Software Engineering Project Write-Up
Project Name: Facial Recognition Attendance System

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Problem Statement:

There are several problems in the conventional attendance marking system. The face recognition attendance system emphasises its simplicity by replacing classical attendance marking techniques.

Features:

The following are the expected features of this system:

- To recognise the facial segment in a picture.
- To extract useful features from a face that has been detected.
- To classify the features such that the detected face can be recognised.
- To keep track of the User's attendance.
- To notify each user that his/her attendance has been recorded..

Requirements:

- Camera
- Access to images of individuals
- Access to organisation's database
- Working internet connection

Working:

The human face is a unique representation of an individual's identity. Face recognition is a biometric method of identifying an individual by comparing real-time collected photos with previously stored images of that person in a database. The methodology flow begins with the image capture by using a simple and handy interface, followed by pre-processing of the captured facial images, then feature extraction from the facial images, subjective selection, classification of the facial images to be recognized.

A camera clicks pictures of the individuals. These images are then matched using AI to the available images of the individual, useful features extracted from the images and then classification is done in order to identify the individual. Then their attendance is recorded using the details that are retrieved from the organisation's database.

A notification is then sent to the individual confirming that his/her attendance has been recorded and the changes are updated in the database. There will be a private log-in so that every individual can see only his/her record. Authorised personnel can view and even edit the attendances of the individuals.

Workflow:

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Camera captures        Captured images         Feature Extraction       Classification of       Attendance is
images of the person → undergo Pre-        →   from the face images  →  Images to be        →   recorded and
                       processing                                        recognized              notification is sent to
                                                                                                 the individual
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