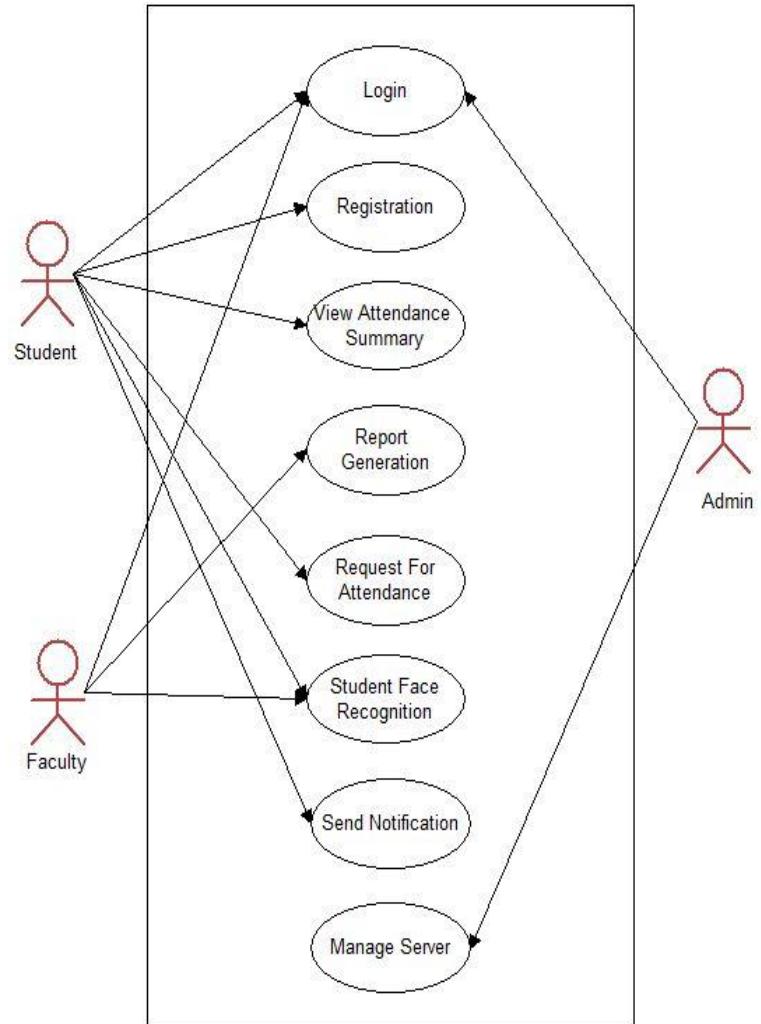
Report Generation: User can check his overall average attendance in report.

Request For attendance: If any student's attendance is not done then user can request for attendance through application.

Send Notification: User gets a confirmation notification when their attendance is done.

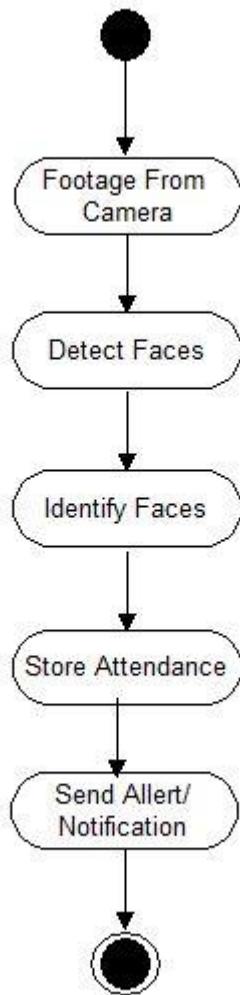
Student Face Recognition: User's face is recognized & checked in database and if matching attendance is done.

Manage Server: Admin handle's the attendance app server and if any problems faced then student has to meet the admin.

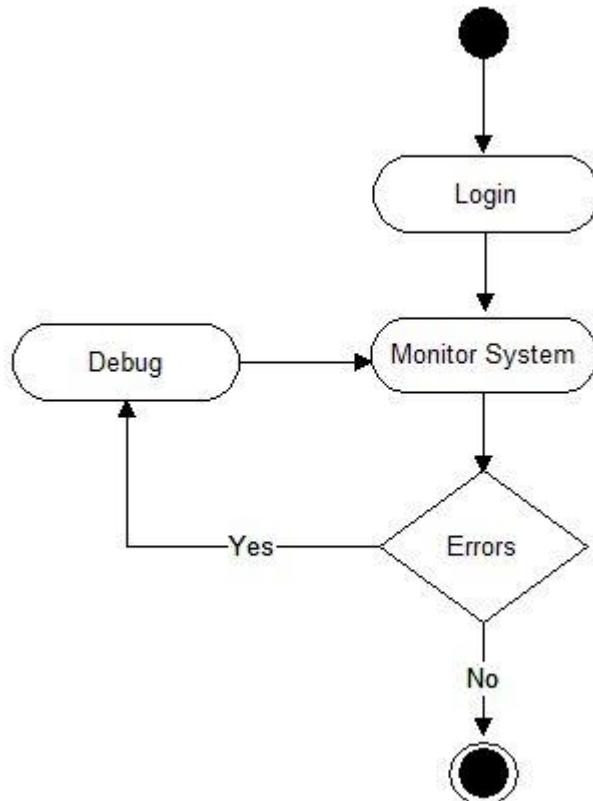


3.2 Activity Diagram:

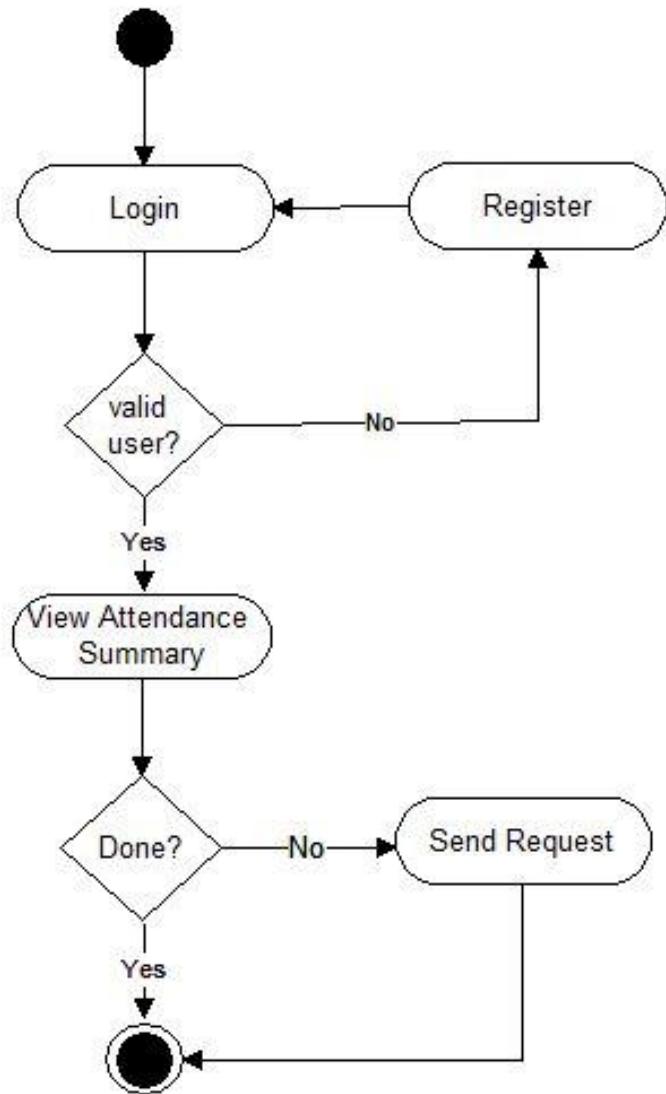
3.2.1 Main System



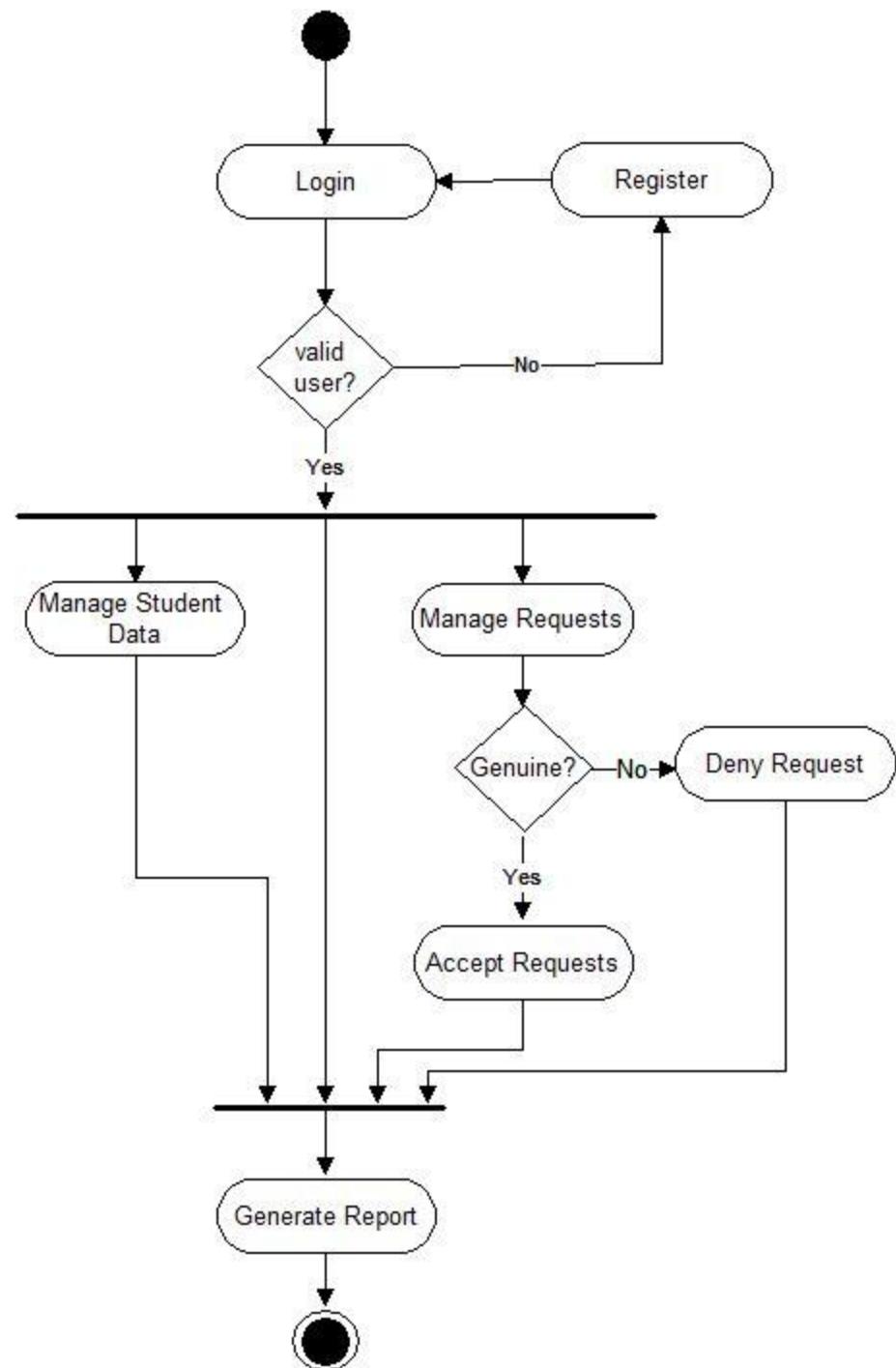
3.2.2 Admin



3.2.3 Student

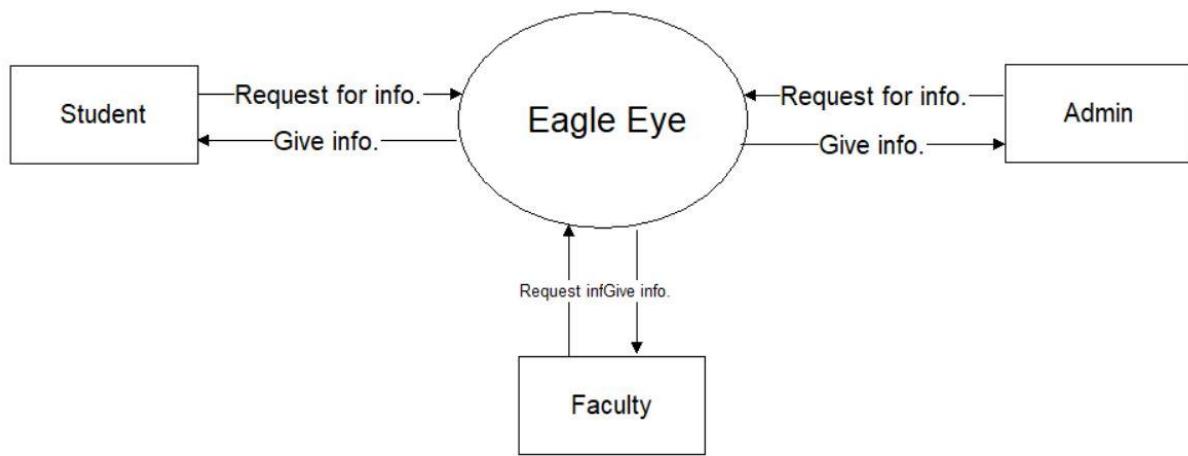


3.2.4 Faculty

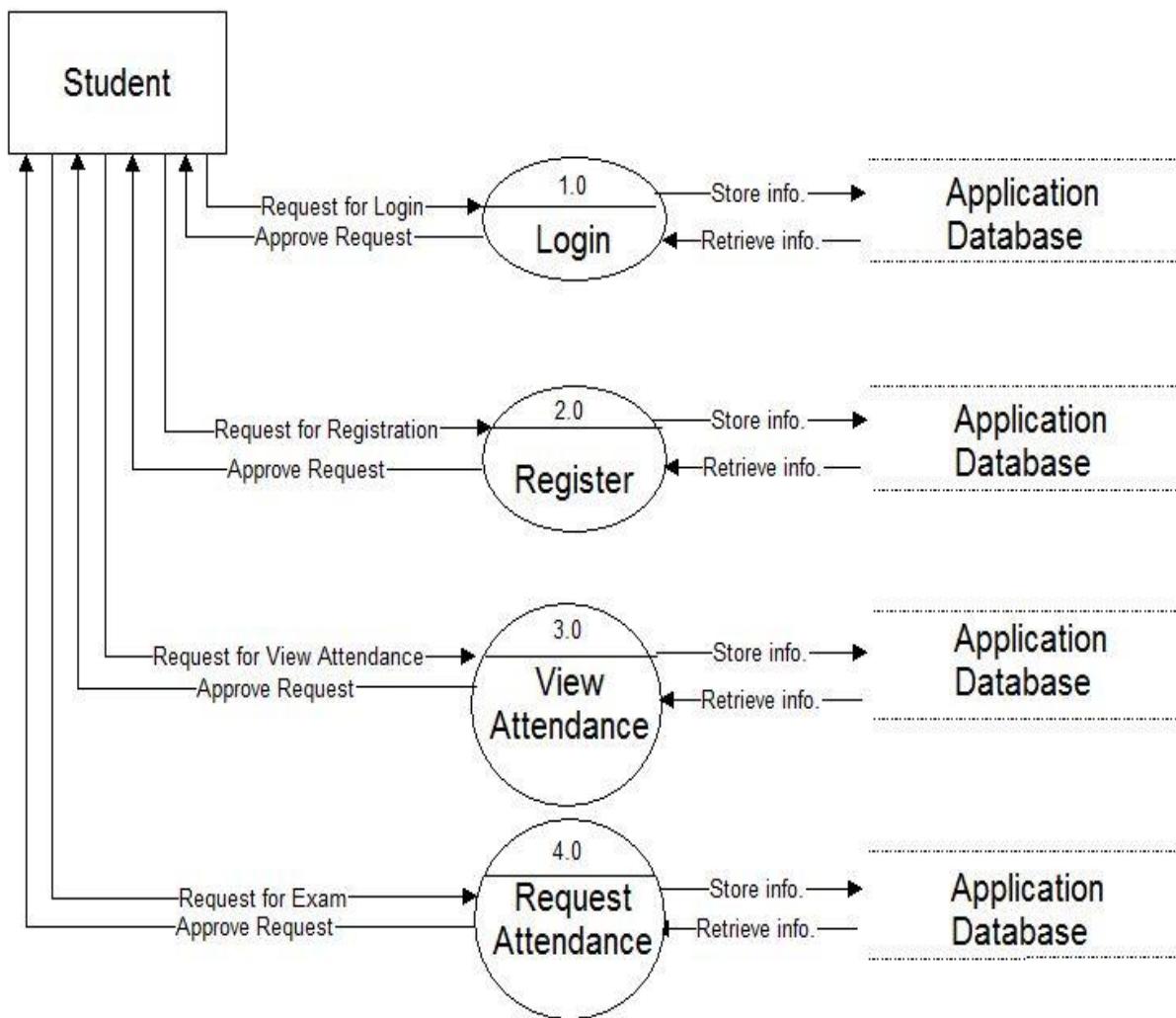


3.3 Data Flow Diagram:

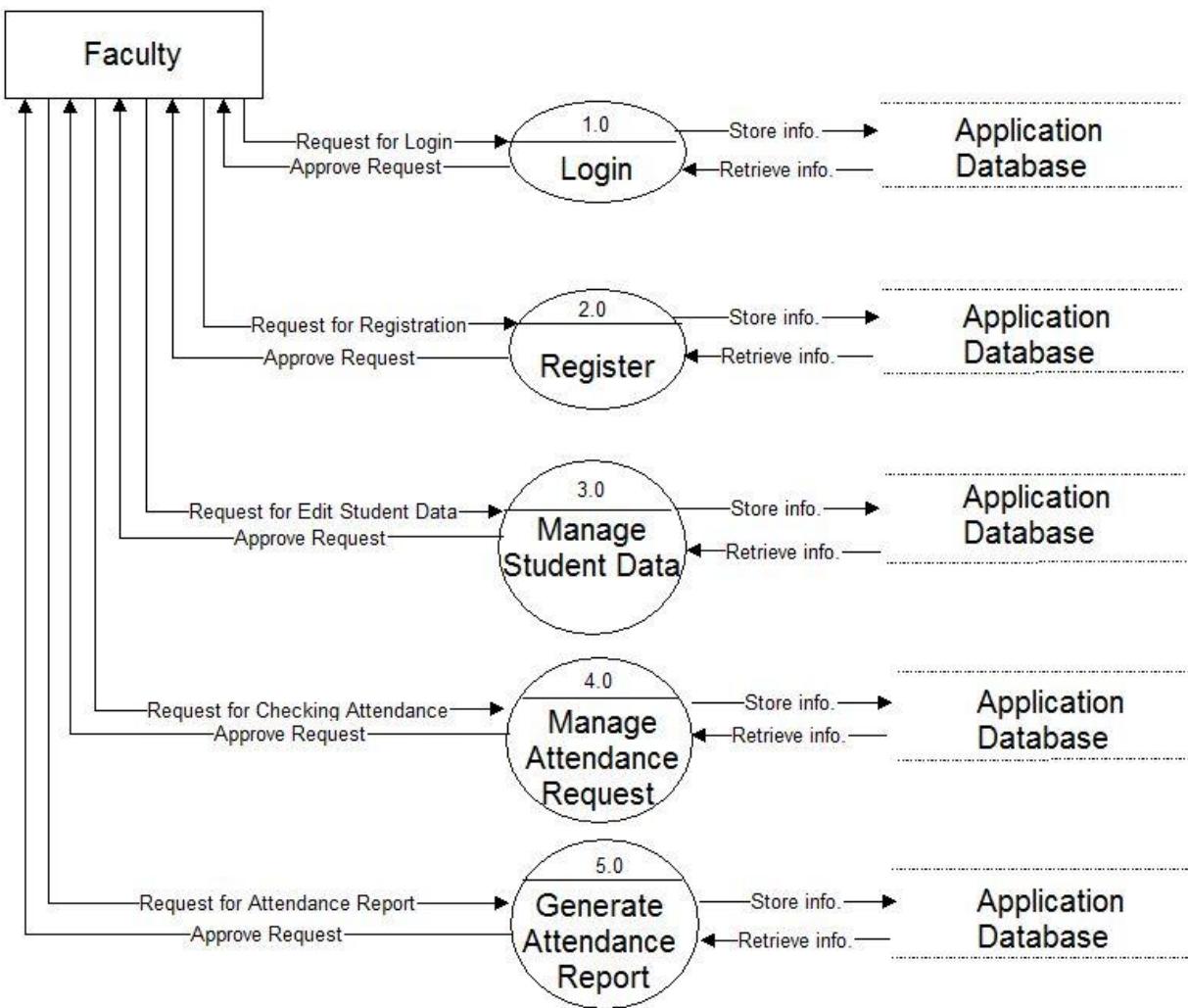
3.3.1 Level 0 DFD



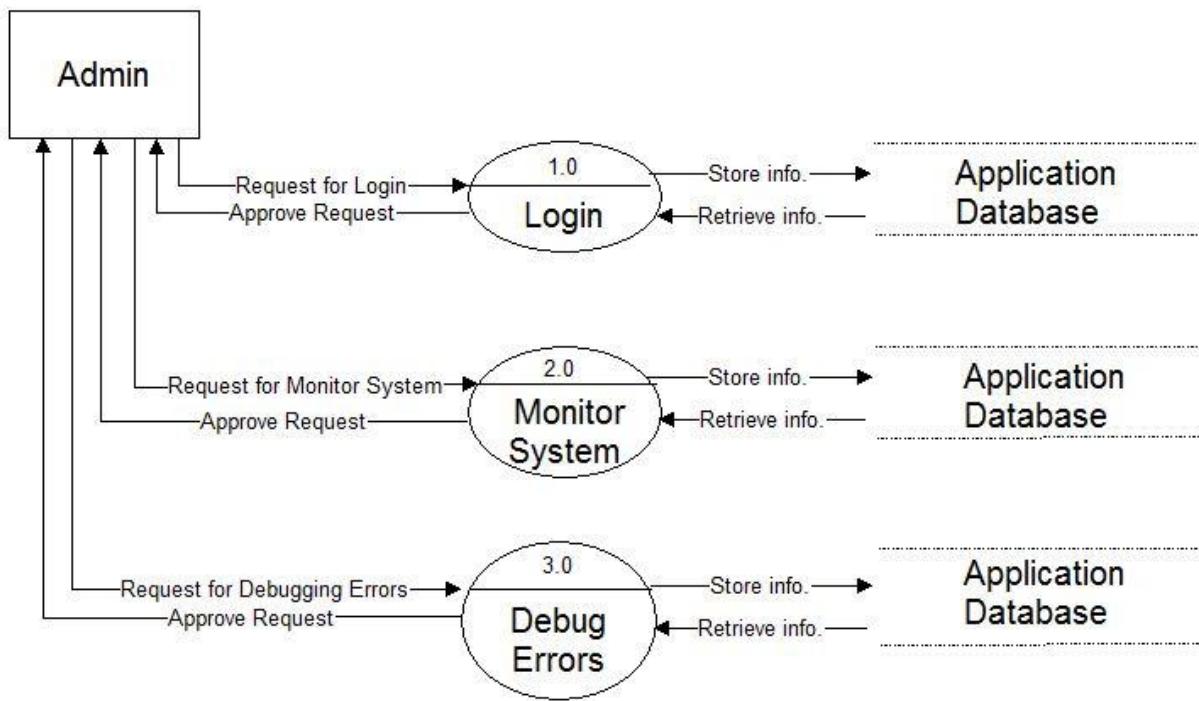
3.3.2 Level 1 DFD Student



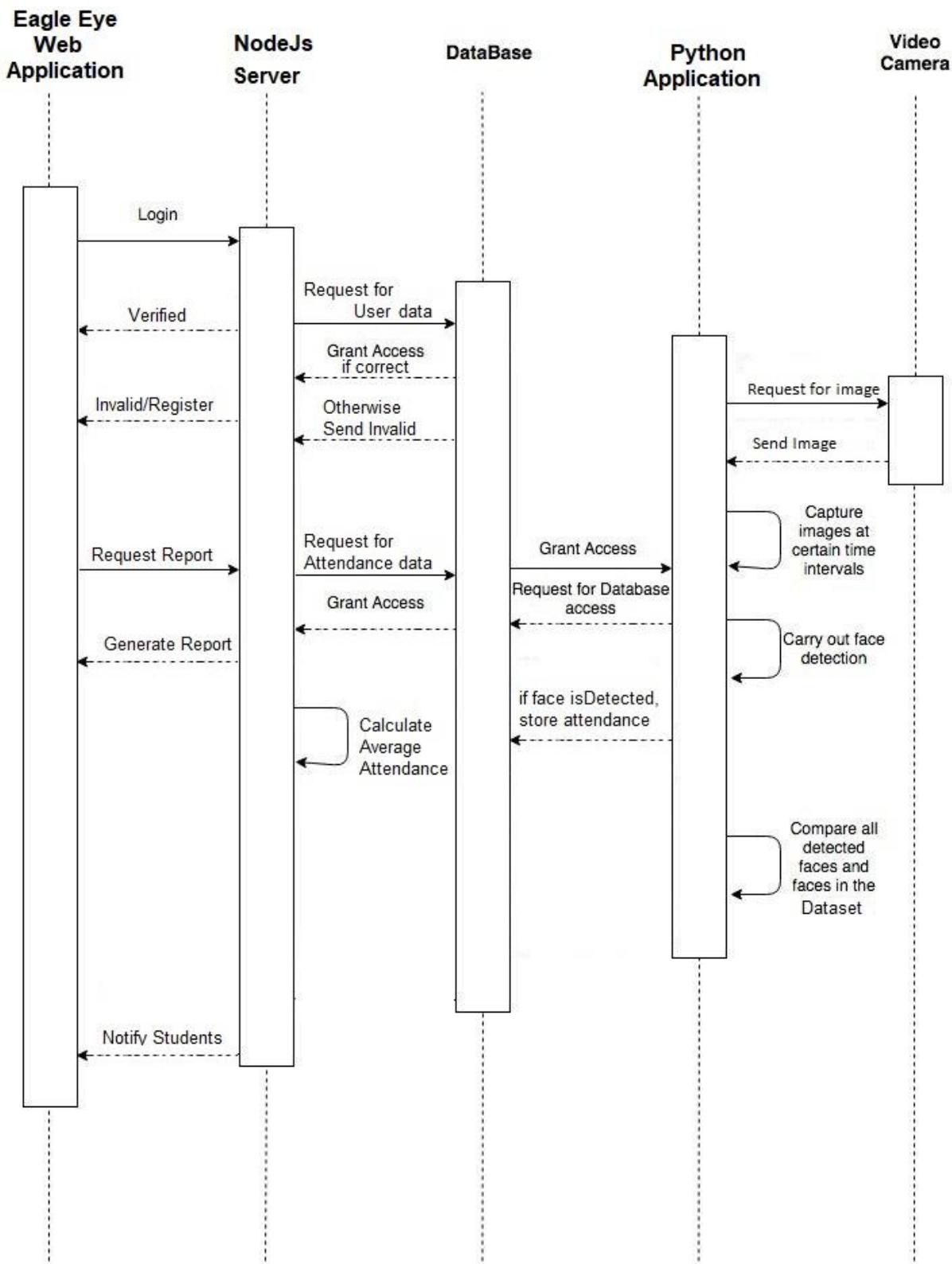
3.3.3 Level 1 DFD Faculty



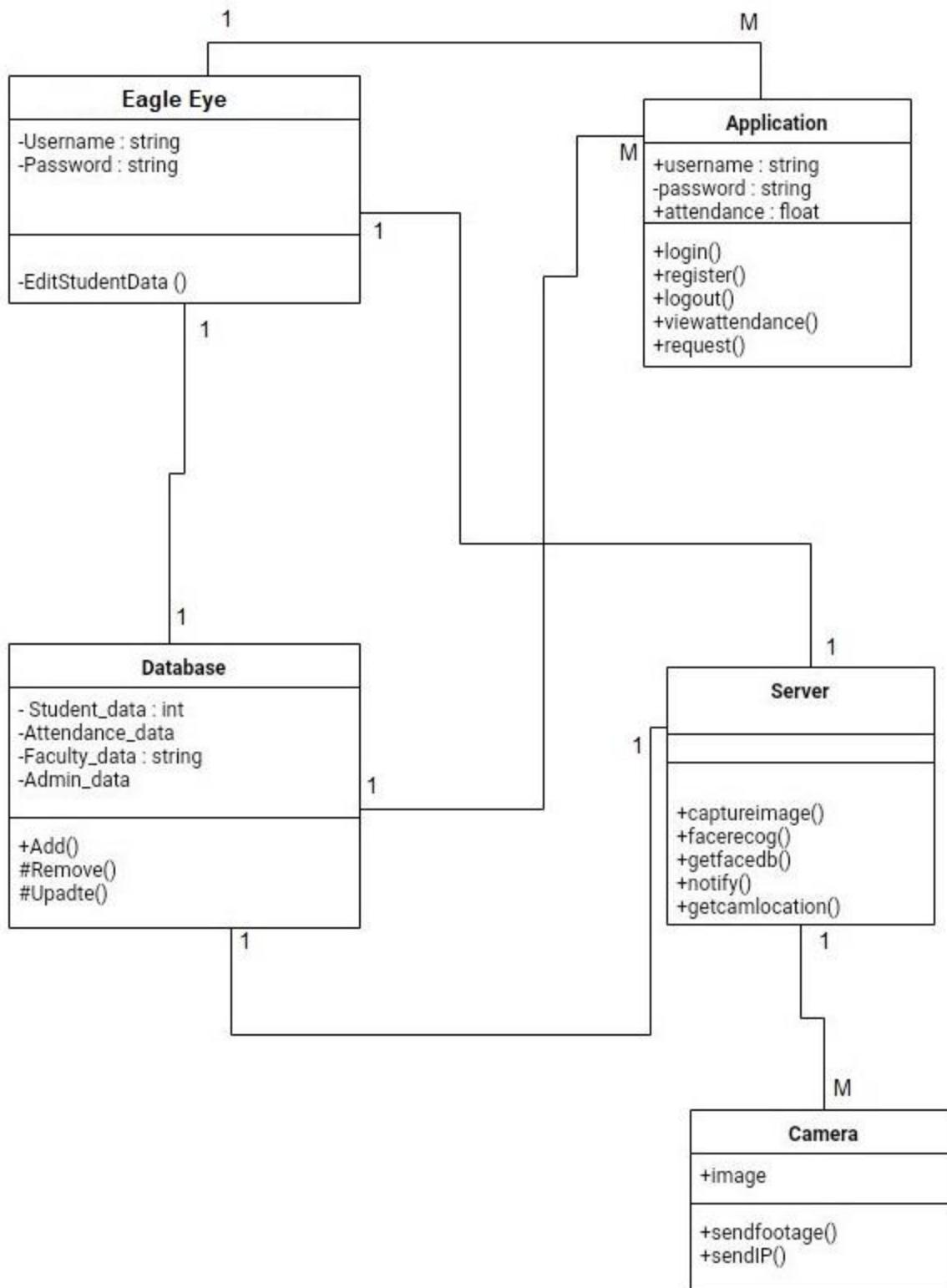
3.3.4 Level 1 DFD Admin



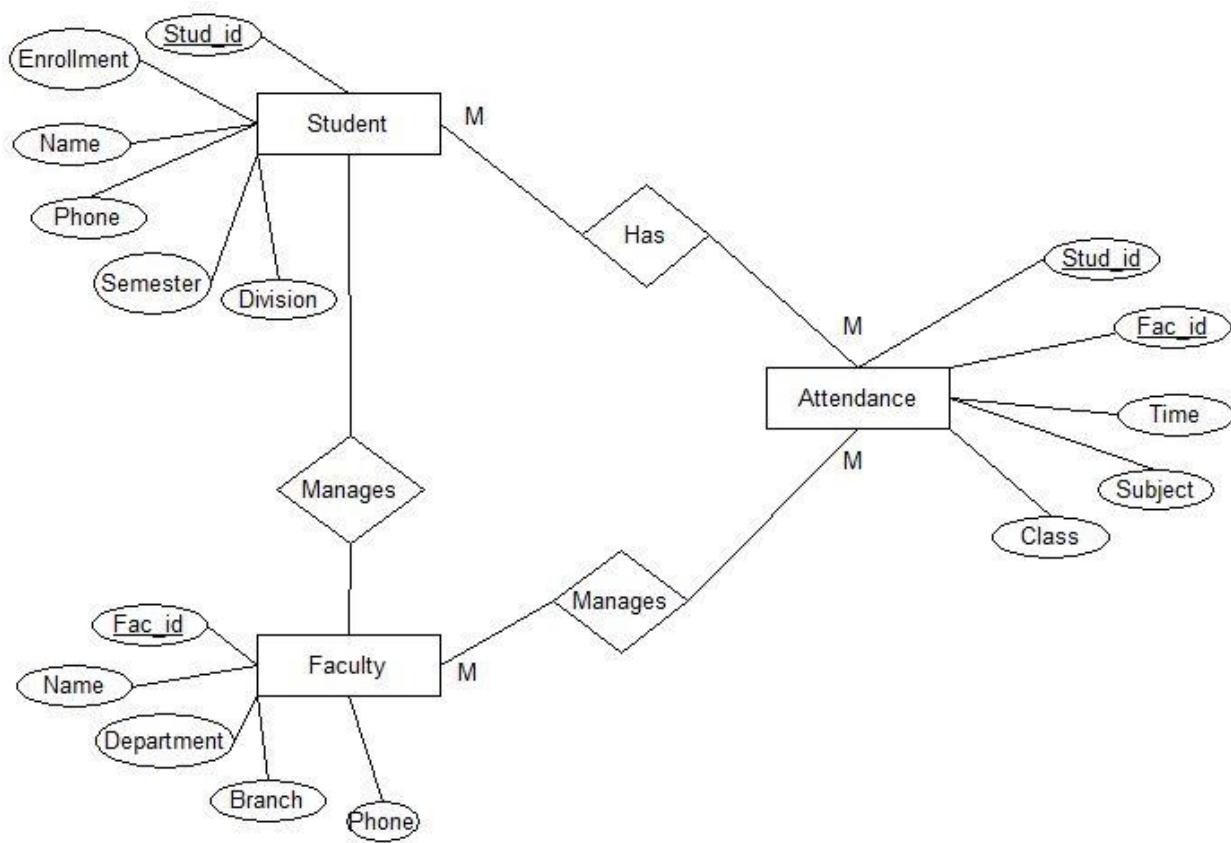
3.4 Sequence Diagram:



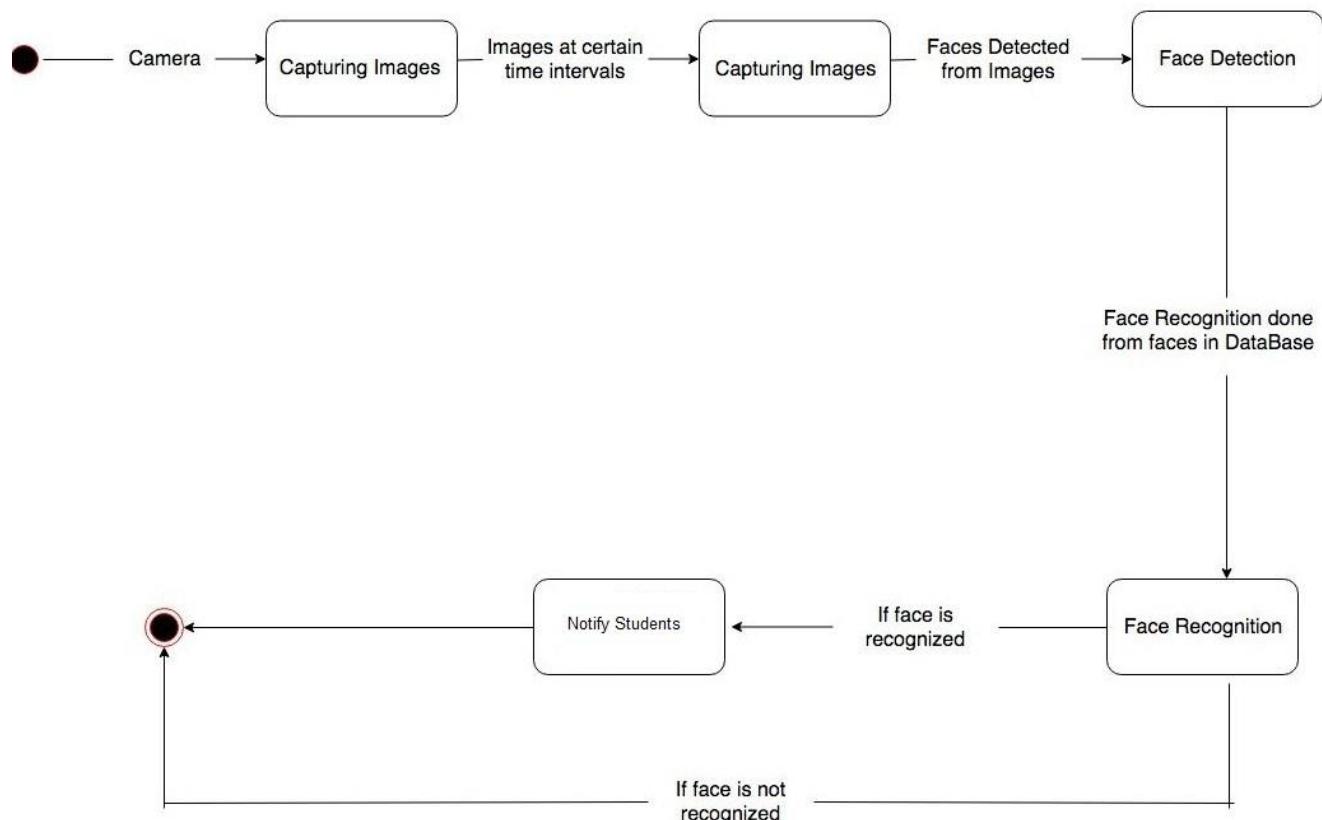
3.5 Class Diagram:



3.6 ER Diagram:



3.7 State Diagram:



Chapter: 4 Data Dictionary

4.1. Student

Field Name	Data Type	Constraint	Description	Example
<u>StudentID</u>	ObjectID	Primary Key	ID of student	10001510
Email	String	Not Null	Email of students	Raj123@gmail.com
Password	String	Not Null	Password of students	123456789
Enrollment	Number	Not Null	Enrollment of students	140170307092
Roll no	Number	Not Null	Enrollment of students	45
Name	String	Not Null	Name of students	Raj Shah
P_Email	String	Not Null	Email of students	Raj123@gmail.com
Contact	Number	Not Null	Contact of students	8866451278
Semester	Number	Not Null	Semester of students	6
Department	String	Not Null	Department of students	CE
Gender	String	Not Null	Gender of students	Male

4.2. Faculty

Field Name	Data Type	Constraint	Description	Example
<u>FacultyID</u>	ObjectID	Primary Key	ID of Faculty	10001410
Email	String	Not Null	Email of Faculty	Raj123@gmail.com
Password	String	Not Null	Password of Faculty	1234567890
Name	String	Not Null	Name of Faculty	Jay Patel
Contact	Number	Not Null	Contact of Faculty	8866451278
Department	String	Not Null	Semester of Faculty	CE

4.3. Attendance

Field Name	Data Type	Constraint	Description	Example
<u>AttendanceID</u>	ObjectID	Foreign Key	Id of Attendance	10001510
StudentID	ObjectID	Foreign Key	Id of Students	10001410
Name	String	Not Null	Name of students	Raj
Month	Number	Not Null	Attendance of month	13
All	Number	Not Null	Attendance of All year	300
Date	Date	Not Null	Date of attendance	2020-3-3

4.4. Logs

Field Name	Data Type	Constraint	Description	Example
<u>AttendanceID</u>	ObjectID	Foreign Key	Id of Attendance	10001510
StudentID	ObjectID	Foreign Key	Id of Students	10001410
Status	String	Not Null	Status of Attendance	Done
Name	String	Not Null	Name of students	Raj
Enrollment	Number	Not Null	Enrollment of students	140170307092
Roll no	Number	Not Null	Enrollment of students	45
Date	Date	Not Null	Date of attendance	2020-3-3
Lecture	Number	Not Null	Lecture number	4

4.5. Requests

Field Name	Data Type	Constraint	Description	Example
<u>AttendanceID</u>	ObjectID	Foreign Key	Id of Attendance	10001510
StudentID	ObjectID	Foreign Key	Id of Students	10001410
Status	String	Not Null	Status of Attendance	Done
Name	String	Not Null	Name of students	Raj
Enrollment	Number	Not Null	Enrollment of students	140170307092
Roll no	Number	Not Null	Enrollment of students	45
Date	Date	Not Null	Date of attendance	2020-3-3
Lecture	Number	Not Null	Lecture number	4

4.5. Lectures

Field Name	Data Type	Constraint	Description	Example
<u>LectureID</u>	ObjectID	Not Null	Id of Lecture	10001510
<u>Month</u>	Number	Not Null	Month number	1
<u>Value</u>	Number	Not Null	Total lectures in particular month	60

170323107026
160320107061
160320107063

Snapshots

Chapter: 5 Snapshot

EAGLE EYE



donald@gmail.com

.....

Submit

Fig 5.1 Student Login

EAGLE EYE

Enrollment

Rollno

Name

Mobile

Your Email

Parents Email

Password

Semester

Department

Gender

Male ▾

Register

Already Registered? [Login Here](#)

Fig 5.2 Registration

170323107026
160320107061
160320107063

Snapshots

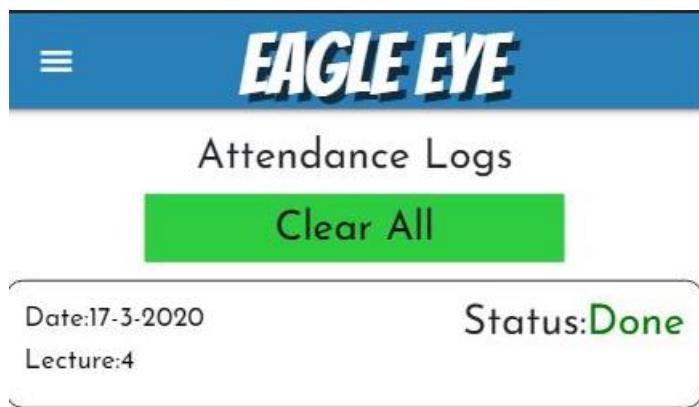


Fig 5.3 Attendance log

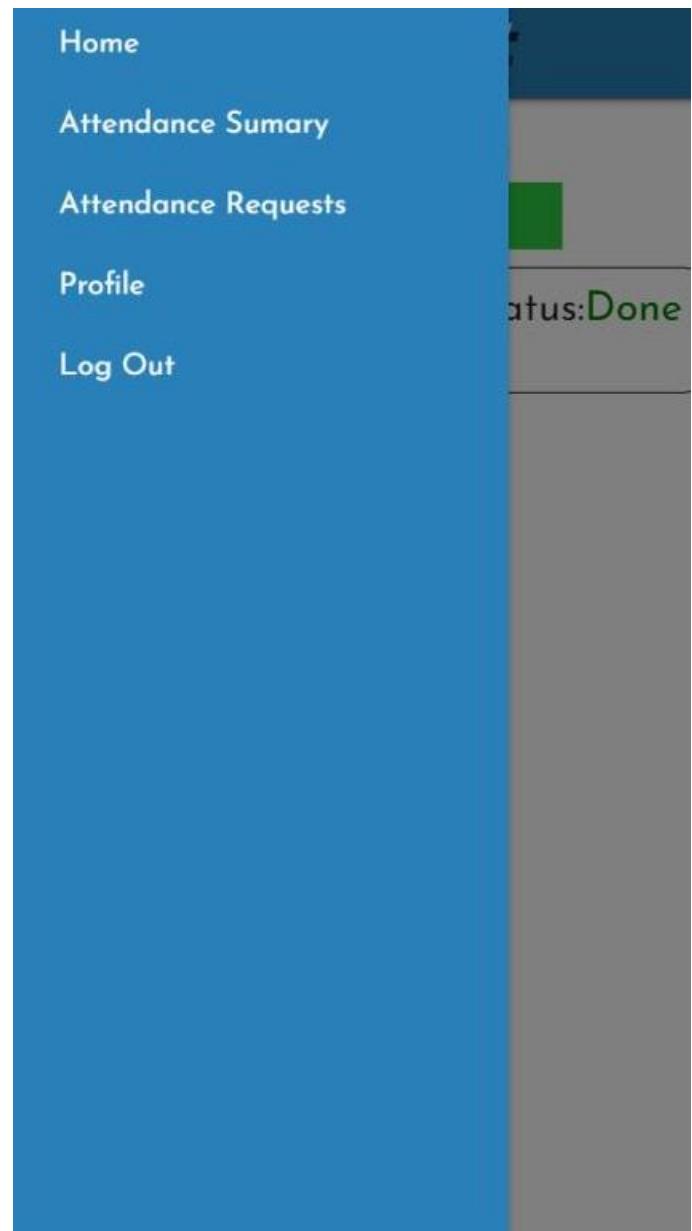


Fig 5.4 Web app Menu

EAGLE EYE

Student's Attendance
Minimum Required:70%

March

Show

#	Teacher	March	Out Of	Percentage	Lectures Required
1	vrushang	11	60	18.33	31
2	joel	2	60	3.33	40
3	Parth	0	60	0.00	42
4	donald	3	60	5.00	39

EAGLE EYE

Your Profile



Choose File No file chosen

Submit

Name : donald

Email : donald@gmail.com

Mobile : 1234567890

Enr No: 12345

Semester 6

Department CE

Fig 5.5 Student's Attendance

Fig 5.6 Student's Profile

170323107026
160320107061
160320107063

Snapshots



Your Request has sent

Attendance Requests

Date: dd-mm-yyyy

Lecture:

1

Send

Your Requests

Date:17-3-2020

Status:**Pending**

Lecture:2

Fig 5.7 Request page

170323107026
160320107061
160320107063

Snapshots

EAGLE EYE

Edit Profile

12345

6

CE

donald

1234567890

donald@gmail.com

Gender

Male

Update

This screenshot shows the 'Edit Profile' section of the EAGLE EYE app. It displays several input fields: a phone number (12345), a character (6), a mode indicator (CE), a name (donald), a mobile number (1234567890), an email (donald@gmail.com), and a gender dropdown set to 'Male'. A large green 'Update' button is at the bottom.

Fig 5.8 Edit Profile

EAGLE EYE

Change Password

Current password

New Password

Change Password

This screenshot shows the 'Change Password' section of the EAGLE EYE app. It has two input fields: 'Current password' and 'New Password', both currently empty. A large green 'Change Password' button is positioned below them.

Fig 5.9 Change Password

170323107026
160320107061
160320107063

Snapshots

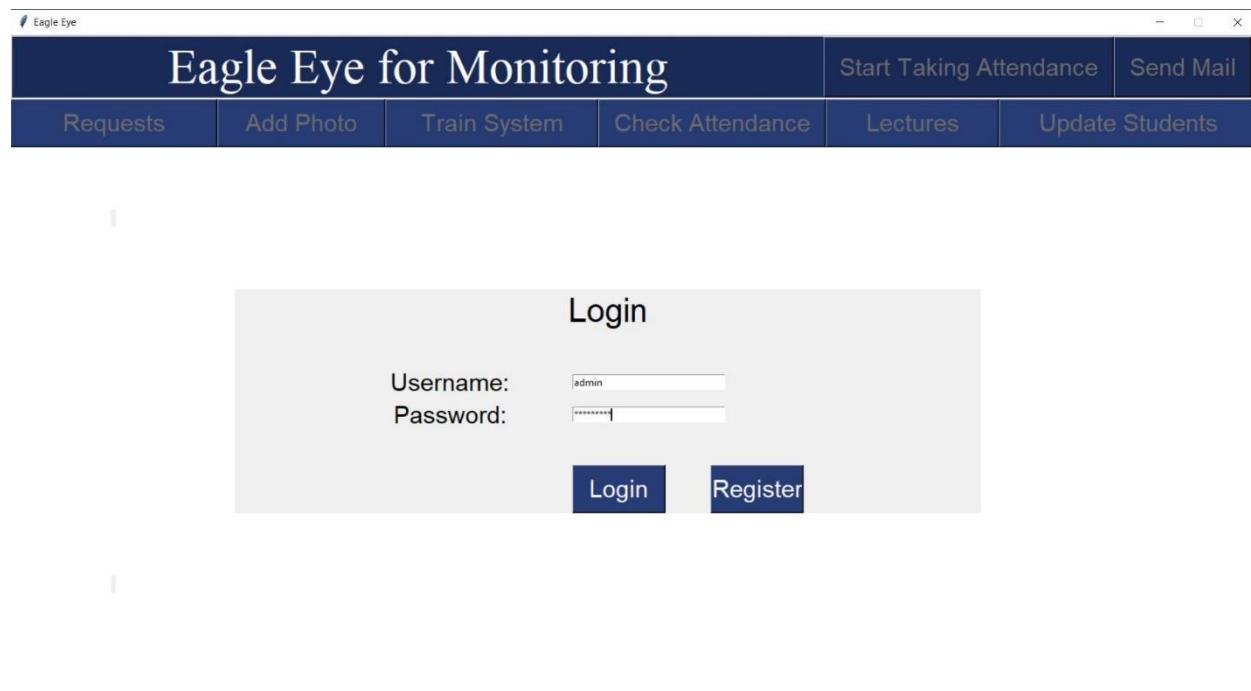


Fig 5.10 Faculty Login

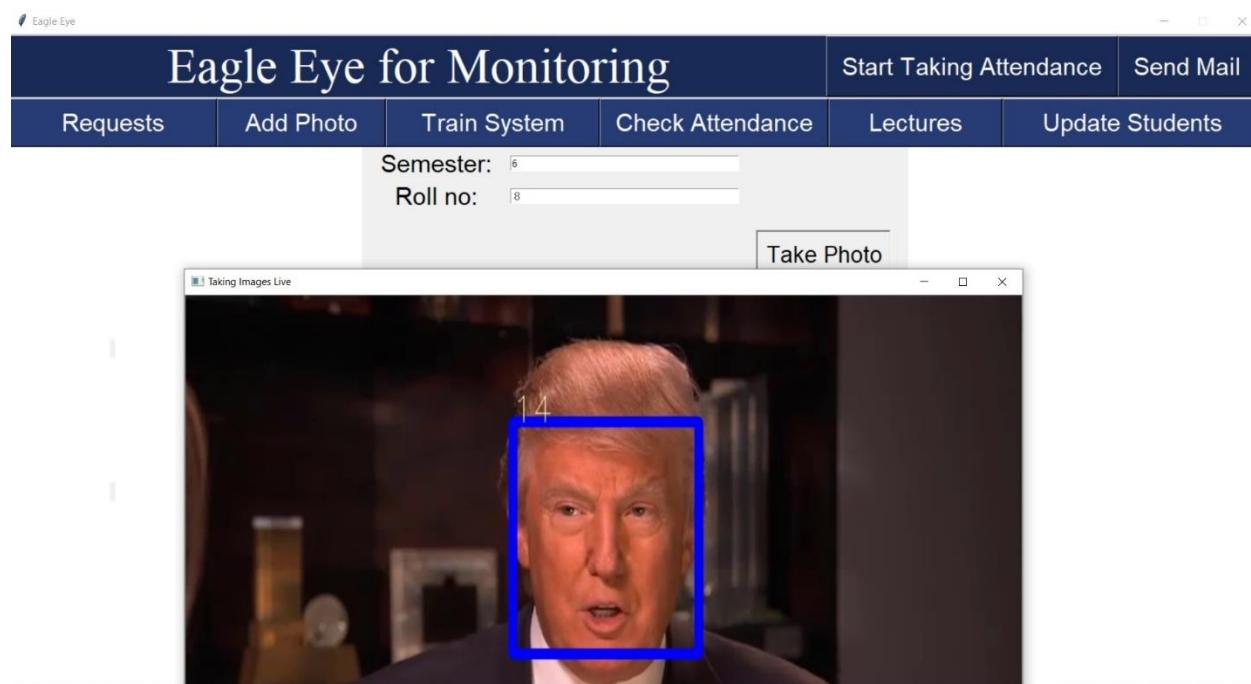


Fig 5.11 Taking Samples

170323107026
160320107061
160320107063

Snapshots

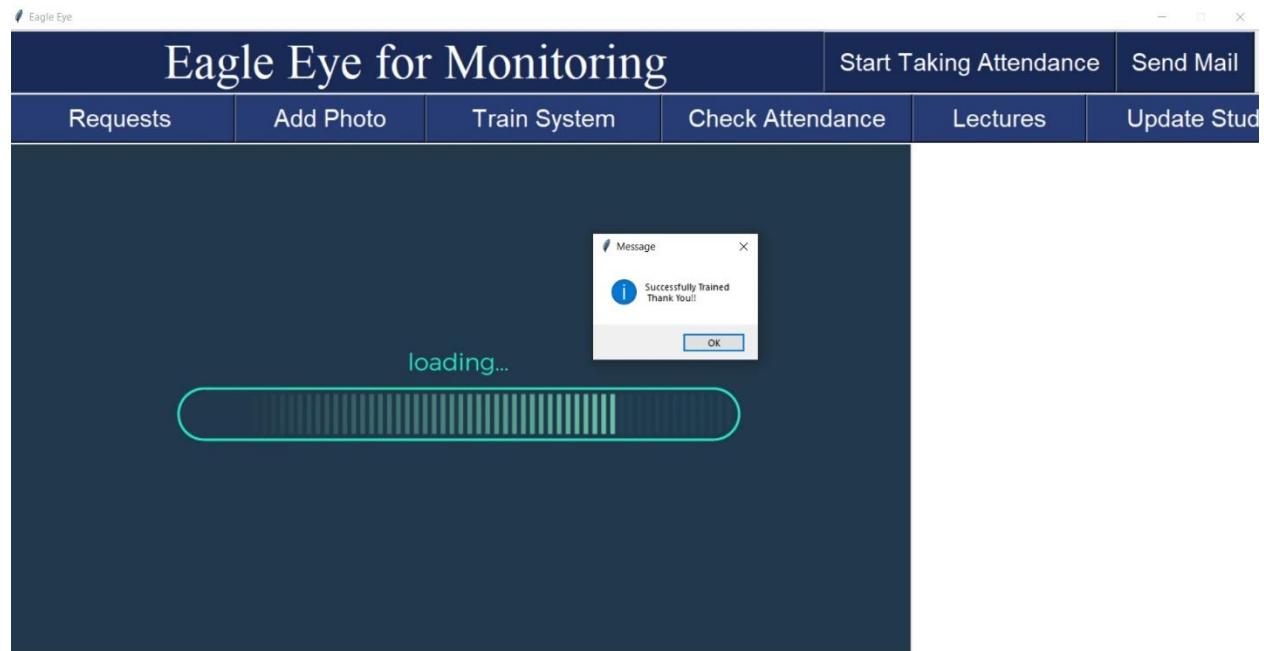


Fig 5.12 System Training



Fig 5.13 Start Taking Attendance

170323107026
160320107061
160320107063

Snapshots

The screenshot shows the 'Eagle Eye for Monitoring' application window. At the top, there are three numerical entries: 170323107026, 160320107061, and 160320107063. On the right side of the header, there are links for 'Snapshots', 'Start Taking Attendance', and 'Send Mail'. Below the header is a navigation bar with six items: 'Requests', 'Add Photo', 'Train System', 'Check Attendance', 'Lectures', and 'Update Students'. A sub-menu titled 'Your Requests' is open under the 'Check Attendance' item. Inside this menu, there is a message: '2020-02-28 vrushang vaishnav 8 7026 Lec: 3' followed by three buttons: 'ACCEPT', 'REJECT', and 'CHECK'.

Fig 5.14 Request Checking

The screenshot shows the 'Eagle Eye for Monitoring' application window. At the top, there are three numerical entries: 170323107026, 160320107061, and 160320107063. On the right side of the header, there are links for 'Start Taking Attendance' and 'Send Mail'. Below the header is a navigation bar with six items: 'Requests', 'Add Photo', 'Train System', 'Check Attendance', 'Lectures', and 'Update Students'. Under the 'Lectures' item, there is a dropdown menu set to 'March' with a 'Show' button next to it. Below the dropdown is a text input field containing the number '60' with an 'Update' button next to it.

Fig 5.15 Total lectures

170323107026
160320107061
160320107063

Snapshots

Eagle Eye

Eagle Eye for Monitoring

Start Taking Attendance | Send Mail

Requests | Add Photo | Train System | Check Attendance | Lectures | Update Students

Enroll No: <input type="text" value="7061"/>	Show
Department: CE	Name: joel
Contact No: 9911223300	Semester: 8
Roll No: 10	Email ID: joel@gmail.com
Gender: male	
<input type="button" value="Update"/>	

Fig 5.16 Update Student Details

Eagle Eye

Eagle Eye for Monitoring

Start Taking Attendance | Send Mail

Requests | Add Photo | Train System | Check Attendance | Lectures | Update Students

File Home Share View
Pin to Quick access Copy Paste Cut Copy path Move to Delete Rename New folder Properties Open Select all Select none Invert selection

Clipboard Organize New

← → ↑ ↓ project_new > attendance_files > sheets Search sheets

Name	Date modified	Type
2020-02-27.xls	27-02-2020 19:02	Microsoft Excel 97...
2020-02-28.xls	28-02-2020 12:49	Microsoft Excel 97...
2020-03-01.xls	01-03-2020 09:40	Microsoft Excel 97...
2020-03-17.xls	17-03-2020 22:27	Microsoft Excel 97...

File Home Insert Page Layout Formulas Data Review View
Font Alignment Number Styles Cells

Clipboard Editing

E8 A B C D E F G
1 Name Lec 1 Lec 2 Lec 3 Lec 4 Lec 5
2
3
4
5
6
7 B donald yes
8
9
10
11
12
13
14
15
16
17

Ready

Fig 5.17 Check Attendance

Chapter 6: Testing

Black Box Testing

Black box testing, which is also known as behavioral, opaque-box, closed-box, specification-based or eye-to-eye testing, is a Software Testing method that analyses the functionality of a software/application without knowing much about the internal structure/design of the item that is being tested and compares the input value with the output value. Majority of the applications are tested by black box method. We need to cover the majority of test cases so that most of the bugs will get discovered by a black-box method. Types of Black Box Testing

- **Functional testing** - This black box testing type is related to the functional requirements of a system; it is done by software testers.
- **Non-functional testing** - This type of black box testing is not related to testing of specific functionality, but non-functional requirements such as performance, scalability, usability.

6.1 Registration Module Testing

Sr.NO	Functional Test Cases	UI Testing/ Negative/ Positive
1	Verify that all the specified fields are present on registration page	UI Testing
2	Verify that Tab Functionality is working properly	Positive
3	Verify that Enter keys works as substitute of submit button	Positive
4	Verify that text fields have proper placeholders	UI Testing
5	Verify that system doesn't accept when entered existing Username	Negative
6	Verify that not filling mandatory fields and clicking submit button will not be accepted by the system	Negative
7	Check validation on email field and password by entering wrong format of data	Negative
8	Check validation on alphabetic fields by entering numbers and special characters	Negative
9	Verify that clicking submit button and entering all fields, submits data to server	Positive
10	Verify whether password is greater than 8 character	Negative

170323107026
160320107061
160320107063

Testing

11	Verify that clicking cancel button after entering all required fields, cancels the submit request and resets all fields	Positive
12	Verify that Date of birth should not allow the date greater than the current date(minimum age is 14 and maximum is 100)	Negative



Enrollment

Name:

Mobile:



Enrollment

Rollno:

Name:



Enrollment

Rollno:

Name:

Mobile:

Your Email:

Parents Email:

Password:



Enrollment

Rollno:

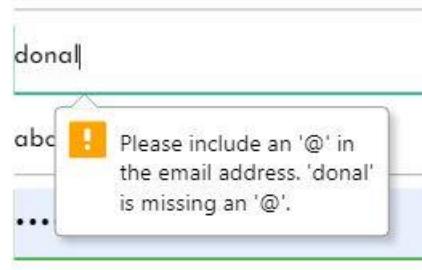
Name:

Mobile:

Your Email:

170323107026
160320107061
160320107063

Testing



6.1 Login page Testing

Sr.NO	Functional Test Cases	UI Testing/ Negative/ Positive
1	Verify that all the specified fields are present on registration page	UI Testing
2	Verify that Tab Functionality is working properly	Positive
3	Verify that Enter keys works as substitute of submit button	Positive
4	Verify that text fields have proper placeholders	UI Testing
5	Verify if the user will be able to enter with correct username and password	Positive
6	Verify if the user will not be able to enter with correct username and password	Negative

The image displays two side-by-side screenshots of a login interface for "EAGLE EYE".

Left Screenshot: The header says "EAGLE EYE". A pink bar at the top contains the text "Please create your account first". Below the bar is a group of four user icons. At the bottom are two input fields: the first contains "donald@gmail.com" and the second contains ".....". A green "Login" button is at the bottom.

Right Screenshot: The header says "EAGLE EYE". A pink bar at the top contains the text "Invalid username or password". Below the bar is a group of four user icons. At the bottom are two input fields: the first contains "donald@gmail.com" and the second contains ".....". A green "Login" button is at the bottom.

Chapter 7: Future Enhancement

- After taking feedback of students and faculties both, we will fix the bugs whichever might occur.
- In further updates to the system we also plan to implement a system where we will be modifying algorithm to achieve high enough accuracy even if the user is wearing cap/having beard/make-up etc.
- For that images taken at different angles will require the model to be trained for such images
- Automatically send message to parents of the students who have remained absent for entire day or bunked few lectures.

Chapter 8: Conclusion

This system reduces efforts of faculties. This system periodically generates reports/sheets. Also email will be sent to the student's parents. Faculty will be using our windows application in which he/she can enroll new face data of students, train the model, accept/reject the attendance requests of students, edit lecture/time table details, edit student's data and edit attendance reports(excel sheets). Students have to use our website in which they will get notification when their attendance is done. And if they don't get the notification after being in lecture then students can send request of attendance to the faculty. In this web application students can view their overall attendance and also number of lectures they attended on monthly basis.

Chapter 9: References

1. <https://www.slideshare.net/mobile/ShreyaDandavate/face-recognition-attendance-system-96913577>
2. <https://www.javatpoint.com/what-is-machine-learning>
3. <https://www.javatpoint.com/android-tutorial>

Chapter 10: Appendix

10.1 Periodic Progress Report (PPR)

[Print](#) [Back](#)

College : L. J. INSTITUTE OF ENGINEERING AND TECHNOLOGY, AHMEDABAD
StudentName : Vaishnav Vrushang Divyangbhai
EnrollmentNo : 170323107026 Department : Computer Engineering
MobileNo : 7046619360 Discipline : BE
Email : vrushangvaishnav98@gmail.com Semester : Semester 7

PPR Details

Periodic Progress Report : Forth PPR

Project : Automatic Attendance System

Status : Reviewed

1. What Progress you have made in the Project ?

I learned how to develop the code for the system. That is learning python and its various frameworks. Also learned android application development. Also ,started code briefly.

2. What challenge you have faced ?

The machine learning used too much time to learn the inputs given to neural networks. Also initially it was not detecting faces in lower resolution cameras.

3. What support you need ?

Faculty Guidance

4. Which literature you have referred ?

1. <https://www.slideshare.net/mobile/ShreyaDandavate/face-recognition-attendance-system-96913577> 2. <https://youtu.be/D5xqcGk6LEc> 3. <https://www.javatpoint.com/android-tutorial> 4. <https://www.javatpoint.com/what-is-machine-learning>

[Print](#) [Back](#)

College : L. J. INSTITUTE OF ENGINEERING AND TECHNOLOGY, AHMEDABAD
StudentName : Vaishnav Vrushang Divyangbhai
EnrollmentNo : 170323107026 Department : Computer Engineering
MobileNo : 7046619360 Discipline : BE
Email : vrushangvaishnav98@gmail.com Semester : Semester 7

PPR Details

Periodic Progress Report : Third PPR

Project : Automatic Attendance System

Status : Reviewed

1. What Progress you have made in the Project ?

We decided frameworks that will be used for system development. Some of them are OpenCV for face recognition, Tensorflow, Firebase etc.

2. What challenge you have faced ?

Identification of correct, efficient and fast frameworks for system development.

3. What support you need ?

Faculty Guidance

4. Which literature you have referred ?

1. <https://www.slideshare.net/mobile/ShreyaDandavate/face-recognition-attendance-system-96913577> 2. <https://youtu.be/D5xqcGk6LEc> 3. <https://www.javatpoint.com/android-tutorial> 4. <https://www.javatpoint.com/what-is-machine-learning>

[Print](#) [Back](#)

College : L. J. INSTITUTE OF ENGINEERING AND TECHNOLOGY, AHMEDABAD
StudentName : Vaishnav Vrushang Divyangbhai
EnrollmentNo : 170323107026 Department : Computer Engineering
MobileNo : 7046619360 Discipline : BE
Email : vrushangvaishnav98@gmail.com Semester : Semester 7

PPR Details

Periodic Progress Report : First PPR

Project : Automatic Attendance System

Status : Reviewed

1. What Progress you have made in the Project ?

Initially we had couple of topics for the title of project like Automatic Attendance System, Smart Screen Shot application and couple others. Finally we chose the Automatic Attendance System after discussing with my mentor.

2. What challenge you have faced ?

Identifying an efficient and fast face recognition algorithm was a huge challenge.

3. What support you need ?

Faculty guidance for face recognition code integration

4. Which literature you have referred ?

1. <https://www.slideshare.net/mobile/ShreyaDandavate/face-recognition-attendance-system-96913577> 2. <https://youtu.be/D5xqcGk6LEc> 3. <https://www.javatpoint.com/android-tutorial> 4. <https://www.javatpoint.com/what-is-machine-learning>

PRINT

BACK

College : L. J. INSTITUTE OF ENGINEERING AND TECHNOLOGY, AHMEDABAD
StudentName : Vaishnav Vrushang Divyangbhai
EnrollmentNo : 170323107026 Department : Computer Engineering
MobileNo : 7046619360 Discipline : BE
Email : vrushangvaishnav98@gmail.com Semester : Semester 8

PPR Details

Periodic Progress Report : Fourth PPR

Project : Automatic Attendance System

Status : Submitted

1. What progress you have made in the Project ?

First we decided the programming languages which is python for windows application, NodeJS for our web application. We started programming in these languages and made the whole system. We developed our server in NodeJS which communicates with our database and we made windows application to manage students attendance data used by faculty.

2. What challenge you have faced ?

Integrating NodeJS api in python and manipulating the results.

3. What support you need ?

Faculty Guidance

4. Which literature you have referred ?

<https://www.slideshare.net/NaomiKulkarni/face-recognition-attendance-system-85321885>

<https://www.w3schools.com/nodejs/>

https://www.tutorialspoint.com/python/python_gui_programming.htm

Comments

Comment by Internal Guide :

None

Comment by External Guide :

None

Comment by HOD :

None

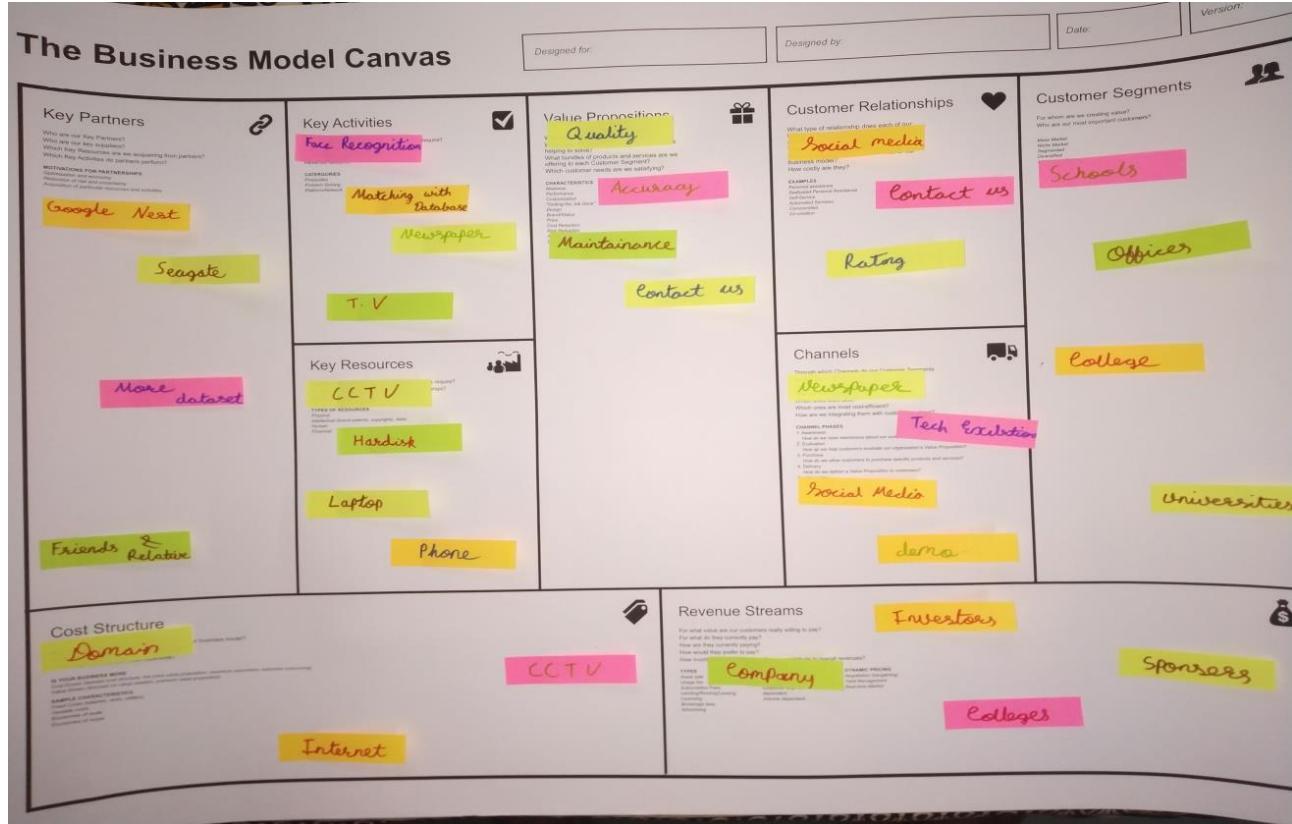
Comment by Principal :

None

Comment by University Admin :

None

10.2 Business Model Canvas



10.3 Patent Drafting Exercise (PDE)

PDE Details

PRINT

College	:	L. J. INSTITUTE OF ENGINEERING AND TECHNOLOGY, AHMEDABAD
Department	:	Computer Engineering
Discipline	:	BE
Semester	:	Semester 8
Project Name	:	Automatic Attendance System
Team ID	:	84541

Form 1 – APPLICATION FOR GRANT OF PATENT

Applicants :

Sr. No	Name	Nationality	Address	Mobile No.	Email Id
1	Vaishnav Vrushang Divyangbhai	Indian	Computer Engineering , L. J. INSTITUTE OF ENGINEERING AND TECHNOLOGY, AHMEDABAD , Gujarat Technological University.	7046619360	vrushangvaishnav98@gmail.com
2	Patel Joel Maheshkumar	Indian	Computer Engineering , L. J. INSTITUTE OF ENGINEERING AND TECHNOLOGY, AHMEDABAD , Gujarat Technological University.	9265358048	joelpatel20998@gmail.com
3	Patel Kirtan Shrikant	Indian	Computer Engineering , L. J. INSTITUTE OF ENGINEERING AND TECHNOLOGY, AHMEDABAD , Gujarat Technological University.	9714752115	kirtanpatel209@gmail.com

Inventors :

Sr. No	Name	Nationality	Address	Mobile No.	Email Id
1	Vaishnav Vrushang Divyangbhai	Indian	Computer Engineering , L. J. INSTITUTE OF ENGINEERING AND TECHNOLOGY, AHMEDABAD , Gujarat Technological University.	7046619360	vrushangvaishnav98@gmail.com
2	Patel Joel Maheshkumar	Indian	Computer Engineering , L. J. INSTITUTE OF ENGINEERING AND TECHNOLOGY, AHMEDABAD , Gujarat Technological University.	9265358048	joelpatel20998@gmail.com
3	Patel Kirtan Shrikant	Indian	Computer Engineering , L. J. INSTITUTE OF ENGINEERING AND TECHNOLOGY, AHMEDABAD , Gujarat Technological University.	9714752115	kirtanpatel209@gmail.com

3/19/2020

PDEDetails

Following are the attachments with the applications :

Form 2 - PROVISIONAL/COMPLETE SPECIFICATION

1 . Title of the project/invention :

Automatic Attendance System

2. Preamble to the description :

Provisional

3. Description

a) Field of Project / Invention / Application :

Schools,Colleges,Companies,Government Sectors etc.

b) Prior Art / Background of the Project / Invention :

Our project aims to take attendance of students/employees from cctv cameras by using face recognition algorithm.

c) Summary of the Project / Invention :

On detecting person,
-Attendance calculation
-Periodically generates Sheets/Report
-Email will be sent for remaining absent
-Detected and Undetected faces will be stored
-Stored faces will be deleted in a week to free up storage

d) Objects of Project / Invention :

- Our system is completely automatic
- No need of any person, system takes attendance automatically
- Report will be generated automatically
- Easy maintenance
- Requires less time

e) Drawings :

f) Description of Project / Invention : (full detail of project) :

Our system will scan the faces of students entering the class and by using face recognition algorithm it will recognize the students and their attendance will be done.

g) Examples :

h) Claims (Not required for Provisional Application) / Unique Features of Project

Face recognition,Report generation,Attendance Requests,Attendance Summary

4. Claims

5. Date and signature

6. Abstract of the project / invention :

pmms.gtu.ac.in/Student/StudentActivity/PDEDetails?enc=FcbZEY/mN2gRQgxJ5tSmEDUoZu1vkVJgbSI557uESTE=

2/3

3/19/2020

PDEDetails

Eagle eye is an Automatic Attendance System. Initially when lecture starts, our camera will scan the face of students entering the classes which will be fixed for some time slots. And when lecture ends our camera will scan the face of students exiting the classroom which is also fixed for some time slots. After this both data at the starting of the lecture and at the ending of the lecture are matched and attendance of the particular student is done. Students have to use our website in which they will get notification when their attendance is done. And if they don't get the notification after being in lecture then students can send request of attendance to the faculty. In this web application students can view their overall attendance and also number of lectures they attended on monthly basis. Faculty will be using our windows application in which he/she can enroll new face data of students, train the model, accept/reject the attendance requests of students, edit lecture/time table details, edit students data and edit attendance reports(excel sheets).

Form 3 – STATEMENT AND UNDERTAKING UNDER SECTION 8

Name of the applicant(s) : I/We, Vaishnav Vrushang Divyangbhai ,Patel Joel Maheshkumar ,Patel Kirtan Shrikant

Name,Address and Nationality of the joint applicant : Hereby declare :

- (i) that I/We have not made any application for the same/substantially the same victim invention outside India.
- (ii) that the rights in the application(s) has/have been assigned to

Name of the Country	Date of Application	Application Number	Status of the Application	Date of Publication	Date of Grant
N/A	N/A	N/A	N/A	N/A	N/A

(iii)That I/We undertake that upto the date of grant of the patent by the Controller, I/We would keep him informed in writing the details regarding corresponding applications for patents filed outside India within three months from the date of filing of such application.

Dated this 19 day of March 2020

To be signed by the applicant or his authorised registered patent agent : Signature.....

Name of the Natural Person who has signed : Vaishnav Vrushang Divyangbhai ,Patel Joel Maheshkumar ,Patel Kirtan Shrikant

To,
The Controller of Patents,
The Patent Office,
At Mumbai

© Gujarat Technological University. All Rights Reserved.