

EMPLOYEE ATTENDANCE & LOCATION ANALYSIS REPORT

Employee Name:	Navin KS
Employee ID:	EMP0001
Team:	AI
Role:	Lead
Report Period:	02 Apr 2025 to 09 Apr 2025

No attendance records found for this period

Face Authentication and Attendance System with Geo-Location

- Documentation

Overview

This application is for face authentication, attendance tracking, and location tracking. It integrates face recognition using MediaPipe, geolocation tracking, and geo-fencing.

Database Models

User Model (User)

Column	Type	Description
id	Integer (Primary Key)	Unique User ID
name	String	User's Name
email	String (Unique)	User's Email
password_hash	String	Encrypted Password
face_embedding	PickleType	Face embedding for authentication
department	String	Department Name
position	String	Job Position
registered_at	DateTime	Registration Date

profile_image	LargeBinary	Profile Picture
employee_id	String (Unique)	Employee ID
phone	String	Contact Number

Attendance Model (Attendance)

Column	Type	Description
id	Integer (Primary Key)	Unique Attendance ID
user_id	Foreign Key (User ID)	Associated User
timestamp	DateTime	Attendance Timestamp
type	String	'IN' or 'OUT'
latitude	Float	Latitude of the location
longitude	Float	Longitude of the location
accuracy	Float	Accuracy of GPS
address	String	Geocoded Address
device_info	String	Device details

Location Track Model (LocationTrack)

Column	Type	Description
id	Integer (Primary Key)	Unique ID
user_id	Foreign Key (User ID)	Associated User
timestamp	DateTime	Time of Location Capture
latitude	Float	Latitude
longitude	Float	Longitude
accuracy	Float	GPS Accuracy
address	String	Geocoded Address

API Endpoints

1. User Authentication

Login

URL: /login

Method: POST

Request Body:

```
{
  "email": "user@example.com",
  "password": "password123",
  "photo": "base64_image_string"
}
```

Response:

```
{  
  "message": "Login successful"  
}
```

Register

URL: `/register`

Method: `POST`

Request Body:

```
{  
  "name": "John Doe",  
  "email": "john@example.com",  
  "password": "password123",  
  "photo": "base64_image_string",  
  "department": "IT",  
  "position": "Developer",  
  "phone": "9876543210",  
  "emergency_contact": "9123456789"  
}
```

Response:

```
{  
  "message": "Registration successful",  
  "user_id": 1  
}
```

Logout

URL: `/logout`

Method: `GET`

Response: Redirects to login page.

2. Attendance Tracking

Mark Attendance

URL: `/mark-attendance`

Method: `POST`

Request Body:

```
{  
  "photo": "base64_image_string",  
  "location": {  
    "latitude": 28.7041,  
    "longitude": 77.1025,  
    "accuracy": 5.0,  
    "address": "New Delhi, India"  
  }  
}
```

Response:

```
{  
  "message": "Attendance marked as IN",  
  "attendance": {  
    "type": "IN",
```

```
"timestamp": "2025-03-24 09:00:00",  
"location": {  
  "latitude": 28.7041,  
  "longitude": 77.1025,  
  "address": "New Delhi, India"  
}  
}  
}
```

3. Location Tracking

Track Location

URL: `/track-location`

Method: `POST`

Request Body:

```
{  
  "latitude": 28.7041,  
  "longitude": 77.1025,  
  "accuracy": 5.0,  
  "address": "New Delhi, India"  
}
```

Response:

```
{  
  "message": "Location tracked successfully"
```

}

View Location Map

URL: `/view-map`

Method: `GET`

Response: HTML page with map visualization.

4. Attendance Reports

Generate Attendance Report

URL: `/generate-report`

Method: `GET`

Parameters:

- `start_date` (optional, default: first day of the current month)
- `end_date` (optional, default: current date)

Response: PDF file of attendance report.
