ATTENDANCE MANAGEMENT SYSTEM USING FACE RECOGNITION

DESIGN DOCUMENT

PROJECT ID#27

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CONTENT TABLE

1. INTRODUCTION

This project involves building an attendance system which utilizes facial recognition to mark the presence, time-in, and time-out of students. It covers areas such as facial detection, alignment, and recognition, along with the development of a web application to cater to various use cases of the system such as registration of new employees, addition of photos to the training data set, viewing attendance reports, etc. This project intends to serve as an efficient substitute for traditional manual attendance systems. It can be used in corporate offices and organizations where security is essential. Face detection and recognition is often referred to as, analyses characteristics of a person's face image input through a camera. It measures overall facial structure, distances between eyes, nose and mouth. The software first captures an image of all the authorized persons and stores the information into a database. The system then stores the image by mapping it into a face coordinate structure. Next time, whenever you register.

1.1 PURPOSE OF THE DOCUMENT

The purpose of this SRS document is to specify software requirements of the Attendance Management System Using Face Recognition. It is intended to be a complete specification of what functionality the Attendance Management System provides. This project aims to automate the traditional attendance system where the attendance is marked manually. It also enables an organization to maintain its records like in-time, out time, break time and attendance digitally. Digitization of the system would also help in better visualization of the data using graphs to display the no. of employees present today, total work hours of each employee and their break time. Its added features serve as an efficient upgrade and replacement over the traditional attendance system.

1.2 TARGET AUDIENCE AND OVERVIEW

This document is intended for developers, project managers, marketing stuff, users, testers and documentation writers of the system. Preference to read the document is in the sequence of table of contents only. Document is organized in a manner to understand the need and implementation details of the system.

1.3 ABBREVIATIONS

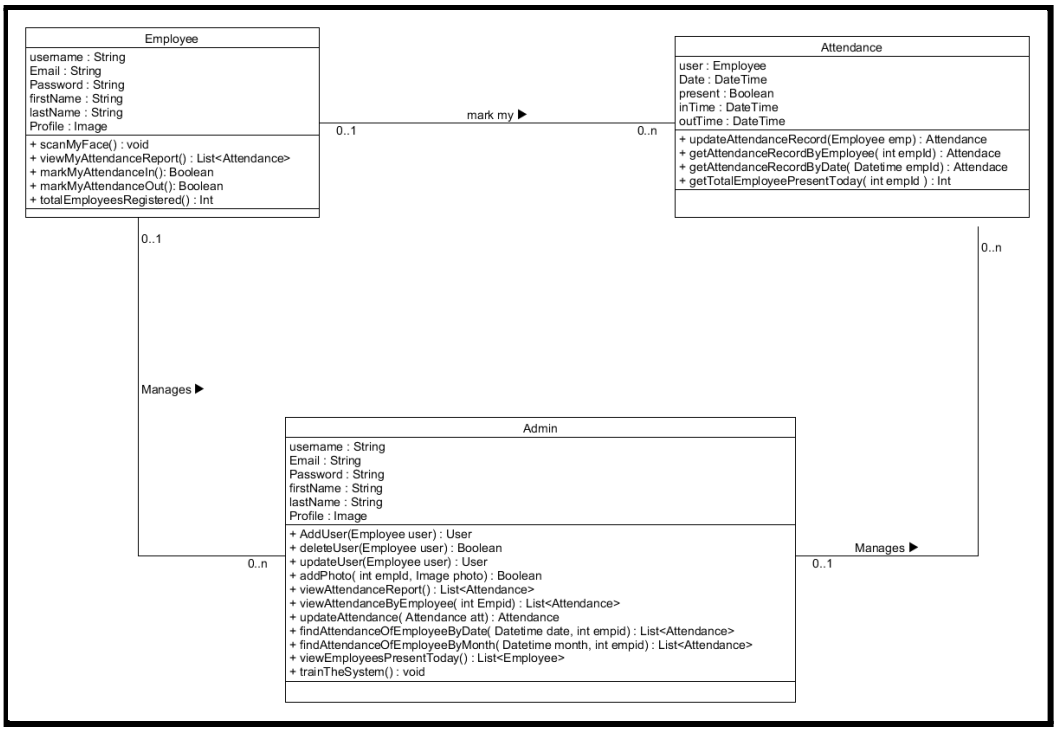
ER stand for Entity Relationship Diagram
SRS stand for Software Requirement Specification
ASFR stand for Attendance System Using Face Recognition

1.4 PRODUCT SCOPE

Facial recognition is becoming more prominent in our society. It has made major progress in the field of security. It is a very effective tool that can help low enforcers to recognize criminals and software companies are leveraging the technology to help users access the technology. This technology can be further developed to be used in other avenues such as ATM, accessing confidential files, or other sensitive materials.
It is a type of biometric software application that can identify a specific individual in a digital image by analyzing and comparing patterns. Facial recognition systems are commonly used for security purposes but are increasingly being used in a variety of other applications.
This project serves as a foundation for future projects based on facial detection and recognition. This project also covers web development and database management with a user-friendly UI. Using this system any corporate offices, school and organization can replace their traditional way of maintaining attendance of the employees and can also generate their availability(presence) report throughout the month.

2. OBJECT ORIENTED DESIGN

2.1 CLASS DIAGRAM



2.2 DATA DICTIONARY

Data Dictionary

User

No	Field name	Data type	Required	Unique	PK / FK	Ref. Table
1	UserId	int	true	true	PK	-
2	Email	string	true	true	-	-
3	Name	string	true	false	•	-
4	Password	string	true	false	-	-
5	CreatedAt	Datetime	true	false	-	-
6	UpdatedAt	Datetime	True	False	-	-

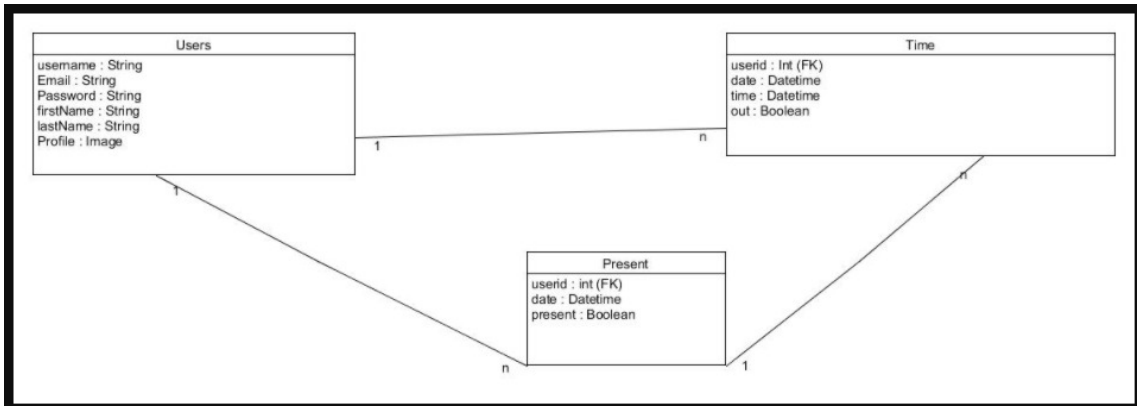
Present

No	Field name	Data type	Required	Unique	PK / FK	Ref. Table
1	Pld	int	true	true	PK	-
2	Date	Datetime	True	False	-	-
3	User	User	True	False	FK	Users
4	Present	Boolean	True	False	-	-

Time

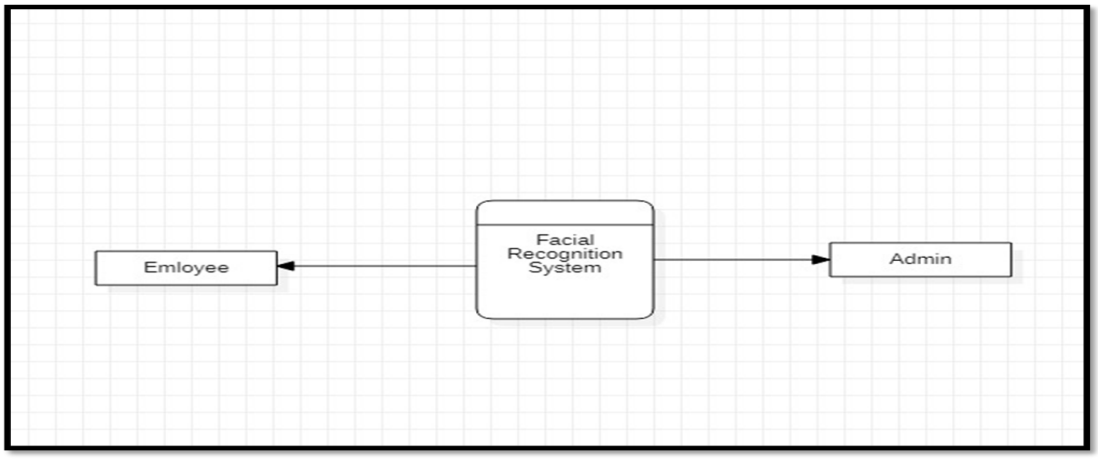
No	Field name	Data type	Required	Unique	PK / FK	Ref. Table
1	Tld	int	true	true	PK	-
2	Date	Datetime	true	True	-	-
3	User	Users	True	False	FK	Users
4	Time	Datetime	False	False	-	-
5	Out	Boolean	True	False	-	-

2.3 ER DIAGRAM



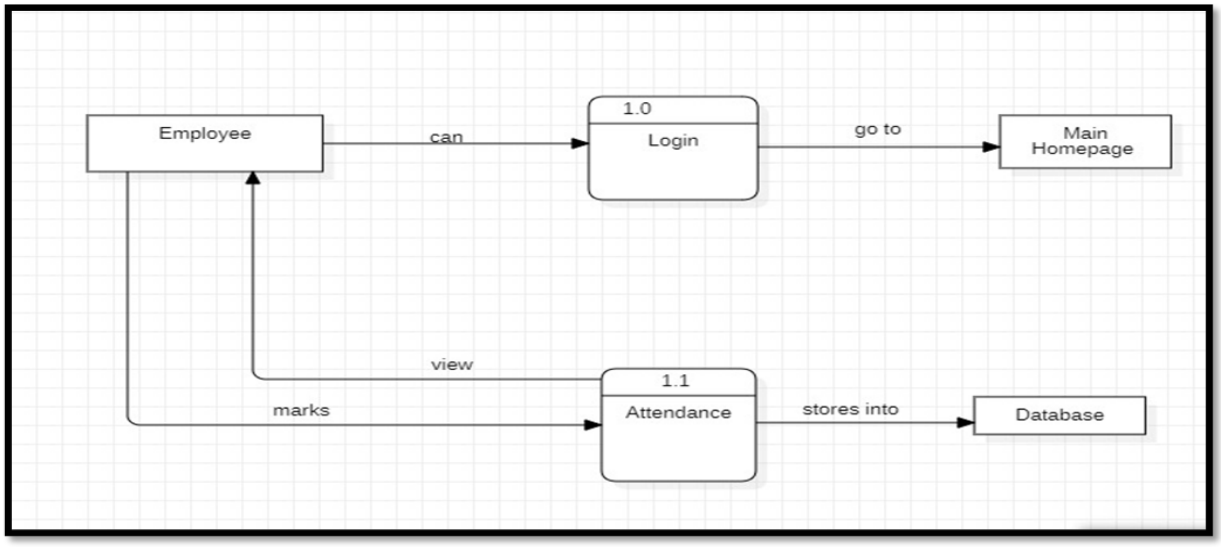
3. FUNCTIONAL MODELING

3.1 DFD LEVEL 0:



3.2 DFD LEVEL 1:

FOR EMPLOYEE:



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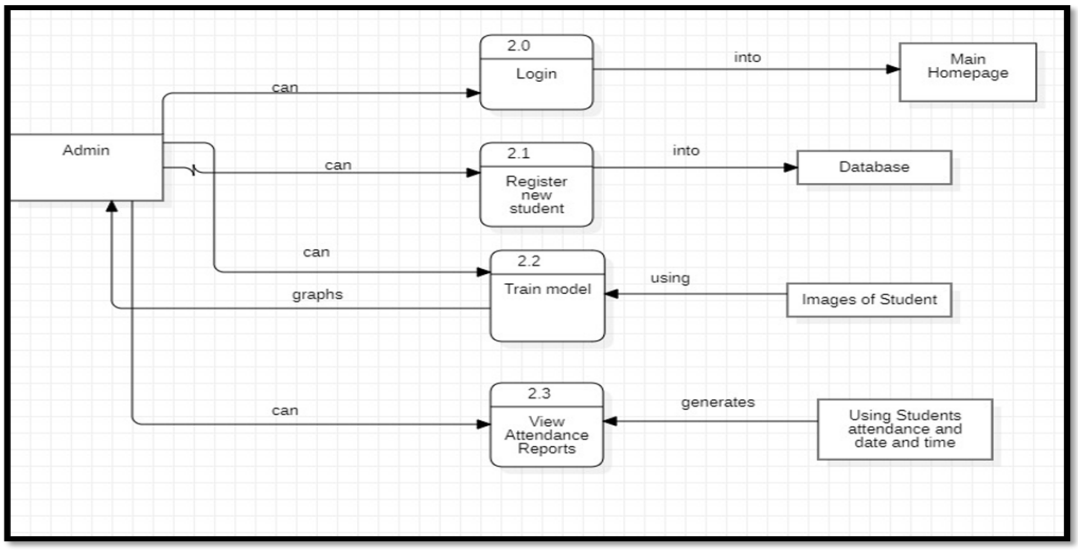
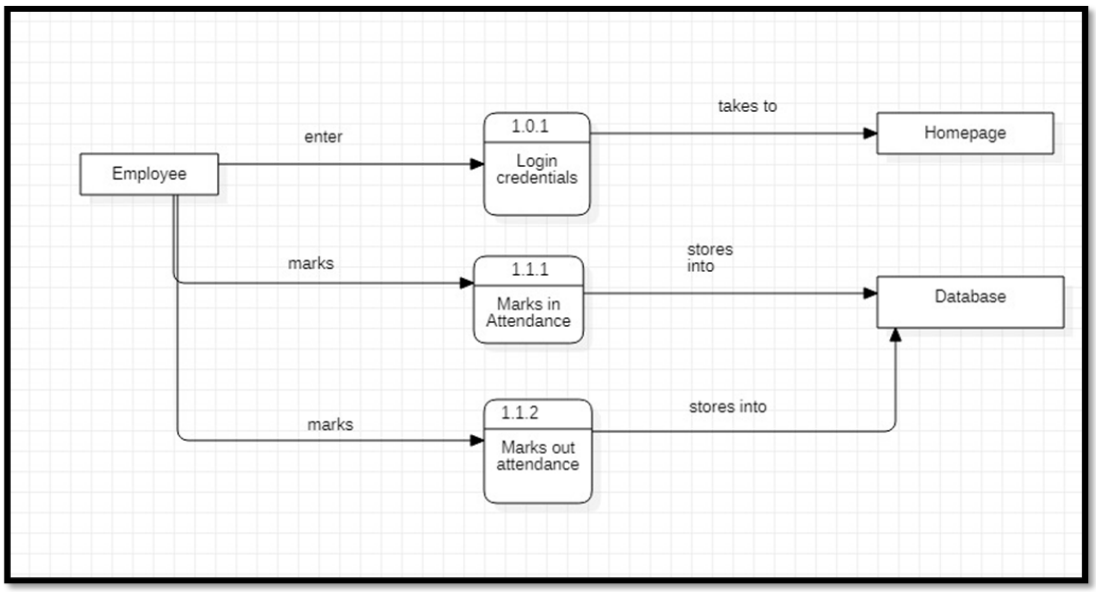
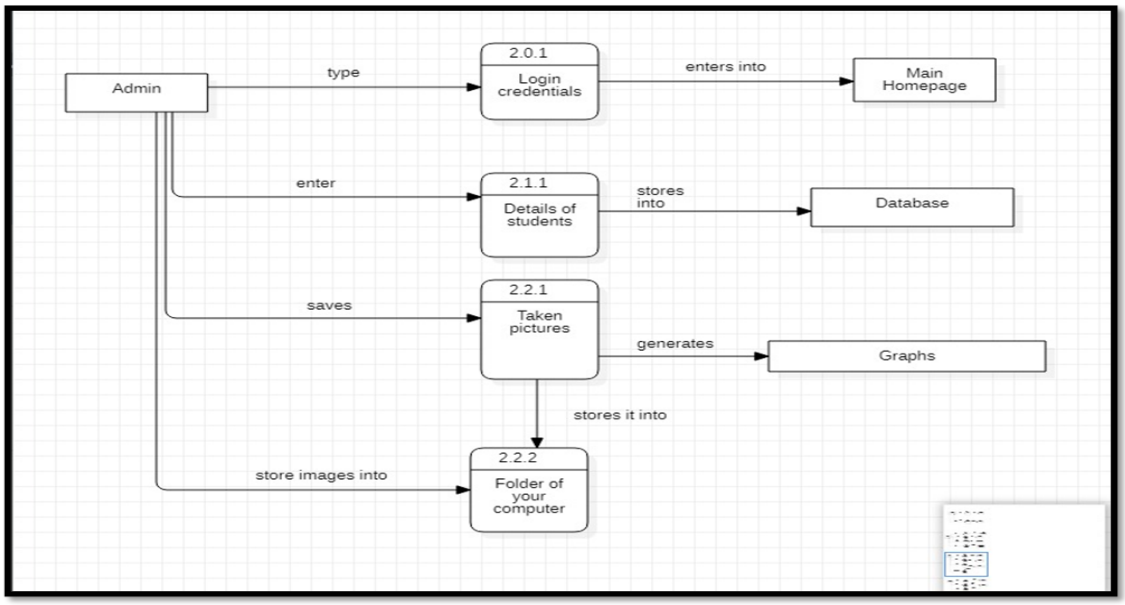


3.3 DFD LEVEL 2:

FOR EMPLOYEE:

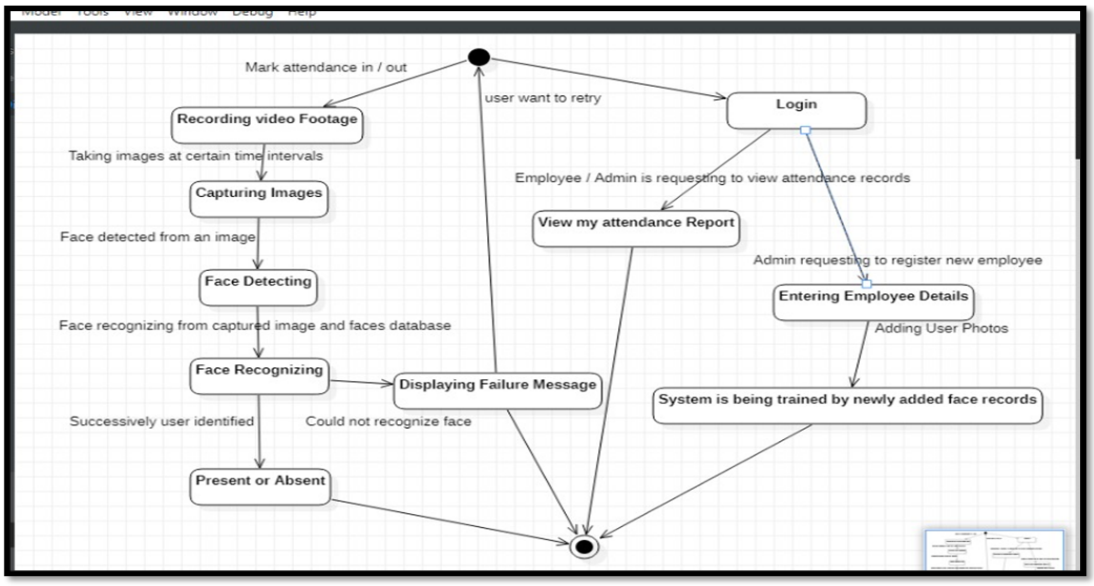


FOR ADMIN:



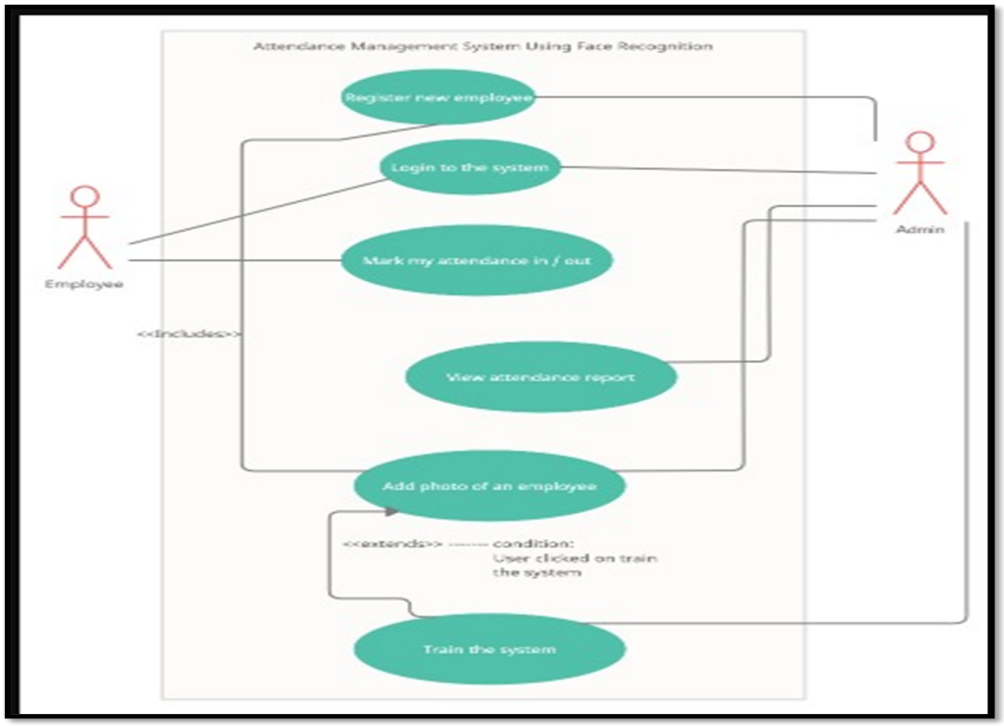
4. BEHAVIORAL MODELING

4.1 STATE TRANSITION DIAGRAM:



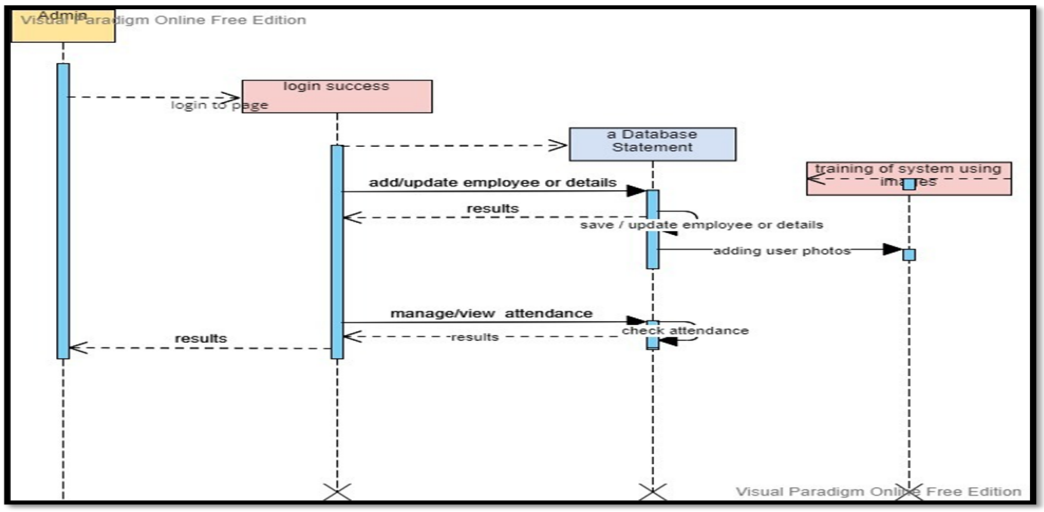
5. INTERACTION MODELING

5.1 USE CASE DIAGRAM

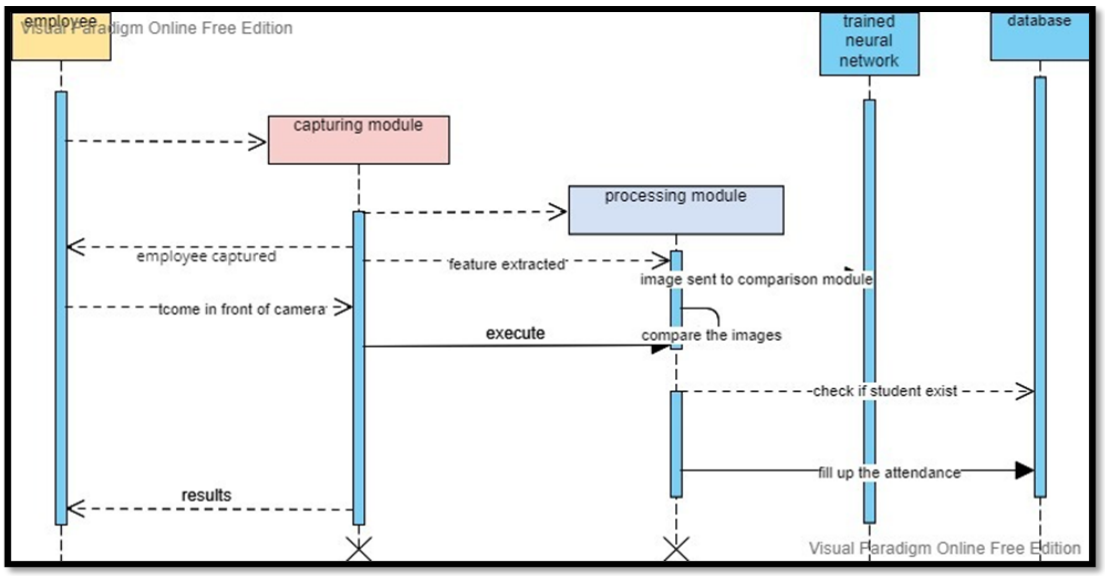


5.2 SEQUENCE DIAGRAM

5.2.1 LOGIN PROCESS

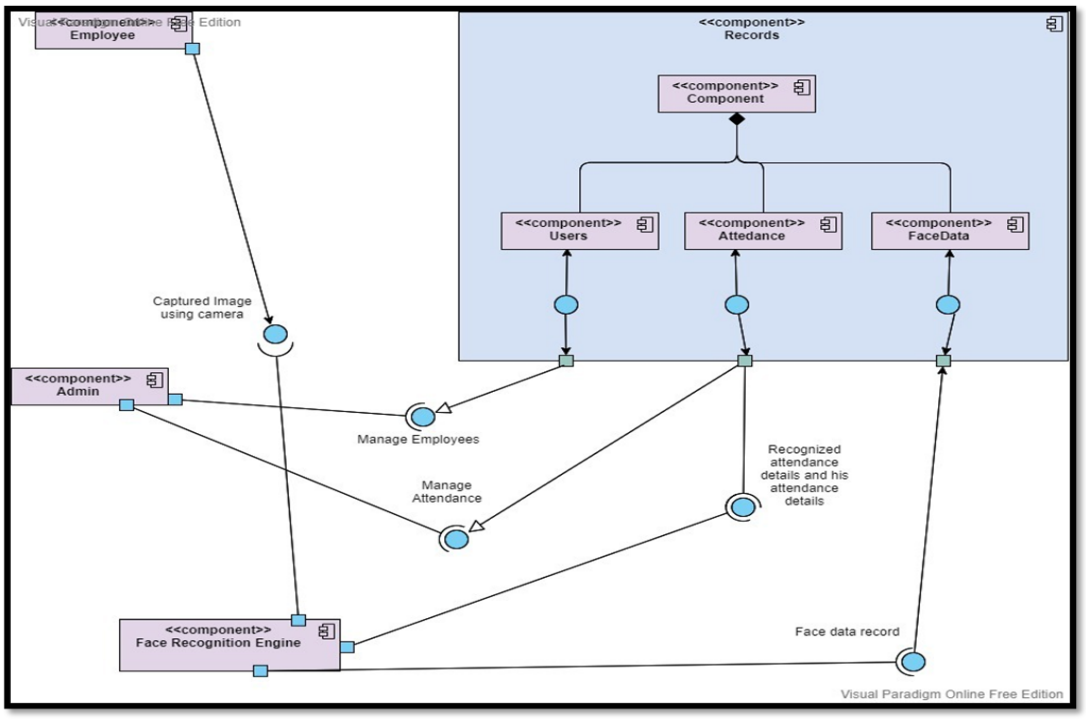


5.2.2 USER REGISTER PROCESS

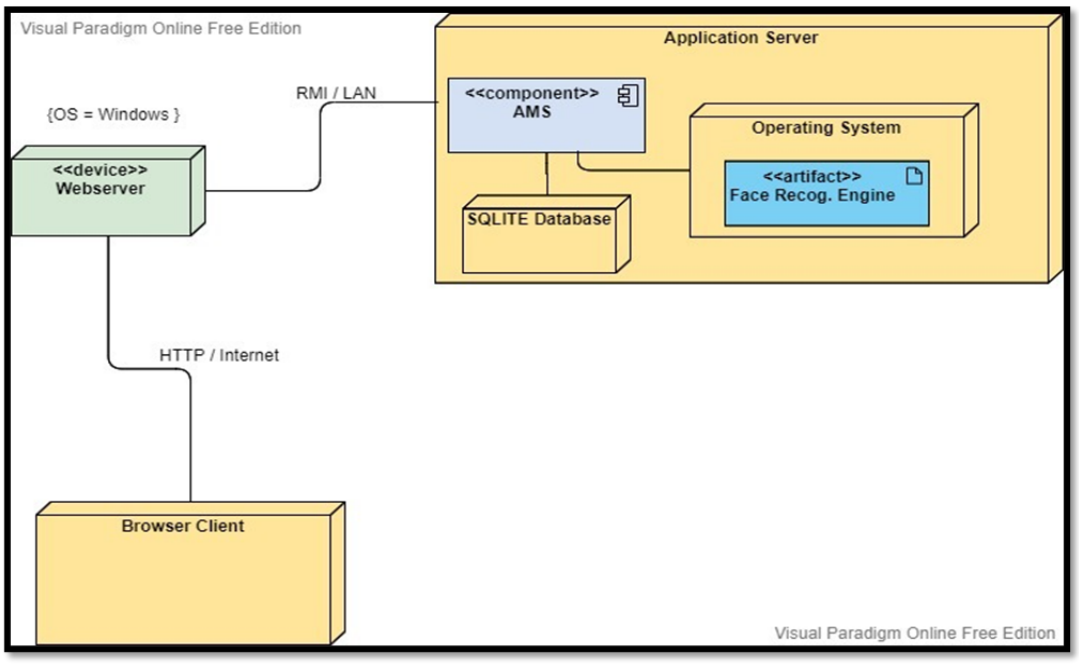


6. DEPLOYMENT VIEW

6.1 COMPONENT DEPLOYMENT DIAGRAM



6.2 DEPLOYMENT DIAGRAM



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- For debugging:https://stackoverflow.com/