FACE RECOGNITION ATTENDANCE SYSTEM

==================================

📌 DESCRIPTION:

---------------

This is a Python-based project that uses \*\*Face Recognition\*\* to mark attendance.

The system captures face images, trains a model, and recognizes faces in real-time to

mark and store attendance.

✅ FEATURES:

-----------

- Student face registration

- Face training using OpenCV

- Real-time face recognition using webcam

- Attendance marking with name and time

- CSV file export

- Simple Tkinter GUI

🛠 REQUIREMENTS:

----------------

- Python 3.x

- Webcam (Built-in or external)

- XAMPP (if using MySQL database)

- Installed Python libraries:

- opencv-python

- numpy

- pillow

- mysql-connector-python (if using MySQL)

💡 INSTALL DEPENDENCIES:

------------------------

Open your terminal/command prompt and run:

pip install opencv-python numpy pillow mysql-connector-python

📂 DATABASE SETUP (if using MySQL):

------------------------------------

1. Start XAMPP and launch \*\*Apache\*\* and \*\*MySQL\*\*.

2. Go to: http://localhost/phpmyadmin

3. Create a database named: \*\*face\_attendance\*\*

4. Run the following SQL to create the table:

```sql

CREATE DATABASE face\_attendance;

**⚙️ PROJECT STRUCTURE:**

* main.py → Entry point to run the application
* data/ → Stores captured images
* trainer/ → Stores the trained model (classifier.xml)
* attendance/ → Stores CSV files of marked attendance
* student\_details.csv → Optional: Stores registered student info

**🚀 HOW TO RUN:**

1. Make sure Python and dependencies are installed.
2. Ensure webcam is connected and working.
3. Run the following command in terminal:

python main.py

1. Use the GUI buttons:
   * **Register Face**: Capture images of new student
   * **Train Data**: Train face recognition model
   * **Mark Attendance**: Start recognition and mark attendance
   * **Exit**: Close the application

**📌 OUTPUT:**

* Attendance will be saved in /attendance/ folder as .csv
* If using MySQL, data will also be inserted into the attendance table

**❗ TROUBLESHOOTING:**

* If webcam doesn't open, make sure no other app is using it.
* If MySQL connection fails, check host/user/password in the Python file.
* Run the script from the project folder to avoid path issues.

**🙌 CREDITS:**

**Developed by Sahil Vedwal  
University of Engineering & Management, Jaipur**