Ubiquitous Language
Glossary

Term	**Description**
Attendance by Face recognition	The main objective of this initiative is to develop an attendance monitoring system for employees within organizations, leveraging facial recognition technology. The aim is to enhance the current attendance system, making it more efficient and effective. Optimal detection is ensured by requiring employees to be in well-lit areas. The integration of facial recognition in the attendance monitoring system not only guarantees precise attendance records but also addresses existing shortcomings. By utilizing a system to overcome these deficiencies, resources are conserved, and human involvement in complex tasks is minimized, streamlining the overall process.
Training	In this process, the machine undergoes several steps to train on images. Initially, it traverses the images directory, converting them to either grayscale or RGB, and resizes them. The next step involves appending faces and their corresponding IDs to an NP array. Subsequently, the machine identifies faces in each image. Finally, it proceeds to train the system by associating faces with their respective IDs.
Preprocessing	During the second stage, the system conducts various image preprocessing steps to identify users. Initially, the camera captures real-time photos of users. Subsequently, the system initiates a skin segmentation process, followed by cropping the captured image to detect the face. Finally, the system scales the captured image for further processing.
Feature Extraction	In the third stage, the focus is on feature extraction. Initially, the system applies Contrast Limited Adaptive Histogram Equalization (CLAHE). Following this, a classification process is executed. Next, Principal Component Analysis (PCA) is applied to extract relevant features. Finally, the extracted features are compared with the images in the training dataset.
Face Recognition	In this final stage of the system, the process begins with subject selection. Following that, the recognition phase takes place, wherein the system calculates the distance to our face. If the calculated distance is less than or equal to 0.6, the person is recognized, and attendance is marked. However, if the distance exceeds 0.6, indicating an unknown person, the system labels them as "unknown" and refrains from marking attendance.
Marking Attendance	Initially, the system opens the Attendance file, formatted in CSV. If the user captured by the camera already has an existing entry in the file, no further action is taken. However, if the user is new, the system records the user's name along with the current timestamp. The datetime class from the datetime package is utilized to obtain the current time.
Users	Typically, the users of this system are employees or students.
Admin	An administrator with elevated privileges is responsible for overseeing the software and platform administration. Their role includes delivering updates for both the software and the technical aspects of the platform.