Artifical Inteligance and
Python Based

Face Recognition Based Attendance System

Submitted by
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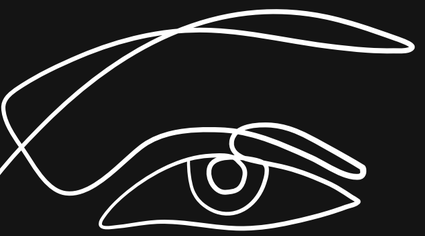
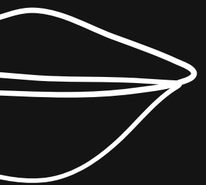
Introduction

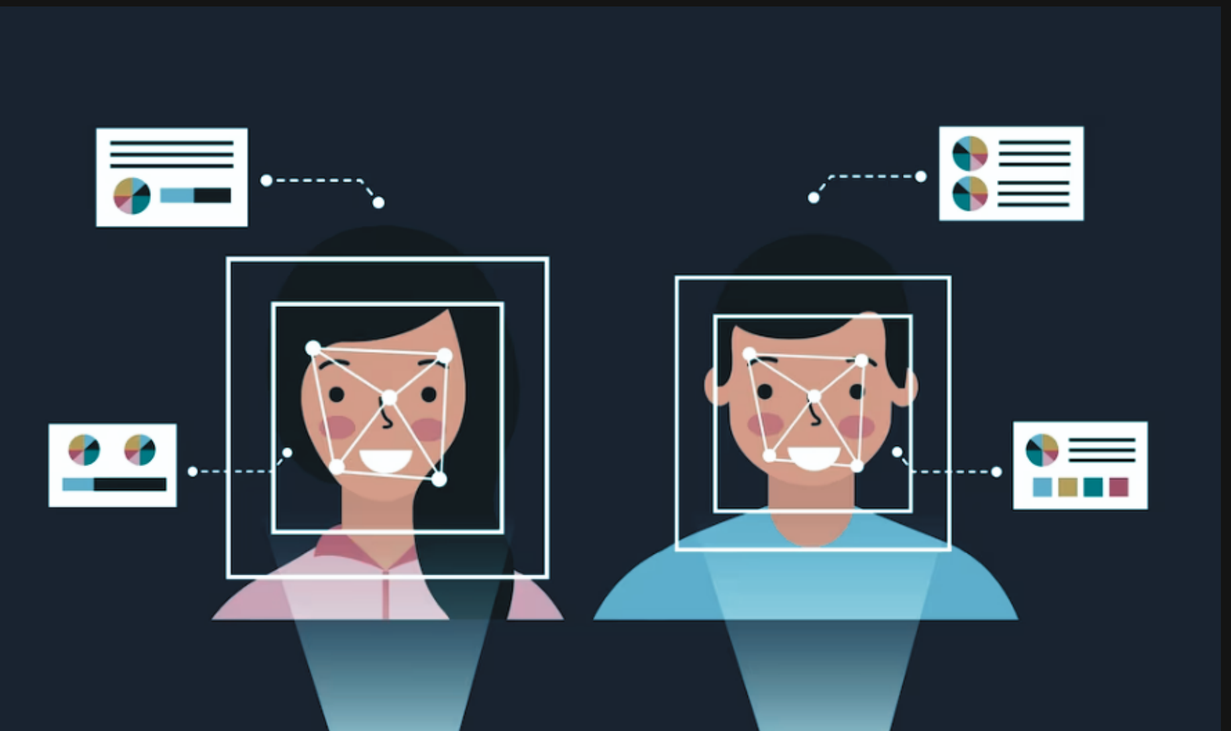




To maintain the attendance record with day-to-day activities is a challenging task. The conventional method of calling name of each student is time consuming and there is always a chance of proxy attendance. The following system is based on face recognition to maintain the attendance record of students. The daily attendance of students is recorded subject wise which is stored already by the administrator. As the time for corresponding subject arrives the system automatically starts taking snaps and then apply face detection and recognition technique to the given image and the recognize students are marked as present and their attendance update with corresponding time and subject id.

Face Recognition Attendance System is marking attendance with the help of this technology

Objective & Scope

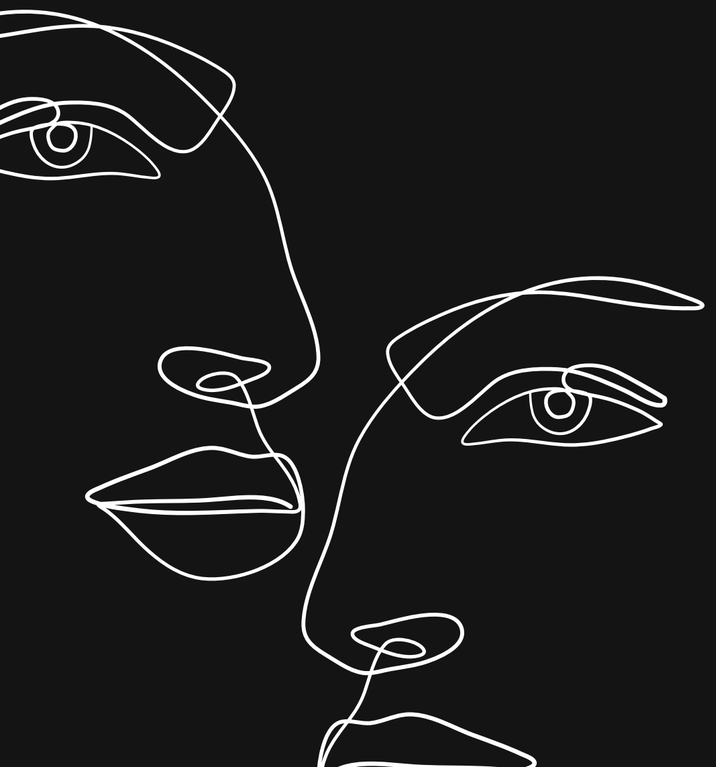


To identify the student faces accurately. To mark the attendance automatically. To reduce the time and the efforts required for manual attendance to provide a valuable attentive system for both teacher and students. It provides flexibility and reduces the time loss. There will be no chance for a proxy.

To detect the face segment from the video frame.

To record the attendance of the identified student.

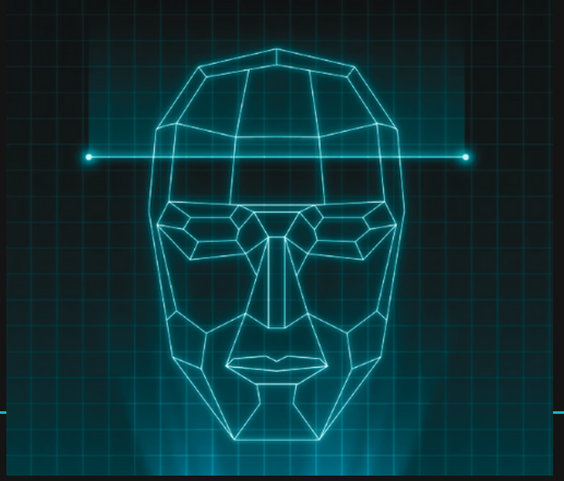
Feasibility



The face recognition attendance system involves complex technical procedures such as capturing images, analyzing facial features, and matching them with existing data. It requires specialized hardware and software to ensure smooth functioning. The feasibility of the system depends on the availability of these resources and their compatibility with each other.

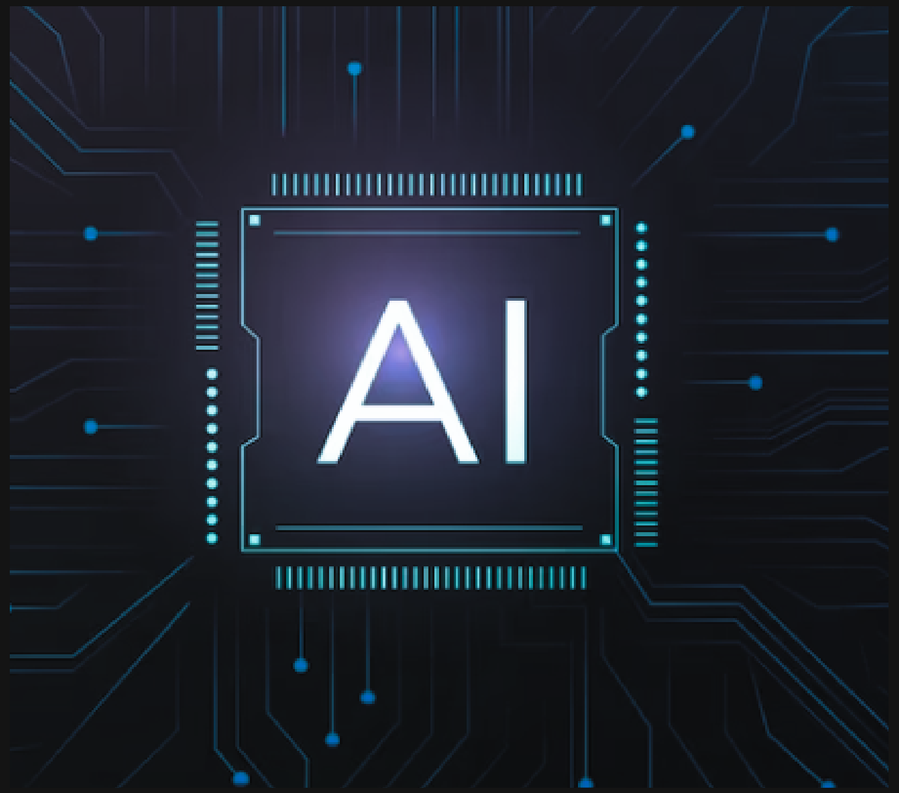
The face recognition attendance system should have minimal environmental impact. The system should be energy-efficient and should not use materials that are harmful to the environment.

PROPOSED SYSTEM



- All the students of the class must register themselves by entering the required details and then their images will be captured and stored in the dataset.
- The faces detected will be compared with images present in the dataset. If match found, attendance will be marked for the respective student.
- The face of the student needs to be captured in such a manner that all the feature of the students' face needs to be detected, even the seating and the posture of the student need to be recognized. There is no need for the teacher to manually take attendance in the class
- Hardware requirements • Laptop with 8 GB RAM or above • Camera 720p or above
- Software requirements • Visual Studio Code • Microsoft Office • Tkinter

Algorithms & Packages used



Haar cascade Algorithm

OpenCV Library

NumPy package

Pandas Library

Tkinter Module

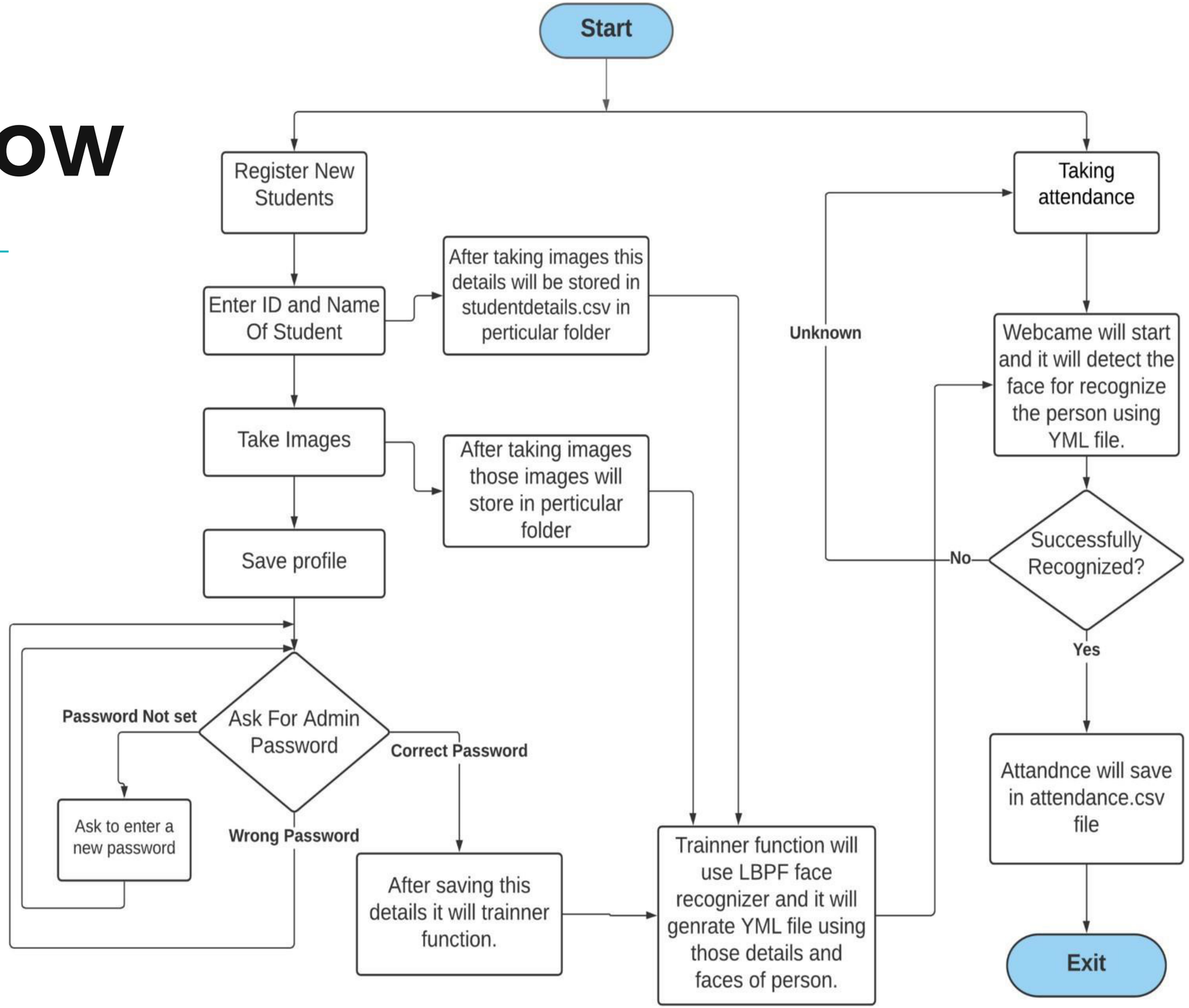
Time Module

Date Time Module

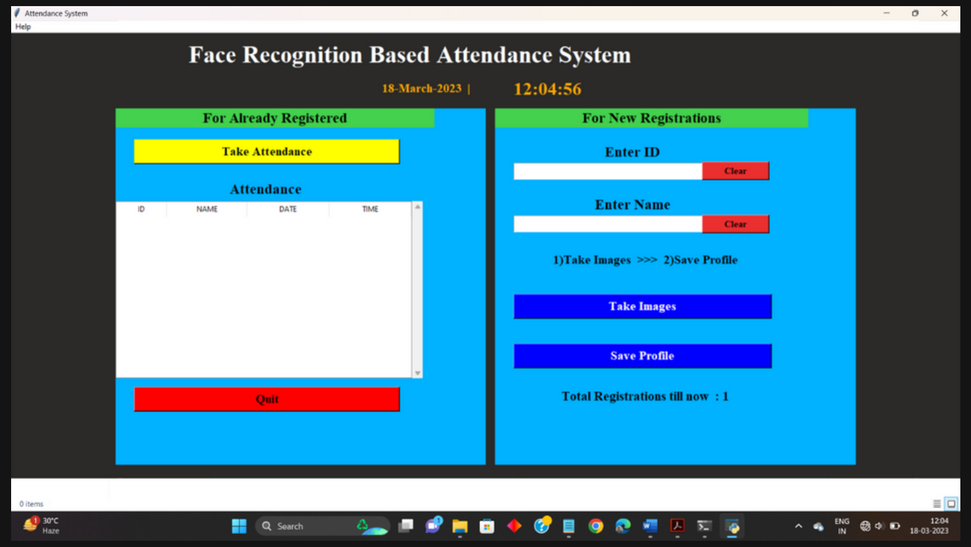
ABSTRACT

We are living in a world where everything is automated and linked online. The internet of things, image processing, and machine learning are evolving day by day. Many systems have been completely changed due to this evolve to achieve more accurate results. The attendance system is a typical example of this transition, starting from the traditional signature on a paper sheet to face recognition. This Project proposes a method of developing a comprehensive embedded class attendance system using facial recognition with showing whether the face of the person is the student for that specified class or not. The system is based on the machine learning algorithm which is to be implemented on python language and using computer/laptop camera for the input image of the students or a normal outer camera can also be used which has to be connected to the system which is programmed to handle the face recognition by implementing the Local Binary Patterns algorithm LBPs.

System Flow


Start
Register New Students
Enter ID and Name Of Student
After taking images this details will be stored in studentdetails.csv in perticular folder
Take Images
After taking images those images will store in perticular folder
Save profile
Password Not set
Ask For Admin Password
Correct Password
Wrong Password
Ask to enter a new password
After saving this details it will trainner function.
Trainner function will use LBPF face recognizer and it will genrate YML file using those details and faces of person.
Taking attendance
Unknown
Webcame will start and it will detect the face for recognize the person using YML file.
No
Successfully Recognized?
Yes
Attandnce will save in attendance.csv file
Exit

RESULT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12:04:56
For Already Registered
Take Attendance
Attendance
ID
NAME
DATE
TIME
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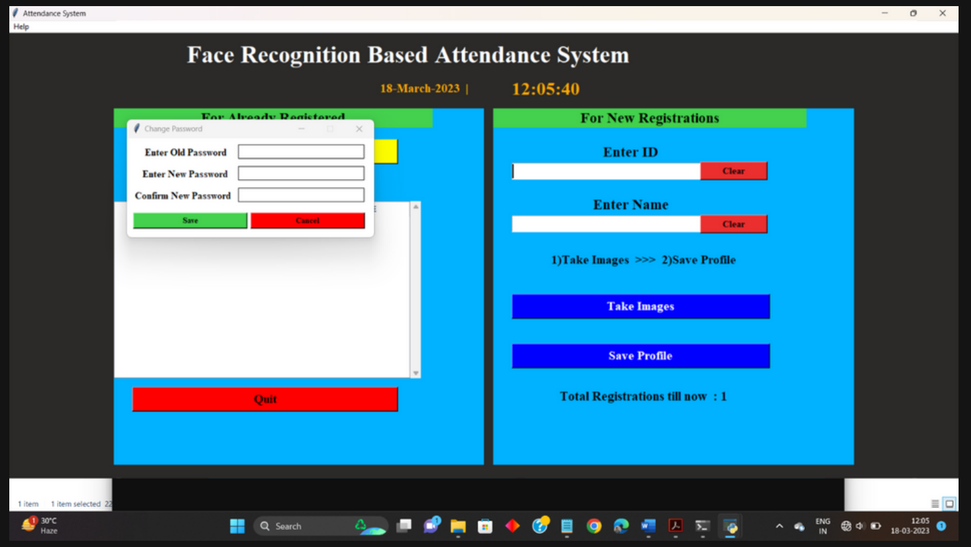
For New Registrations
Enter ID
Clear
Enter Name
Clear
1)Take Images >>> 2)Save Profile
Take Images
Save Profile
Total Registrations till now : 1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Enter Old Password
Enter New Password
Confirm New Password
Save
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Enter ID
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Enter Name
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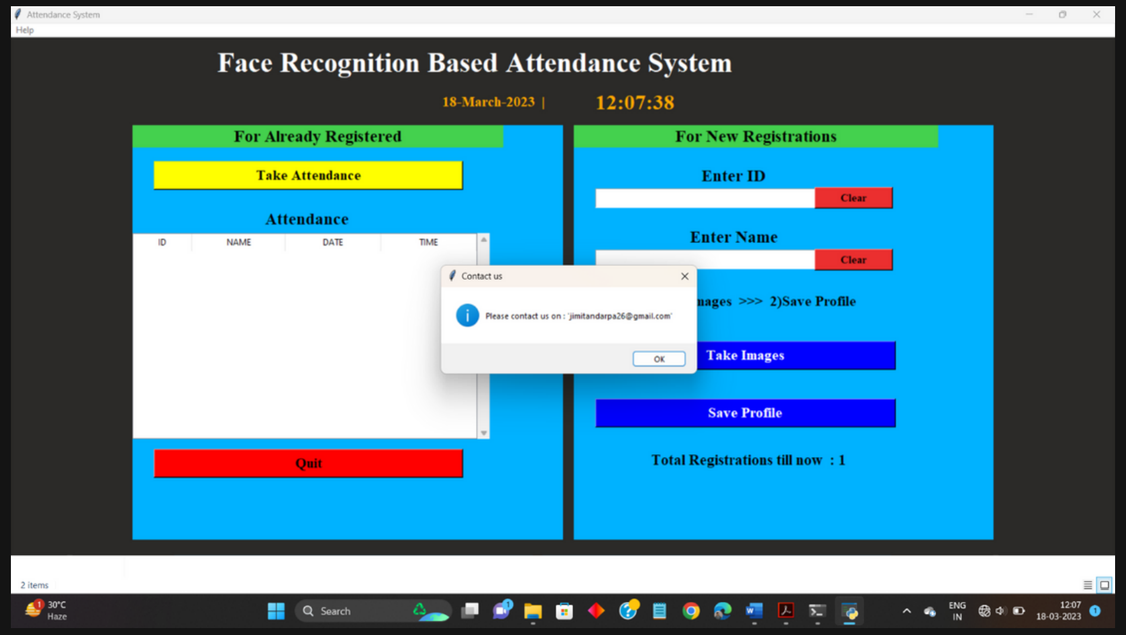
1)Take Images >>> 2)Save Profile
Take Images
Save Profile
Total Registrations till now : 1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18-March-2023 | 12:07:38
For Already Registered
Take Attendance
Attendance
ID NAME DATE TIME
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For New Registrations
Enter ID
Clear
Enter Name
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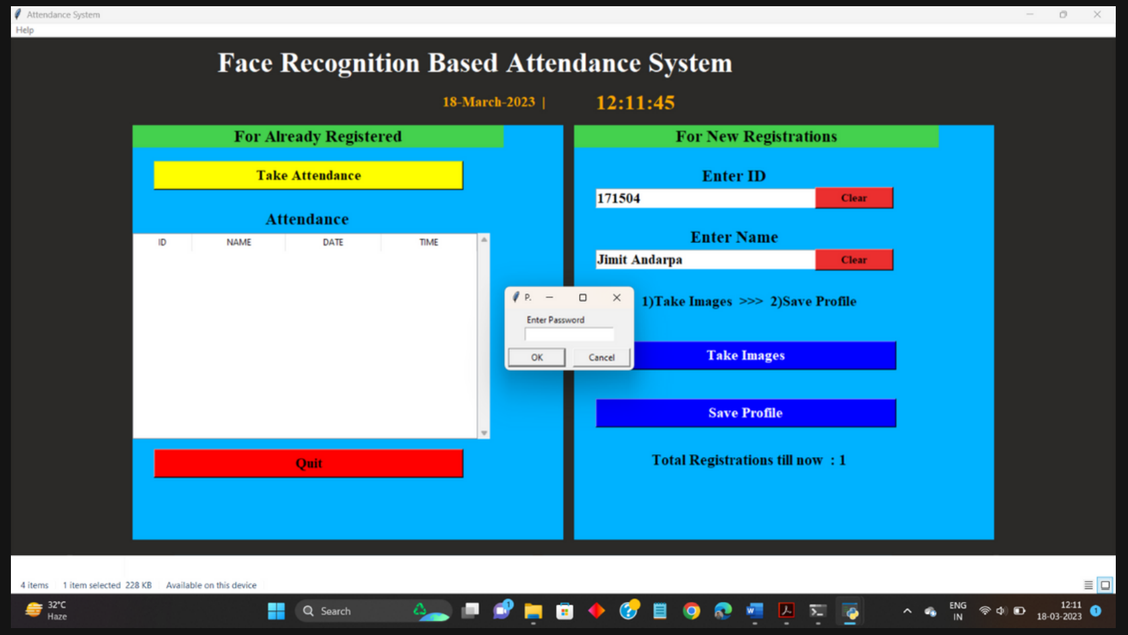
nages >>> 2)Save Profile
Take Images
Save Profile
Total Registrations till now : 1
Contact us
Please contact us on : 'jimitandarpa26@gmail.com'
OK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Face Recognition Based Attendance System
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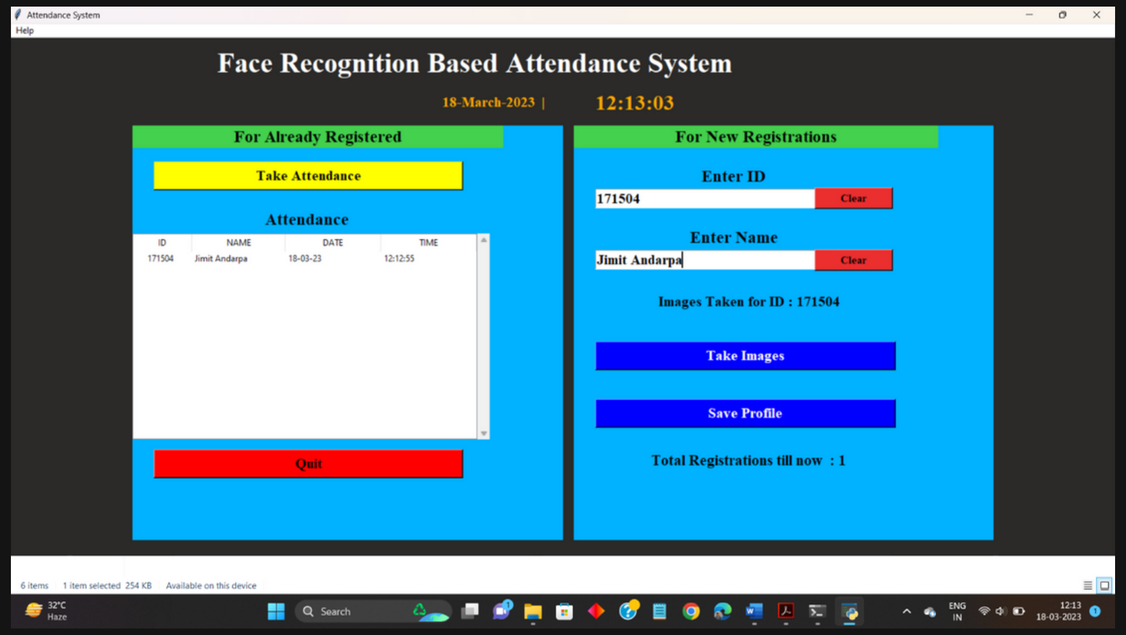
For Already Registered
Take Attendance
Attendance
ID NAME DATE TIME
Quit
For New Registrations
Enter ID
171504
Clear
Enter Name
Jimit Andarpa
Clear
1)Take Images >>> 2)Save Profile
Take Images
Save Profile
Total Registrations till now : 1
Enter Password
OK
Cancel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For Already Registered
Take Attendance
Attendance
ID NAME DATE TIME
171504 Jimit Andarpa 18-03-23 12:12:55
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171504
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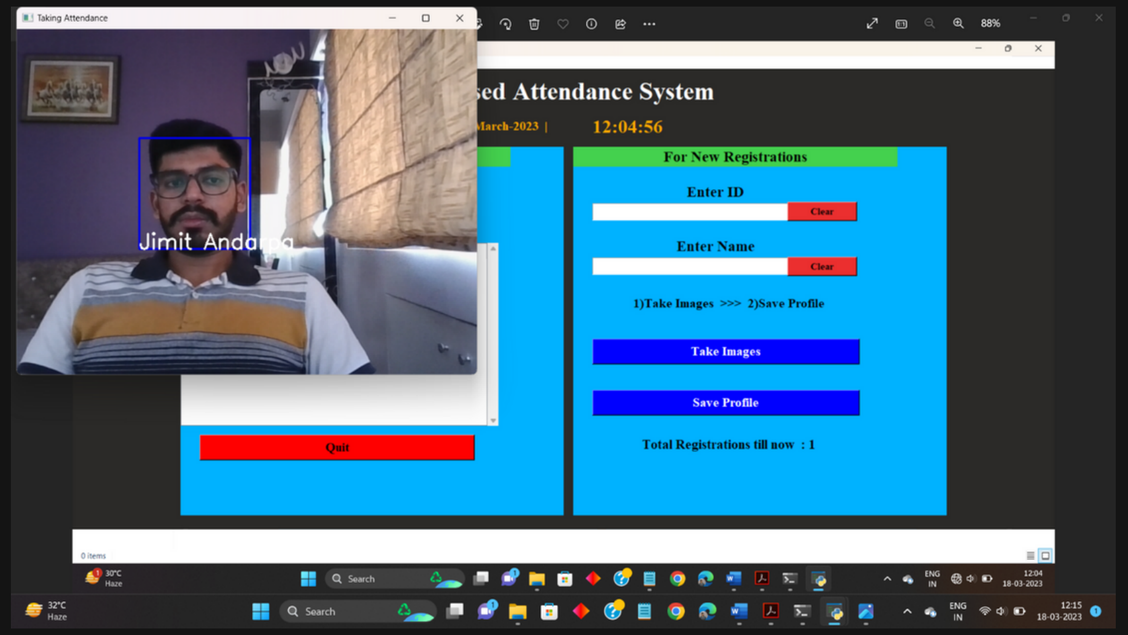
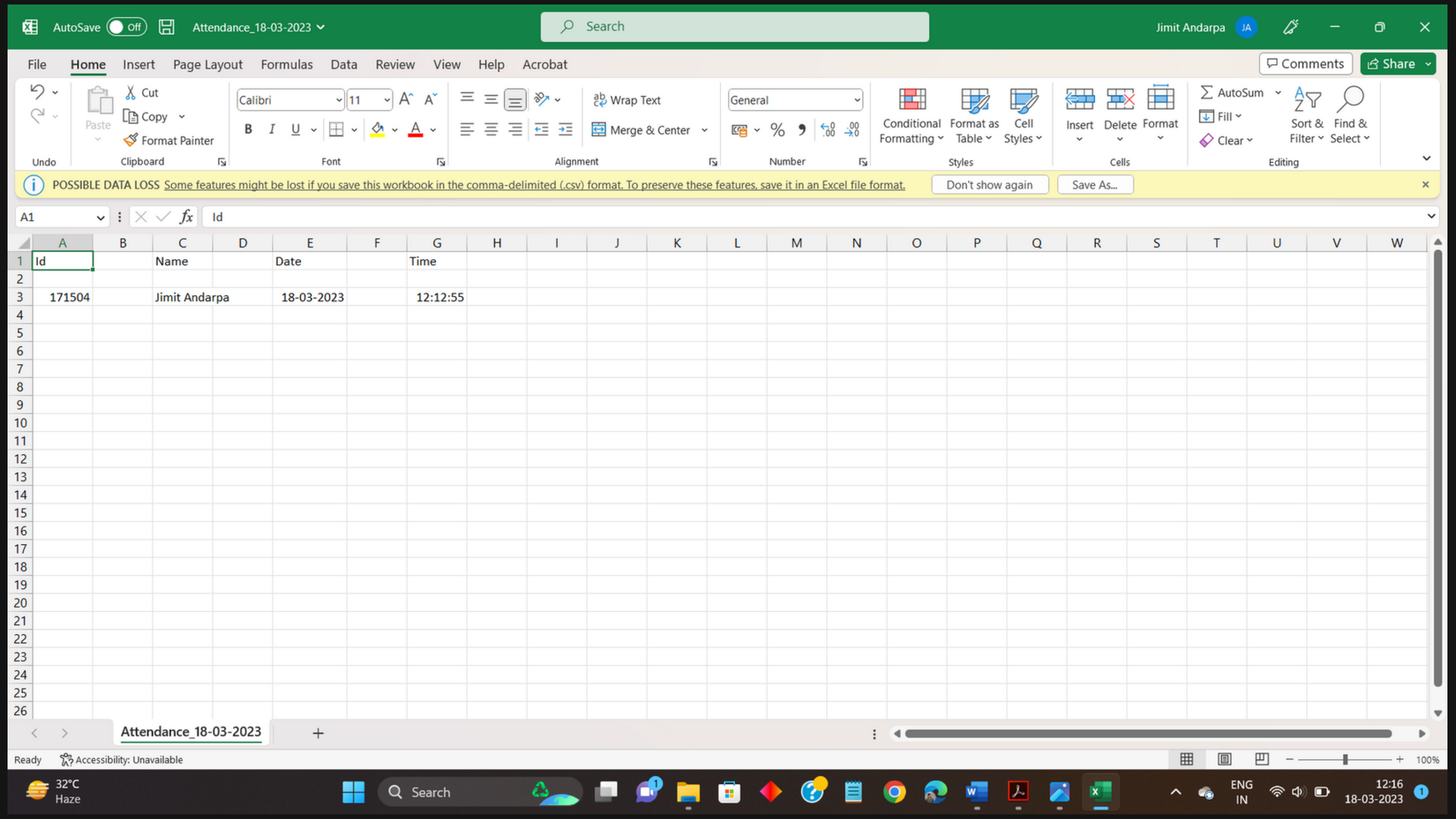
Enter Name
Jimit Andarpa
Clear
Images Taken for ID : 171504
Take Images
Save Profile
Total Registrations till now : 1


Taking Attendance
Jimit Andarpa
sed Attendance System
March-2023 | 12:04:56
Quit
For New Registrations
Enter ID
Clear
Enter Name
Clear
1)Take Images >>> 2)Save Profile
Take Images
Save Profile
Total Registrations till now : 1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Jimit Andarpa JA
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Comments Share
Cut Copy Format Painter Paste
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Wrap Text Merge & Center
General
Conditional Formatting Format as Table Cell Styles
Insert Delete Format
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POSSIBLE DATA LOSS Some features might be lost if you save this workbook in the comma-delimited (.csv) format. To preserve these features, save it in an Excel file format.
Don't show again
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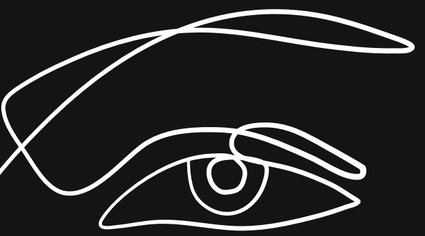
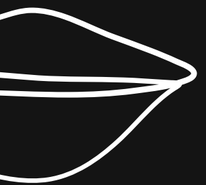
Conclusion





Automated Attendance System has been envisioned for the purpose of reducing the errors that occur in the traditional (manual) attendance taking system. The aim is to automate and make a system that is useful to the organization such as an institute. The efficient and accurate method of attendance in the office environment that can replace the old manual methods. This method is secure enough, reliable and available for use. No need for specialized hardware for installing the system in the office. It can be constructed using a camera and computer. In this system we have implemented an attendance system for a lecture, section or laboratory by which lecturer or teaching assistant can record students' attendance.