FACE RECOGNITION BASED ATTENDANCE SYSTEM

Introduction:

The Face Recognition Based Attendance System aims to automate the traditional attendance tracking process using facial recognition technology. This system eliminates the need for manual attendance marking, providing a more efficient and accurate solution for educational institutions or organisations.

Functional Requirements:

User Registration:

Users should be able to register with their email and password to access the system.

Login:

Registered users should be able to log in securely to utilise the system functionalities.

Student Registration:

Users should be able to register student details including name, ID, and other relevant information.

Image Capture:

The system should allow users to capture images of students for facial recognition.

Data Training:

Users should be able to train the system with student data and corresponding images for recognition.

Facial Recognition:

The system should accurately recognize registered students' faces to mark attendance.

Attendance Tracking:

The system should maintain records of attendance, marking students as present or absent based on recognition results.

Attendance Viewing:

Users should be able to view attendance records, both present and absent, for individual students or the entire class.

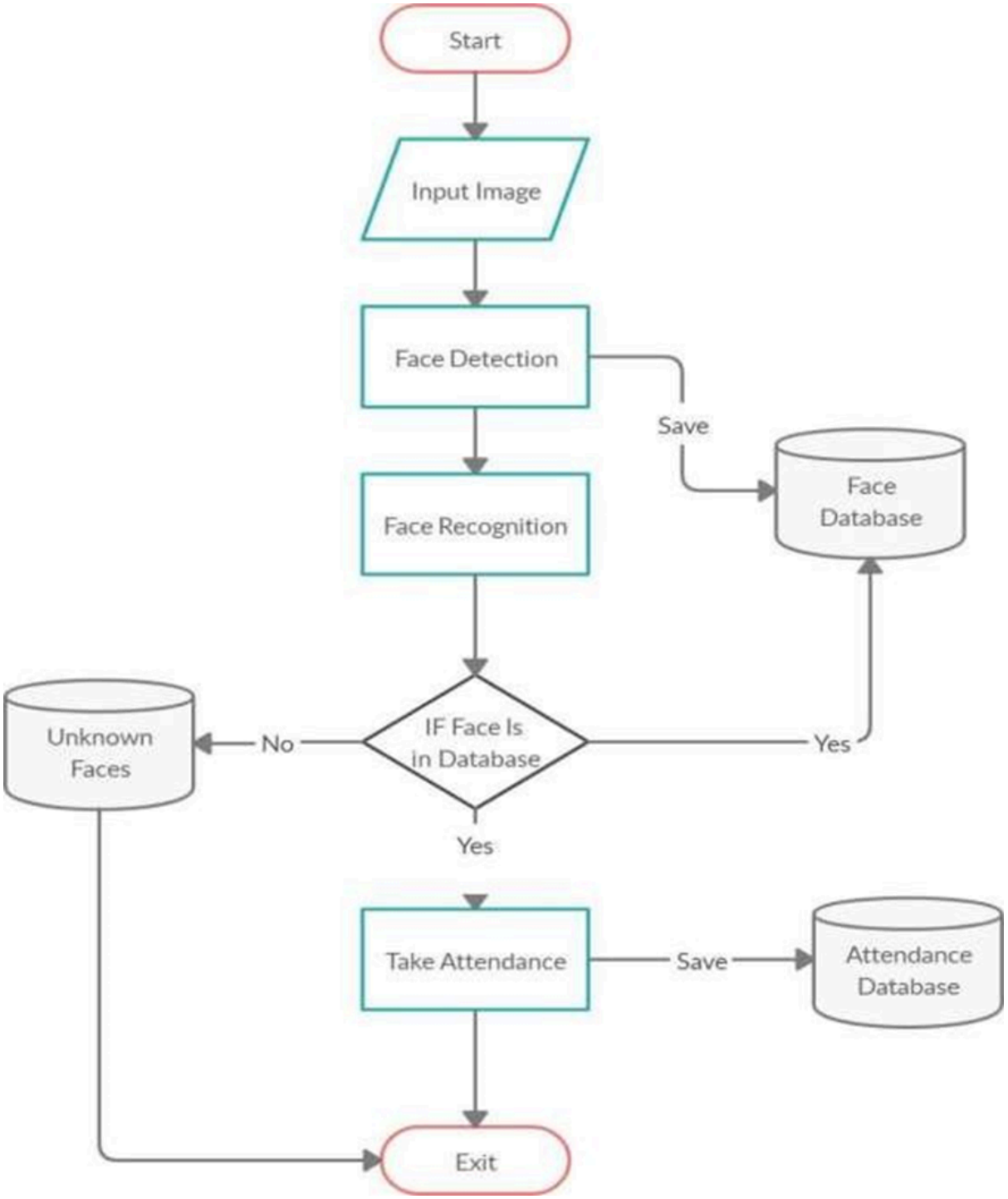
Data Export:

The system should provide an option to export attendance data for record-keeping purposes.

Query Handling:

Users should be able to submit queries or requests for assistance regarding system functionality.

Flow chart



Non-functional Requirements:

Accuracy:
The facial recognition algorithm should have a high accuracy rate to minimize errors in attendance marking.
Security:
User data, including login credentials and student information, should be securely stored and protected.
Scalability:
The system should be scalable to accommodate a large number of users and students.
Performance:
The system should perform efficiently, providing real-time recognition and attendance tracking.
Usability:
The user interface should be intuitive and user-friendly, allowing users to navigate the system easily.
Compatibility:
The system should be compatible with a variety of devices and operating systems for widespread use.
Reliability:
The system should operate reliably without frequent downtime or errors.

Technology Stack:

Programming Language: Python
Database: MySQL or SQLite for data storage

Conclusion:

The Face Recognition Based Attendance System aims to revolutionize attendance management by leveraging facial recognition technology. By meeting the outlined functional and non-functional requirements, the system will provide a robust and reliable solution for organizations seeking to streamline their attendance tracking process.