

Mohammad Ali Jinnah University

Chartered by Government of Sindh - Recognized by HEC

**Semester Project**

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**Subject:** Software Engineering Lab (CS 3111)

**Section:** CM

**Teacher:** Sir Abdul basit

**Date:** Sunday, January 10, 2021

**Project description:**

**Project title:** Face Recognition & Attendance System (FAJ).

**Details:** It is a Smart Computer Vision Application with various functionalities. I have tried to put as many Machine Learning tools as possible into one single Application for greater productivity**.**

**KEY FEATURES**

1. Auto Attendance system Using Face Recognition techniques.
2. Face Trainer
3. Motion Detection
4. OCR (Optical Character Reader)
5. Gesture Control(Controlling Mouse Pointer Using Finger or Red Colored Object)
6. Rectangle Shape Detection
7. Trained Faces Image Gallery View
8. Eye Detection
9. Persistent Storage for Trained Faces Image Using Database.

**TECHNOLOGY USED**

1. Core Java
2. JavaCV (wrapper of Opencv)
3. JavaFX
4. MySQL
5. Tesseract OCR Framework

**Explanation:**

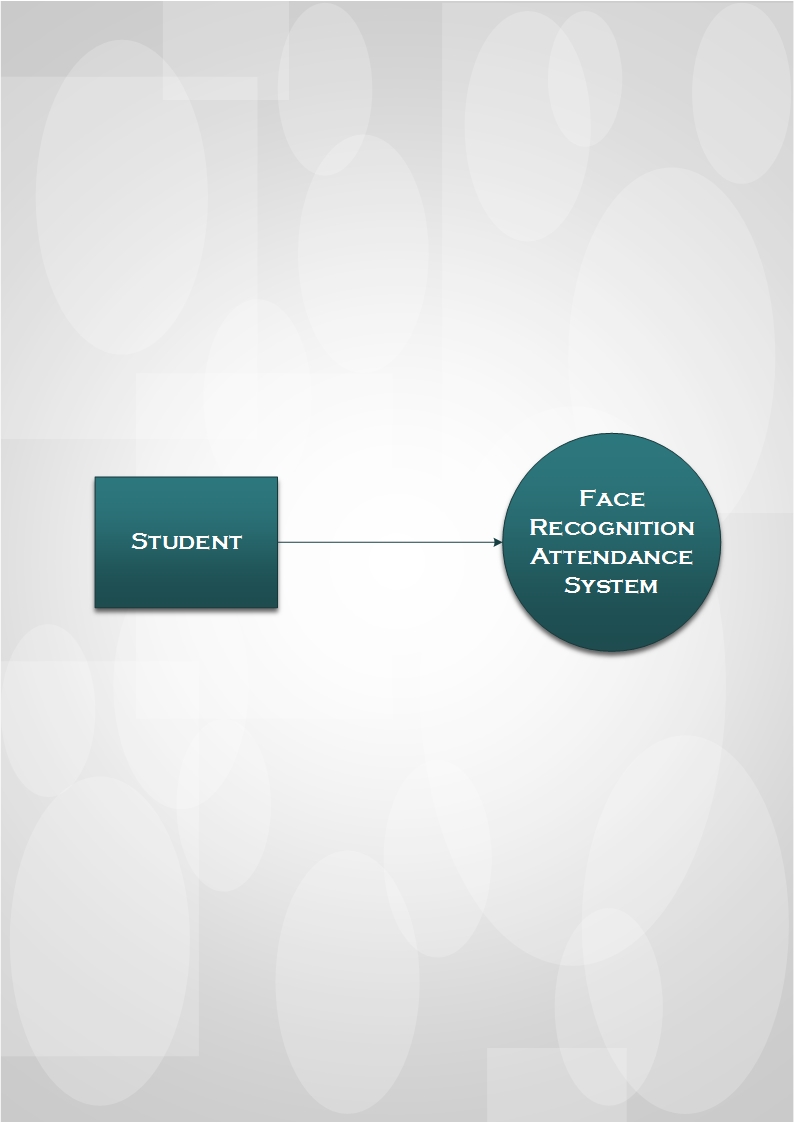
The technology aims in imparting a tremendous knowledge oriented technical innovations these days. Deep Learning is one among the interesting domain that enables the machine to train itself by providing some datasets as input and provides an appropriate output during testing by applying different learning algorithms. Nowadays Attendance is considered as an important factor for both the student as well as the teacher of an educational organization. With the advancement of the deep learning technology the machine automatically detects the attendance performance of the students and maintains a record of those collected data. In general, the attendance system of the student can be maintained in two different forms namely,

* Manual Attendance System (MAS)
* Automated Attendance System (AAS).

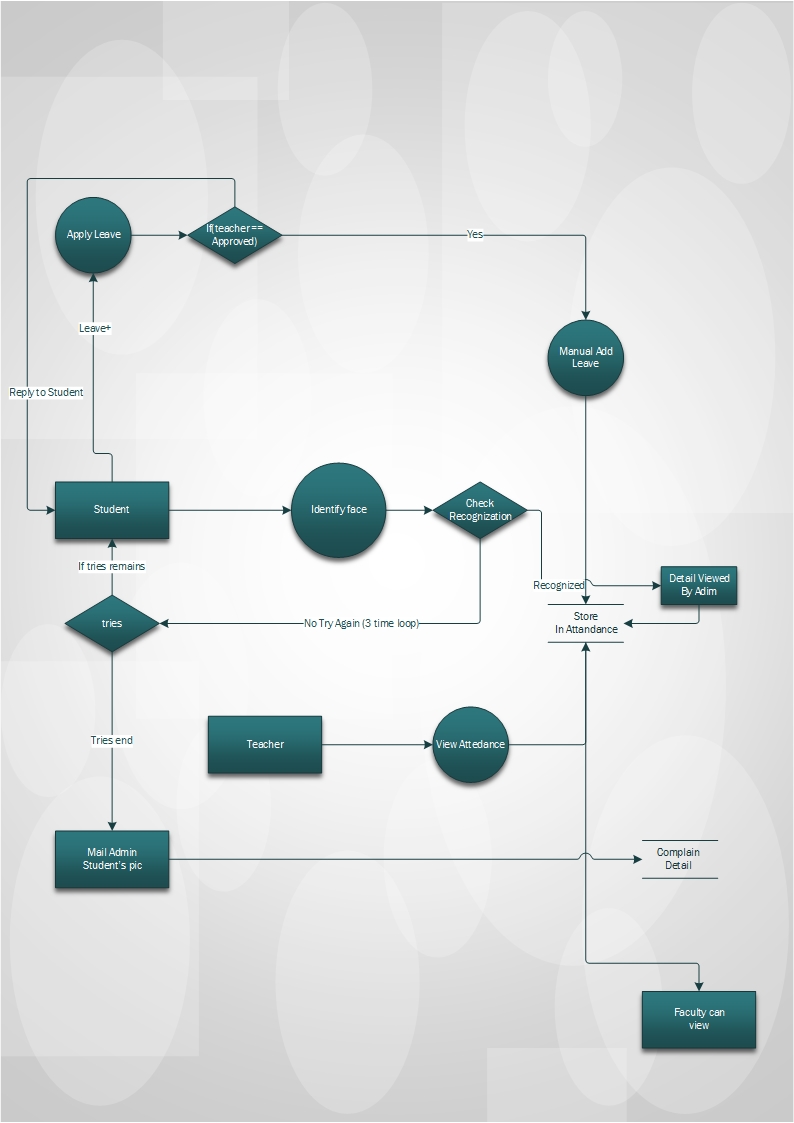
Manual Student Attendance Management system is a process where a teacher concerned with the particular subject need to call the students name and mark the attendance manually. Manual attendance may be considered as a time-consuming process or sometimes it happens for the teacher to miss someone or students may answer multiple times on the absence of their friends. So, the problem arises when we think about the traditional process of taking attendance in the classroom. To solve all these issues we go with Face recognition-based attendance system (FARA)

**Project must include following UML Diagrams:**

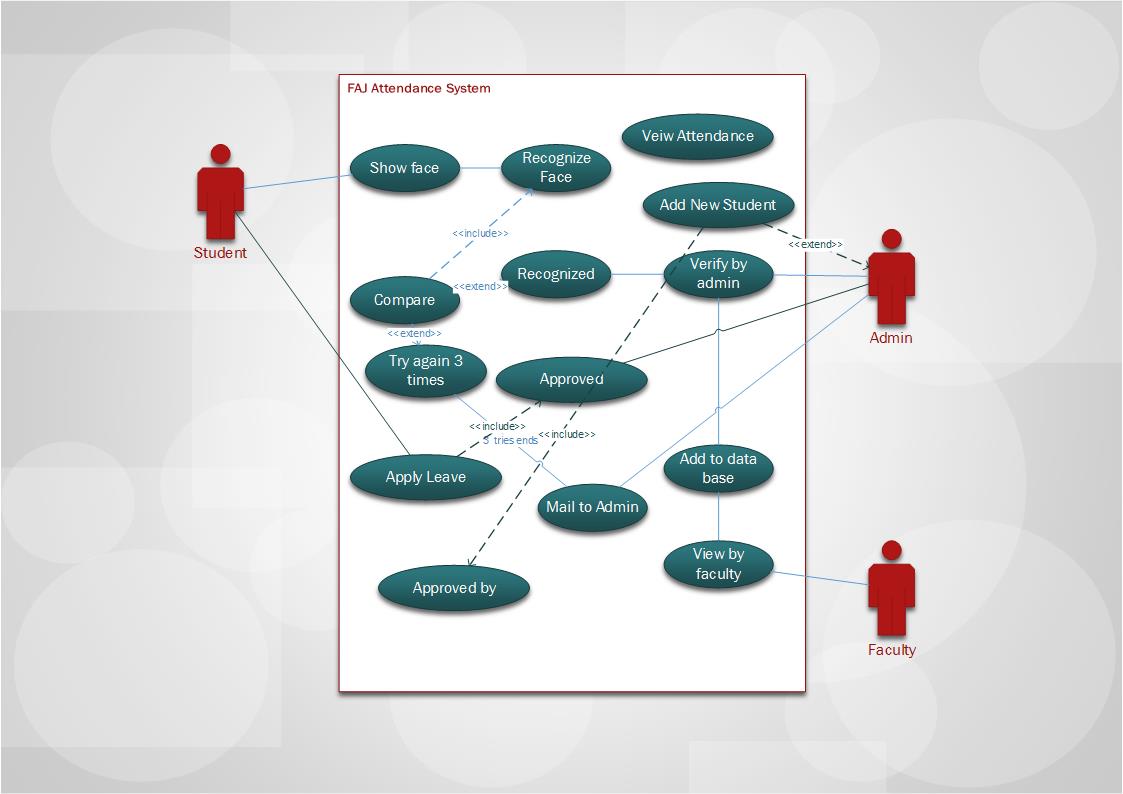
1. **Data Flow Diagram (DFD**

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**Describe:**



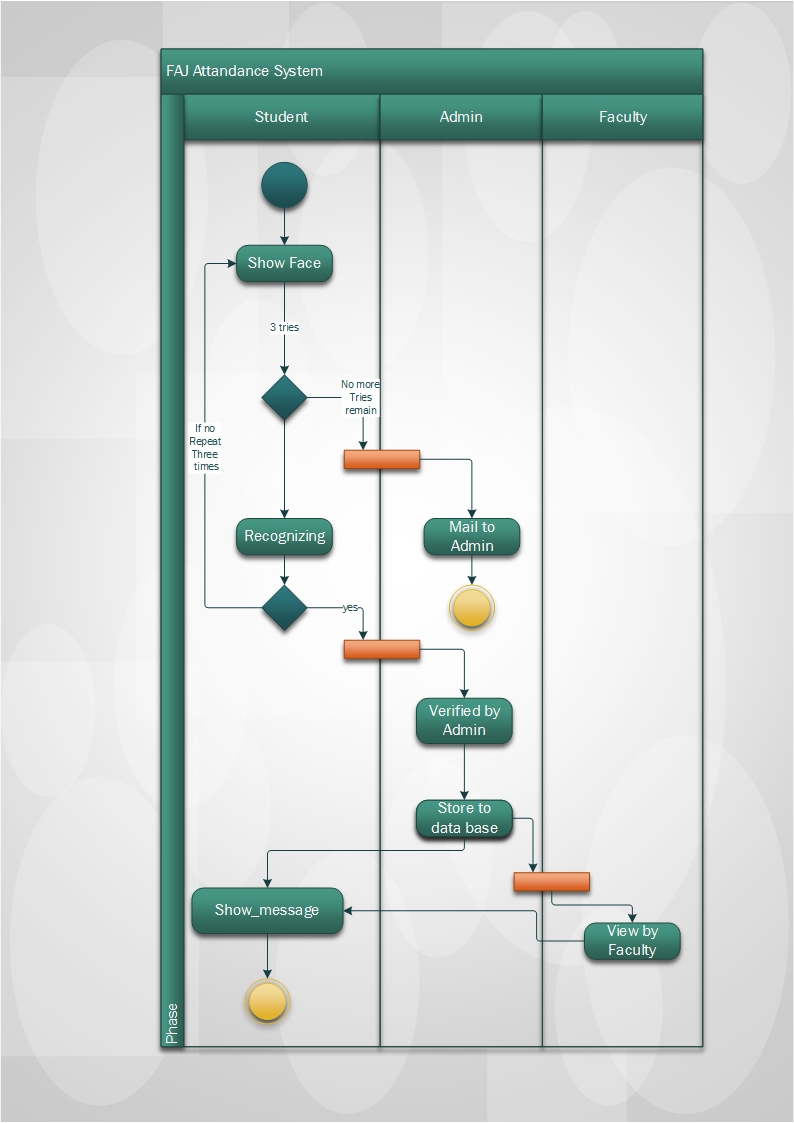
1. **Use case diagram**

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**Use case diagram**

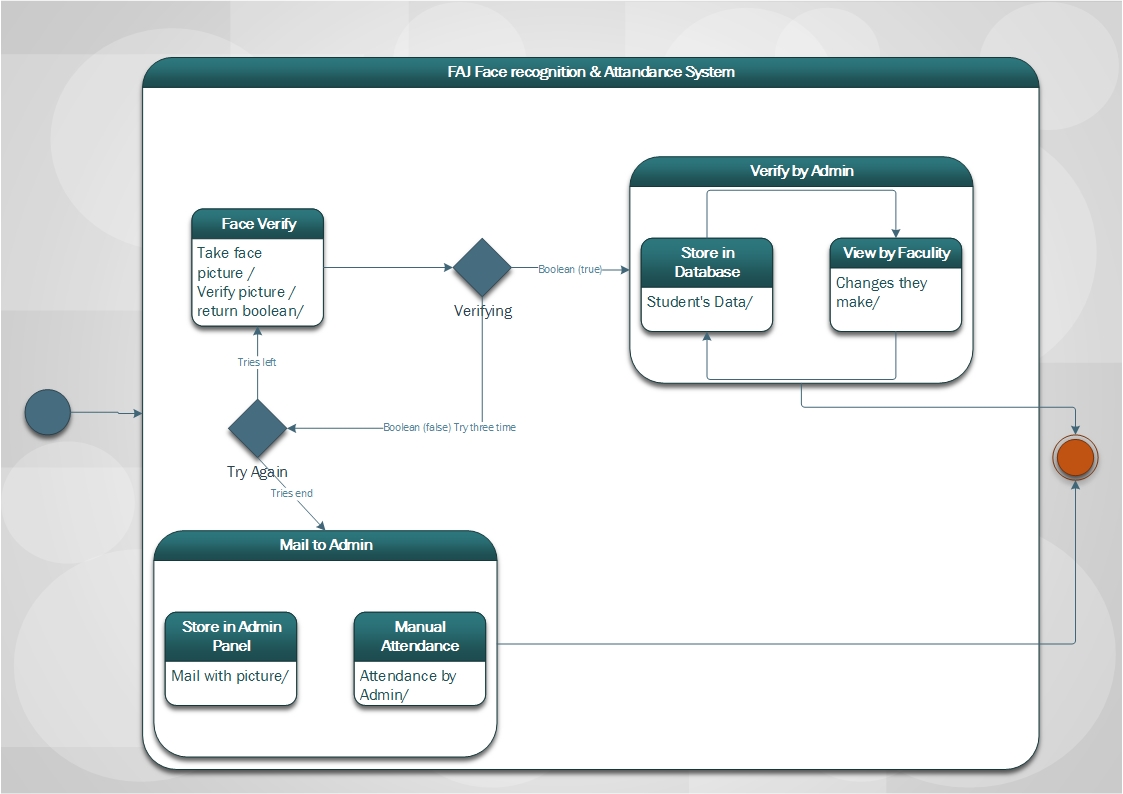
**Describe:**

1. **Activity diagram (Swim lane)**

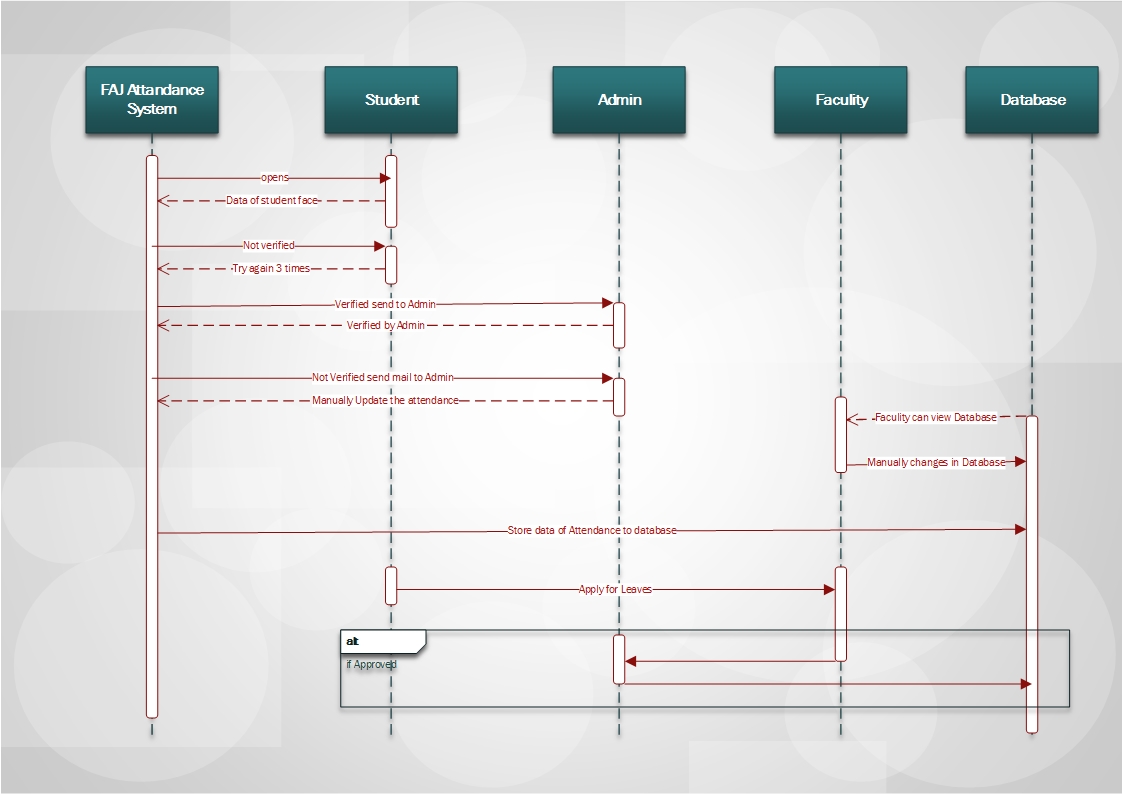
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**Describe:**

1. **State Machine Diagram**

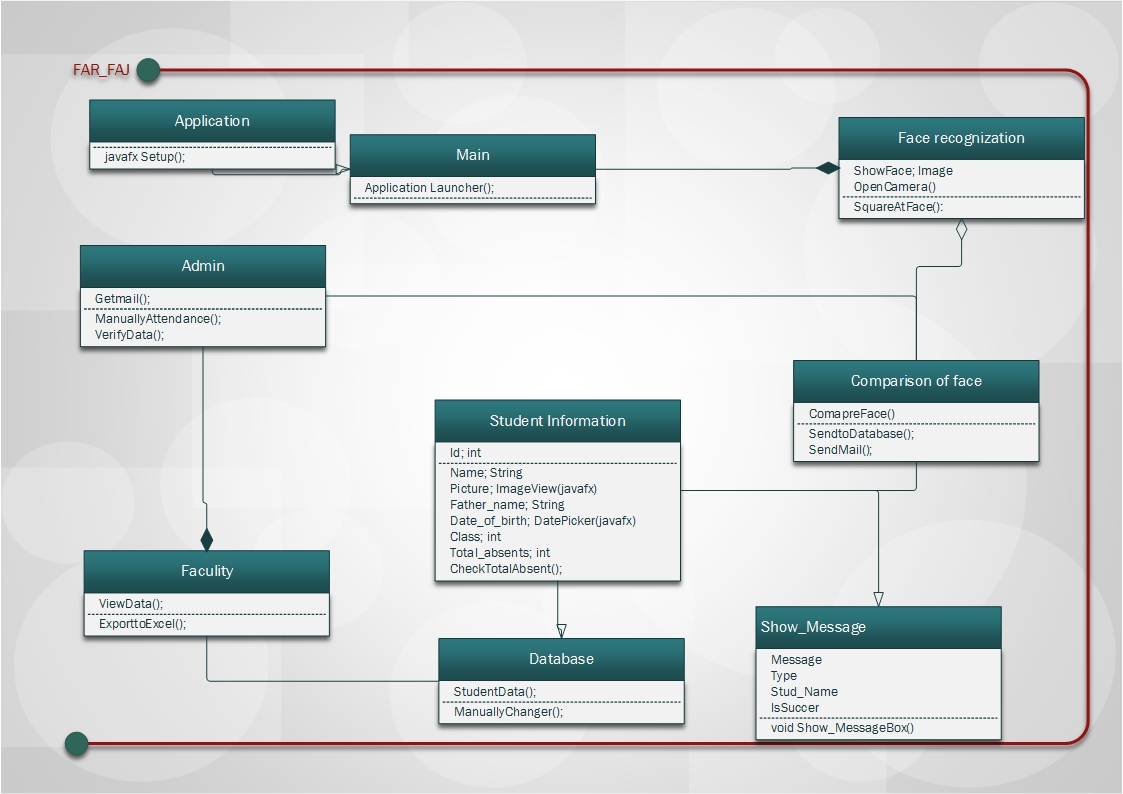
** Describe:**

1. **Sequence diagram**

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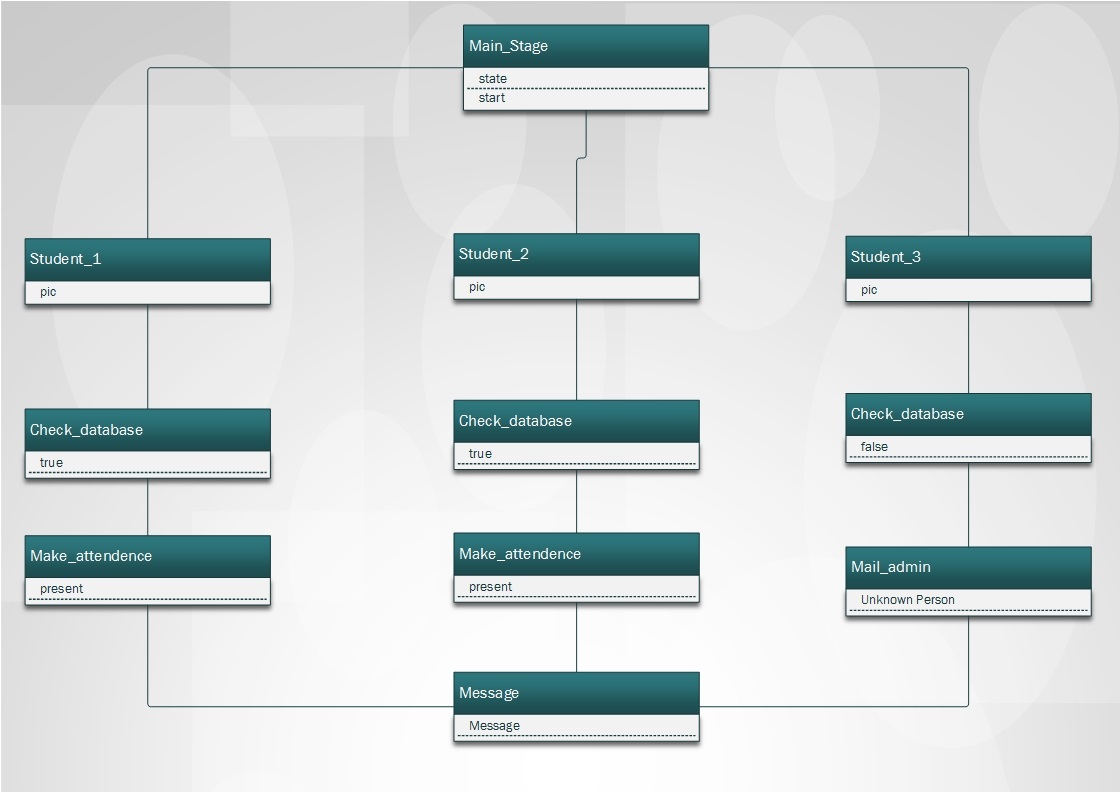
**Describe:**

1. **Class diagram**

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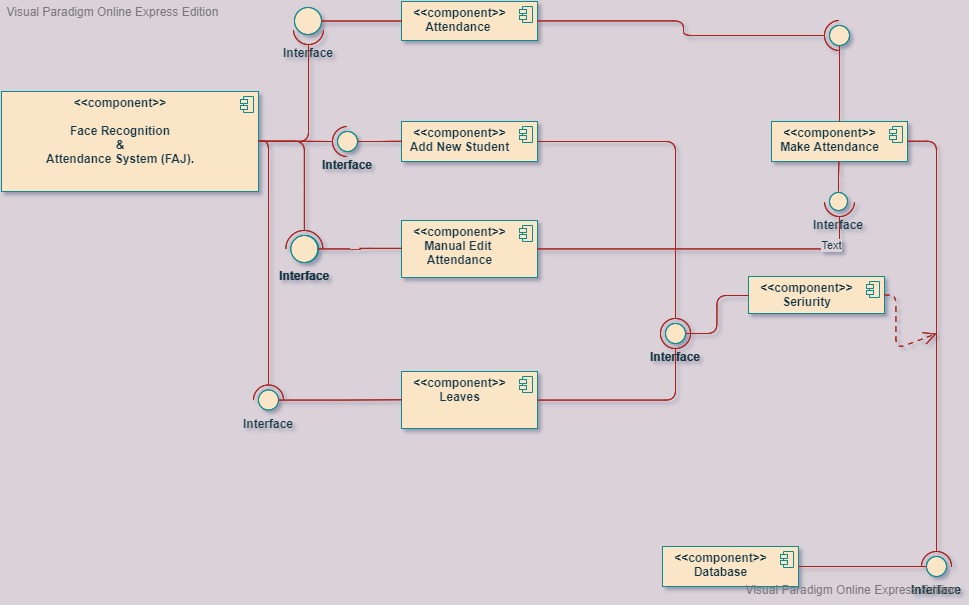
**Describe:**

1. **Object diagram**

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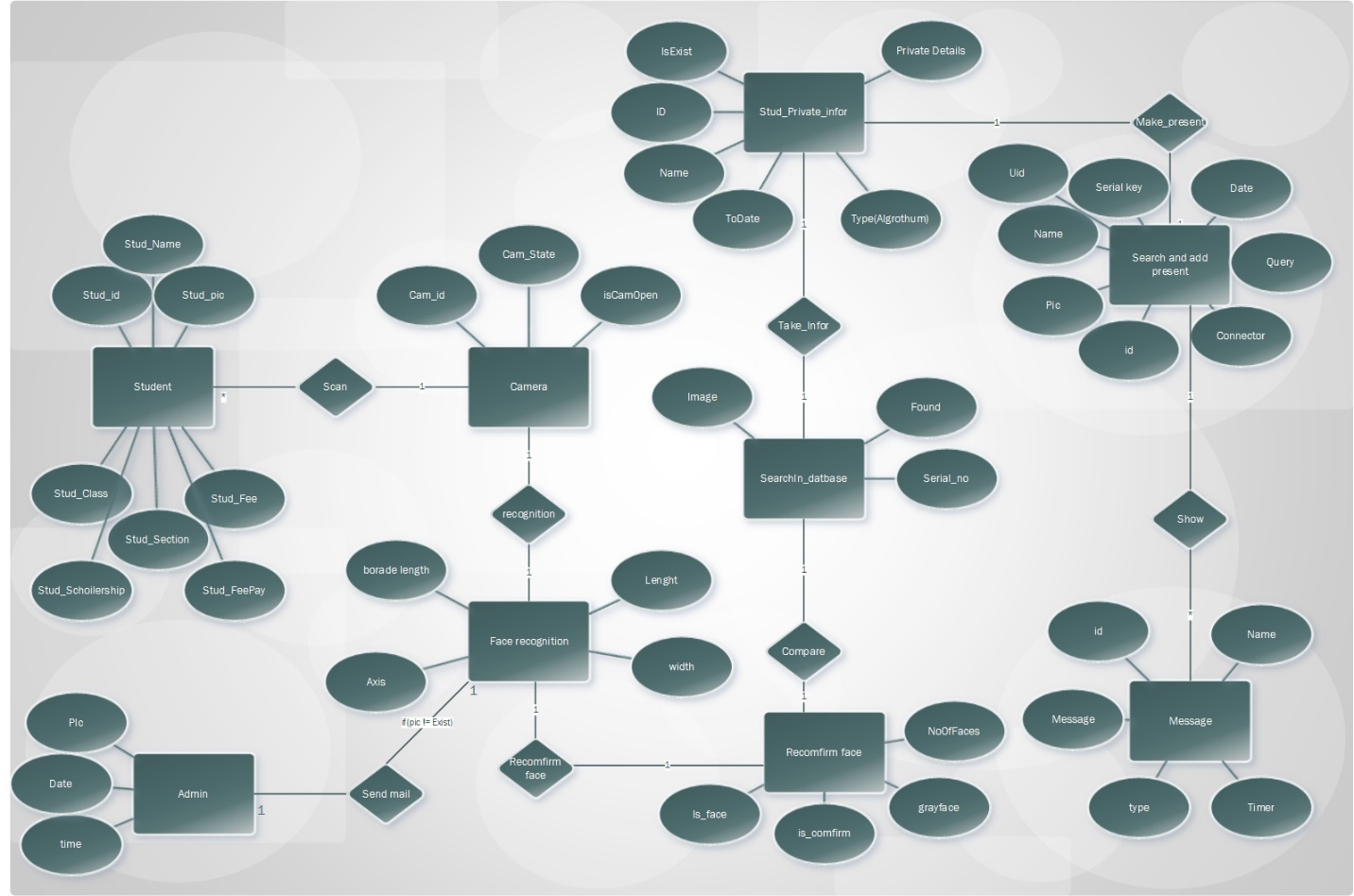
**Describe:**

1. **Component Diagram**

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**Describe:**

1. **Entity Relationship Diagram (ERD)**

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**Describe:**