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### ABSTRACT

With a big classroom, it's challenging to manage student attendance practically. There is always a potential that a representative will show up given the extremely large number of pupils in attendance throughout the class. It has been hard to track attendance the old-fashioned way. These methods, however, lack a lot of dependability. The computer system will track kids' attendance and recognize their faces. Using a face recognition model, the administrator will add the students and record their attendance. The model will identify a face in a database of face images if it can be positively identified. The process of identifying faces that can be distinguished as human beings after they have been found in a picture. The administrator may see the attendance as well.

KEYWORDs: Open CV, TensorFlow, Image Quality

### **INTRODUCTION**

In many schools and universities, recording attendance using the traditional technique is a laborious effort. Also, the faculty must personally call out each student's name to record attendance, which could take up to five minutes for the entire session. This takes a lot of time. An essential biometric characteristic that is non-intrusive and simple to acquire is face recognition. Systems that use face recognition are generally unaware of different facial expressions. Verification and face identification are the two categories that make up a face recognition system. Face verification uses a 1:1 matching procedure to compare a face image to a template face image, while face comparison uses a 1: N problem. This system's goal is to create an attendance system that is based on face recognition.

### **RELATED WORK**

### 2.1Facial Recognition Student Attendance System

The creation of this system aims to digitally replace the outdated method of taking attendance by calling names and keeping handwritten records. The methods now used to take attendance are cumbersome and time-consuming. The manual recording makes it simple to alter attendance data. Proxy attacks can compromise the current biometric systems and the conventional method of taking attendance. Therefore, it is suggested that this article address each of these issues.Today's educational institutions are worried about students' consistent performance. Insufficient attendance is one factorcontributing to the decline in student performance. The most popular techniques to record your attendance are to sign or callthe pupils. It was problematic and took longer. A computer-based student attendance monitoring system that enables the teacher to maintain attendance records is now essential.

## 2.2 System for managing attendance that uses facial recognition

Face identification is done using a face recognition algorithm, and after that, the image that has been processed is compared to the other photographs in the folder, and attendance is noted and promptly saved in the spreadsheet. This innovative automated technique assists in lessening the workload of individuals when compared to the already-used traditional way. Phases of the proposed research

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involve webcam image capture, face detection, face comparisons and recognition, and attendancemarking.

### **PROPOSED SYSTEM**

Today's educational institutions are worried about students' consistent performance. Insufficient attendance is one factor contributing to the decline in student performance. The most popular techniques to record your attendance are to sign or call the pupils. It was problematic and took longer. A computer-based student attendance monitoring system that enables the teacher to maintain attendance records is now essential. Face reputation and face detection using open-source computer vision without human intervention

## SOFTWARE DEVELOPMENT LIFE CYCLE

The agile model is the combination of iterative and incremental Agile is defined as quick or adaptable. The term "Agile process model" describes a method of software development that relies on iterative development. Long-term planning is not a direct component of the way agile methodologies divide jobs into smaller iterations or components. At the start of the development process, the project's requirements and scope are established. Plans are made in advance that specify[11] the number of iterations, their duration, and their scope. In the Agile process model, each iteration is thought of as a brief time "frame" that typically lasts one to four weeks. The project risk is reduced and the overall project delivery time needs are decreased by breaking the project up into smaller pieces. A team must finish a full iteration of the software development life cycle, which includes planning, requirements analysis, design, coding, and testing before a usable product is demonstrated to the client.

The phrase "Agile model" basically refers to a group of development techniques. These procedures are slightly different from one another despite sharing certain fundamental commonalities. Agile SDLC models in the list below include Scrum Extreme, feature-driven development, and Crystal Atern programming (XP) One-stop shop for lean development The requirements are broken down into multiple tiny pieces by the Agile model so that they can be built up progressively.

Iterative development is a component of the Agile approach. Iterations are used to construct each incremental component. Each iteration is meant to be brief, simple, and capable of being finished in a matter of weeks. One iteration is planned, created, and released to the customers at a time. Plans for the future are not formed.

Steps involve in agile SDLC models are:

- Requirement gathering
- Requirement Analysis
- Design Coding
- ✤ Unit testing
- ✤ Acceptance testing



Figure-1:SOFTWAREDEVELOPMENT LIFE CYCLE

A Time Box is the amount of time needed to finish an iteration. The term "time box" describes the longest period necessary[12] to deliver an iteration to clients. Hence, the end date for an iteration remains the same. Although to provide it on time, the development team may choose to cut back on the functionality delivered during a Time-box. Delivering an increment to the customer after each Time-box is the Agile model's main tenet.

## SOFTWARE ENVIRONMENT

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For mobile devices, the Android software stack consists of an operating system, middleware, and important applications. In 2005, Google Inc. acquired Android Inc., the company that created the software.Linux is the kernel on which the mobile operating system for Android is built. The creation and distribution of Android was a joint effort between Google and other Open Handset Alliance participants.It is the responsibility of the Android Open-Source Project (AOSP) to maintain and advance Android. The most popular smartphone platform in the world is powered by the Android operating system. The Android SDK offers the resources and APIs required to start creating Java-based applications for the Android platform. A sizable developer community for Android creates "apps" that increase the capabilities of the devices. With Android, there are presently over 250,000 apps accessible. **LIBRARIES** 

And roid comes with a selection of C/C++ libraries that are utilized by various system components. The Android application framework offers developers access to several features. This is a list of some of the most important libraries:

System C library - An adaptation of libs from the standard C system library (BSD) that is tailored for embedded Linux-based devices.

MediaLibraries- Many popular music and video formats, including MPEG4, H.264, MP3, AAC, AMR, JPG, and PNG, as well as static picture files, can be viewed and recorded using Packet Video's Open CORE-based Media Library.

Surface Manager- This tool integrates 2D and 3D graphic layers from other programs and manages access to the display subsystem.

**SGL-**It is the underlying 2D graphics engine;

3D libraries- Itis an implementation based on OpenGL ES 1.0 APIs; the libraries use either hardware 3D acceleration (where available) or the included, a highly optimized 3D software rasterizer.

LibWebCore- Itis a modern web browser engine that powers both the Android browser and an embeddable web view.

Two powerful and lightweight relational database engines are available to all applications: **FreeType** and SQLite

### **3.4ANDROID RUNTIME**

The core libraries of the Android programming language offer the majority of the features found in the core libraries[13] of the Java programming language.

Each Android application has its own Dalvik virtual machine instance and runs in its process. Dalvik was created so that a device could effectively run many virtual machines. The Dalvik VM runs files in the Dalvik Executable (.dex) format, which is designed to take up the least amount of memory. The register-based VM executes classes created using a Java language compiler and converted to the dex

### 4. RESULTS AND DISCUSSIONS

**4.1LOGIN PAGE** 



Fig2:Facial Attendance App Logo



Figure-3: Login Page

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Entering proper login information on the login screen allows users to use the app and create an attendance record that can be saved in a format.

## **4.2REGISTRATION PAGE**



Figure-4: Registration Page

The new student registers here and fills out specific information. **4.3ACTION PAGE** 



Figure-5: Action Page

We have a range of alternatives to choose from for numerous activities on the action page, including To examine the list of registered users, go to

1. examine Recognition List. To update your list, remove specific saved recognitions, go to 2. Update Recognition List.

3. store Recognition: After adding a new member, store the recognitions.

4. To load saved recognitions, choose Load Recognition.

5. Clear all Recognition: This option clears the Recognition List completely.

6. Import Photo: This option allows you to import a local gallery photo.

7. Hyperperameters: it is used to calculate the greatest distance to a neighbour.

8.Developer mode: The distance between the student's face and the camera is also measured, and the measurement is in me



Figure-6: Distance Measurement

## **4.4STUDENT DATA PAGE**



Figure-7: Student Data Page

Name, department, year and mobile number are typed in this student data page's fields, and then you click "Add Page" to add a new member.

It uses the data stored in the database to track when the attendance is collected.

# 4.5STUDENT ATTENDANCE PAGE

2023-03-24		Search
Name	chandu	
Date	2023-03-24: 09:38	
Department	cse	
Year	2023	
Mobile	+919059086142	
Name	dam	
Date	2023-03-24: 10:17	
Department	cse	
Year	1728	
Mobile	+919059086142	



By entering either the current date or a previous date on this student attendance page, data is loaded that contains both the time and the student details for those who were there on that particular day.

## 5. CONCLUSION:

The intelligent attendance management solution addresses the issues with the existing manual systems. We used the facial recognition technique to monitor student attendance and enhance the system. The system will take the shot and save it in a database. The administrator will be able to view the attendance for the student whose face can be recognized and matched with student images. It will be more advantageous for the system to accurately report student attendance. Because the identification rate rises with decreasing distance, the system's performance might even be higher when dealing with a high-processing system

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