

Face recognition based attendance system

1. The purpose of the project :

This will help to make the attendance system autonomous and more accurate.

2. Overall description of the project:

This will be an attendance system based on face detection. Once the camera detects any face it will mark the attendance. This system will send the current face information to our server and after manipulating this information system match current information to the previous data on the server. If this is present then the system will mark it as present otherwise false.

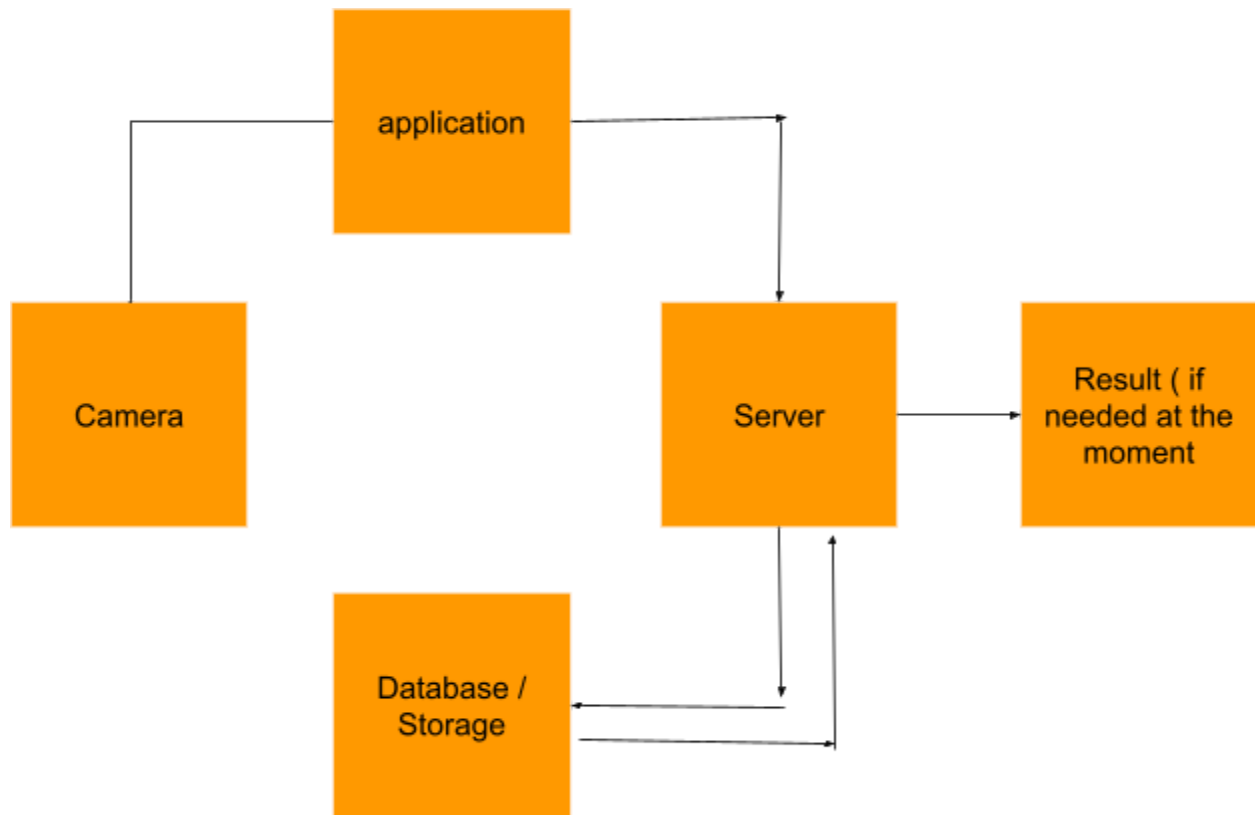
But due to remote work and lack of resources, we will send the converted image to the system so that it tells us about the attendance.

3. Scope of the project:

As everything around us now becomes digital from factories to food, mobile to automobile, etc. So why should the attendance system remain classical? About the scope of the project, we can easily set a single system for many users by classifying it. Every company, institute, school corporation wants an accurate and autonomous system. We can use it in companies for secure and easy access, in schools for quick attendance at not calling type attendance.

We can integrate this into any systems or institute that want attendance-type functionality or secure access to the area.

4. Block Diagram



5. Software Stack

- a. Django/Flask for web app.
- b. OpenCV for image recognition.
- c. Postgresql for database management.
- d. JavaScript APIs to send images to the server from any source such as RPi.

6. Specific system features and requirements:

- a. Functional requirements
- b. Interface requirements
 - i. Web API for image input from devices such as RPi
 - ii. DBMS python interface
- c. System/hardware features
 - i. Real time image input from camera.

- ii. Fake image detection.
- d. Non-functional requirements
- e. Software system attributes
- f. Database Requirements (what details will be saved in the database)

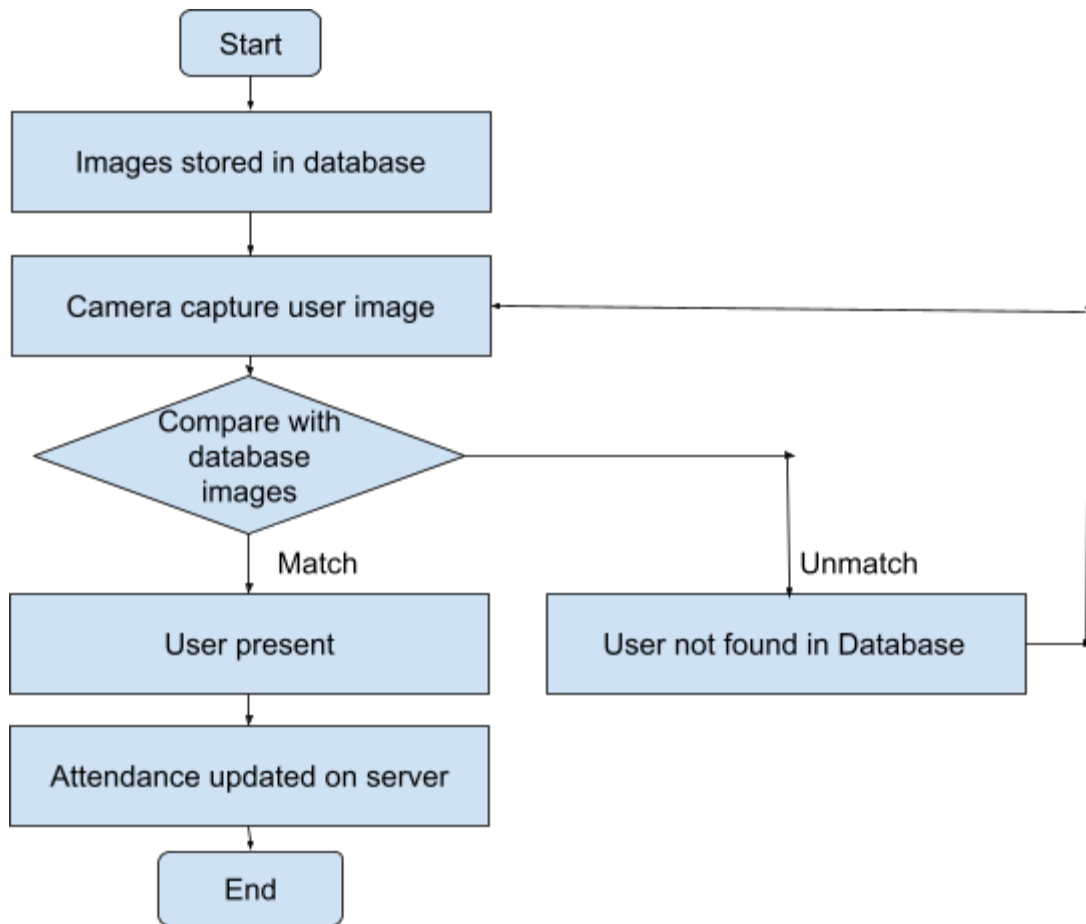
7. Assumptions and Dependencies

We are assuming that the user comes in the area of the camera or sight of reach. So that it can capture a good image of the user. This will be sent to the server and it requires a good connection for better performance. We will send an image to the server. This will mark attendance.

8. Constraints of your application

- a. Images that are sent to the server must be of good quality because processing poor images can result in false results.
- b. Can detect a single user at a time.
- c. Required good connection.

9. Data Flow Diagram



10. User Description

The audience of this system will be:

- Students
- Company's employees
- Registration office
- Secure entry

As we earlier mentioned this application has huge potential but so common. So many other audiences may arise which have user attendance system after making this application

11. Individual contributions

12.

We already have started research work for the project and work nearly equal but as we proceed we will divide this into our groups according to member preferences and work experience.

13. Workflow

We have done some of the work so far like required software, hardware, and how to do the task. We have a rough estimate about this but can't comment on any fixed date about this.