Smart Attendance System Using Face Recognition with Python

Project Synopsis Presentation

Date: 23/04/2025

Major Project (ICI651)

Degree : BCA(CTIS)

Project Guide:
Mr. Aatish Kumar Baitha

Gulvesh (TCA2256029)
Anmol (TCA2256010)
Asheesh Kumar(TCA2256015)

FACULTY OF ENGINEERING & COMPUTING SCIENCES
TEERTHANKER MAHAVEER UNIVERSITY, MORADABAD

Team Details

TEERTHANKER MAHAVEER UNIVERSITY

Student Name	Role
Gulvesh	Developer
Anmol	Testing
Asheesh Kumar	

Guidelines: Mention Team Names & their role in project

- **The Smart Attendance System using Face Recognition is a Python-based project designed to automate the traditional attendance-taking process using facial recognition technology**.

- **What does the project do?**
- This system uses a live webcam feed to:Capture student images in real-timeRecognize their faces by comparing them with a pre-encoded image dataset Automatically mark attendance and store it in a MySQL database Provide a Tkinter-based GUI for easy operation

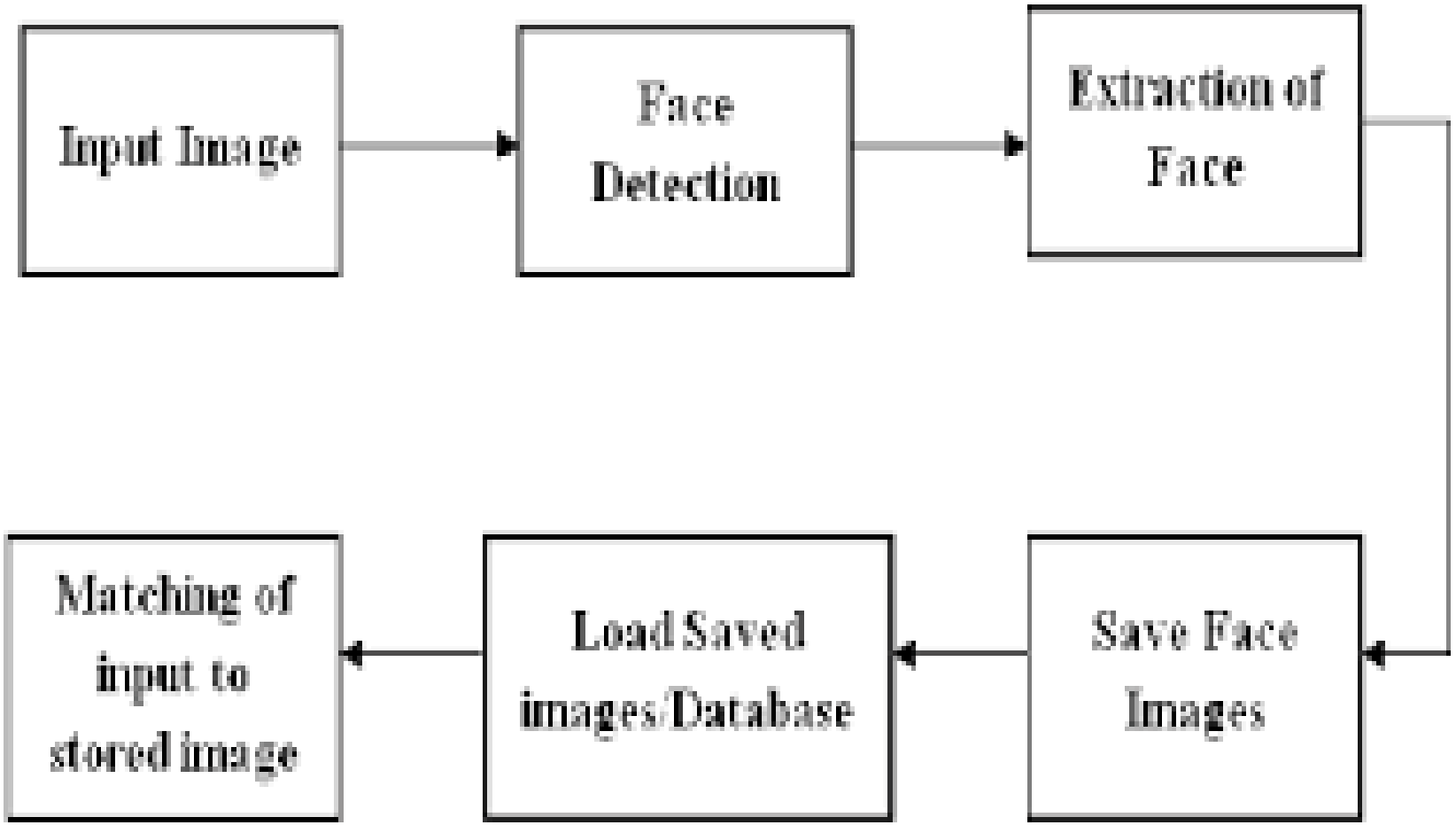
Methodologies/ Technologies/ Tools to be used

- **Programming Language**
- **Python 3.11.4**

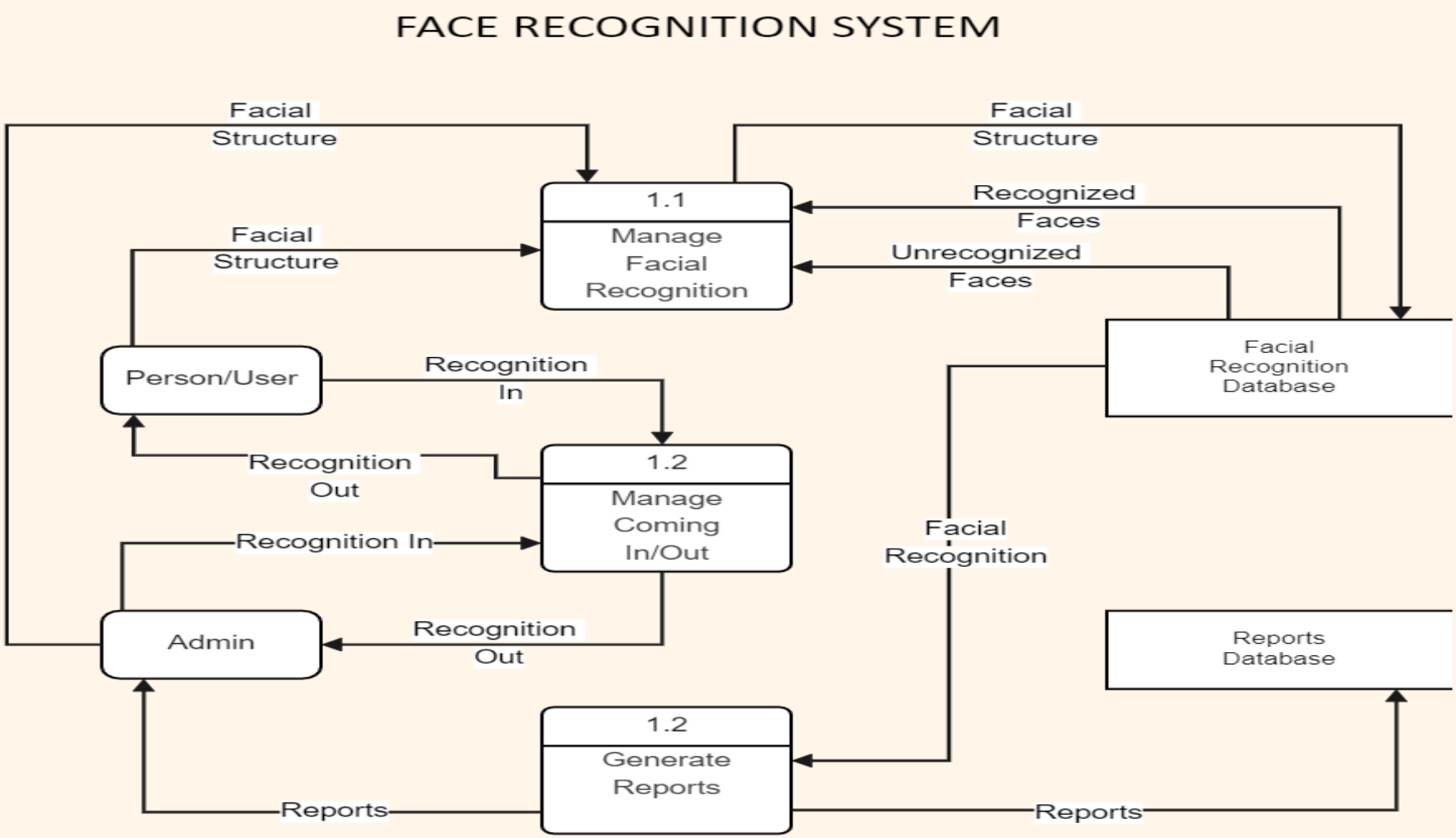
  Used for all backend logic, face recognition, image processing, database interaction, and GUI design.
- **Libraries & Frameworks**

Technology	**Purpose**
OpenCV	Real-time image processing and webcam access
face_recognition	Face detection, encoding & comparison
Tkinter	Building graphical user interface (GUI)
NumPy	Handling image data arrays and calculations
Pandas (optional)	Handling attendance records if using CSV

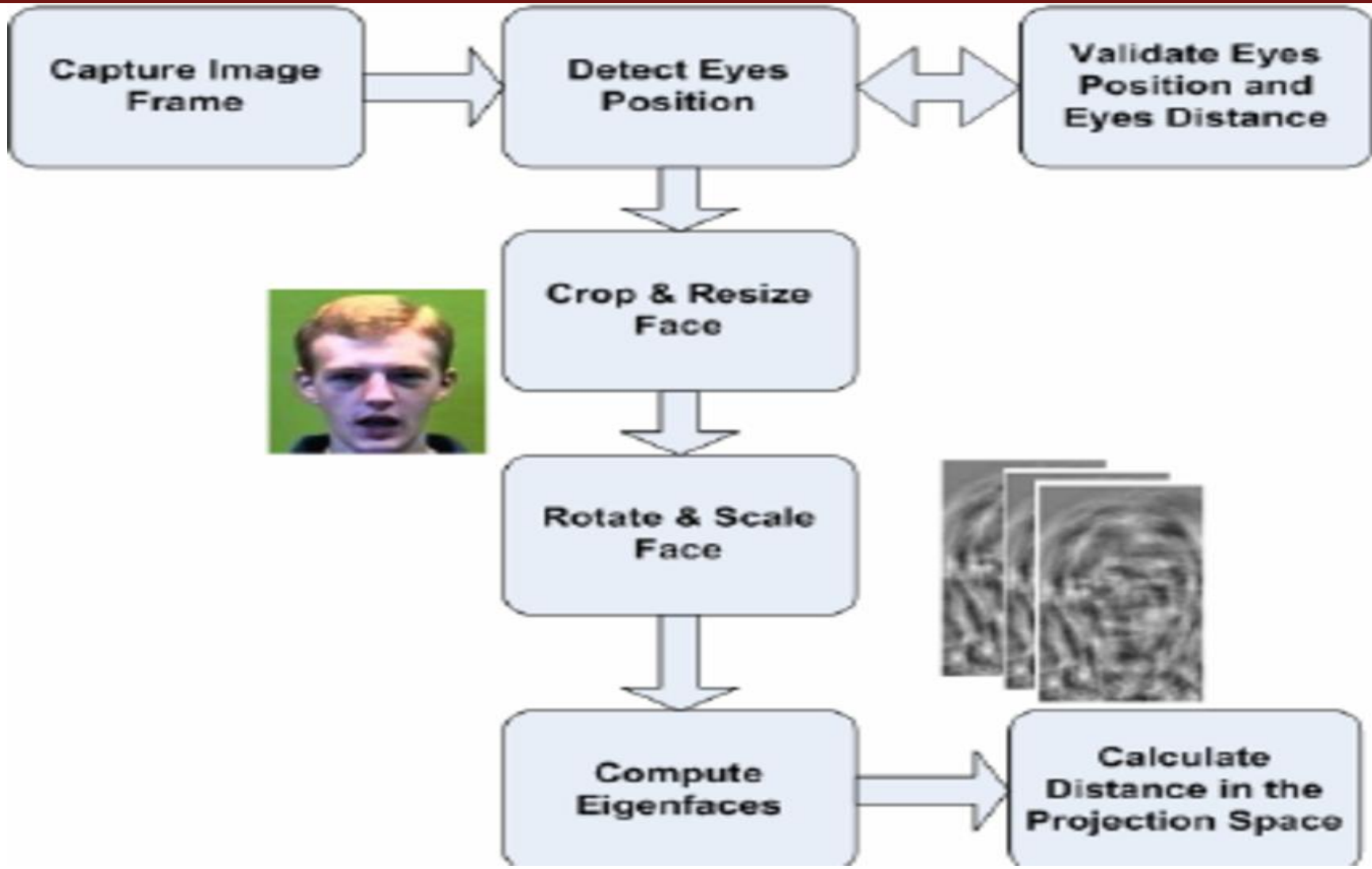
Context Diagram (Overall Project)



Entity Relationship Diagram (ERD)

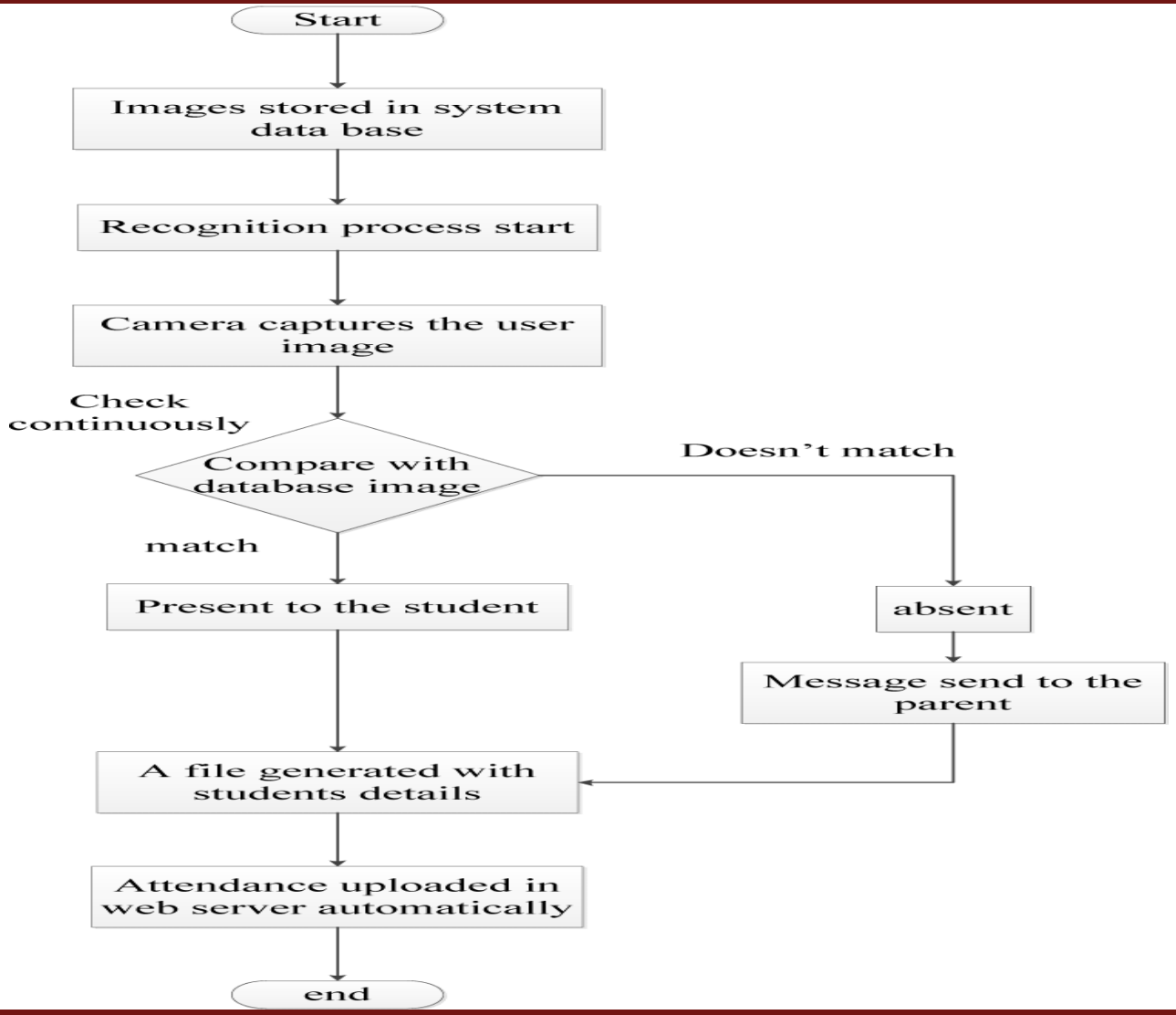


Data Flow Diagram (DFD)



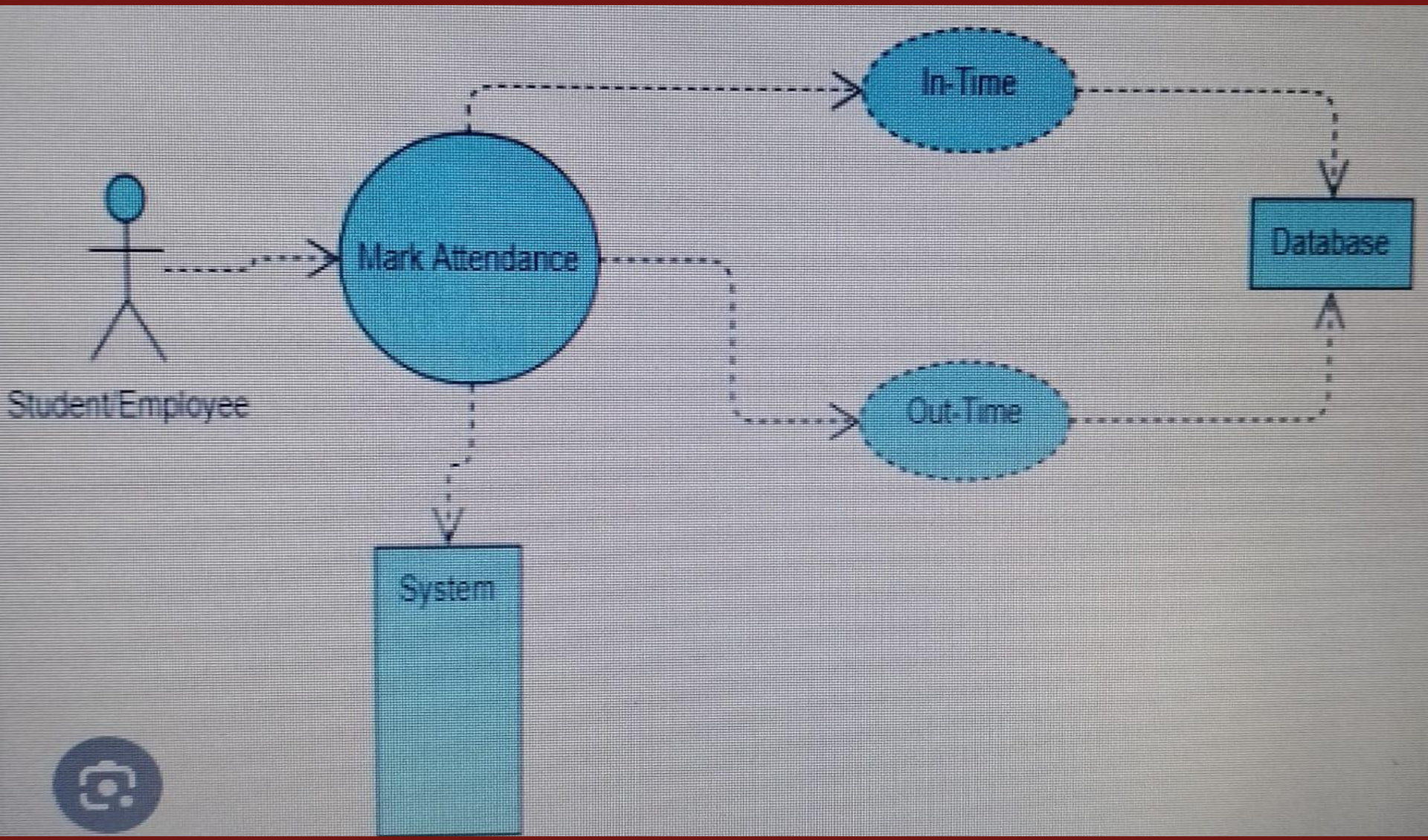
Guidelines: Add more slides, if required to show all DFDs

Flow Chart



Guidelines: This slide is optional

Use Case Diagram



Guidelines: This slide is optional. May add more slide, if the details are available

Advantage of The Project

- Contactless & Hygienic
- Prevent Proxy Attendance
- Time-Saving
- Accurate and Reliable
- Automated Record-Keeping
-
- User-friendly Interface
- Scalable & Customizable

Guidelines: Mention advantage from this project, the audience/ users who will get benefitted

- **Libraries & Tools Documentation**
- OpenCV Documentation – For webcam access, image processing
- face_recognition GitHub – Face detection and recognition
- Python Official Docs – Python syntax and standard libraries
- Tkinter GUI Reference – GUI creation using Tkinter
- MySQL Documentation – MySQL database queries and setup
- mysql-connector-python – Python-MySQL integration

- **Tutorials & Learning Resources**
- Real Python Tutorials
- GeeksForGeeks – Face Recognition Projects
- Stack Overflow – For debugging and error handling

THANKS