

Attendance management using face recognition

Tech used:

- tkinter which is a standard GUI library for python
- OpenCV for taking images and for face recognition wherein Haar cascade classifier algorithm is used
which is an object detection algorithm used to identify faces in this application.
- numpy , pandas, CSV, datetime ,pillow etc for making excels and displaying live clock on the window and etc

Commands for installing all required modules:

(make sure pip is available with python installation)

- pip install tk-tools
- pip install opencv-contrib-python
- pip install datetime
- pip install pytest-shutil
- pip install python-csv
- pip install numpy
- pip install pillow
- pip install pandas
- pip install times

For new registrations password - **TrainingImageLabel folder->psd.txt**

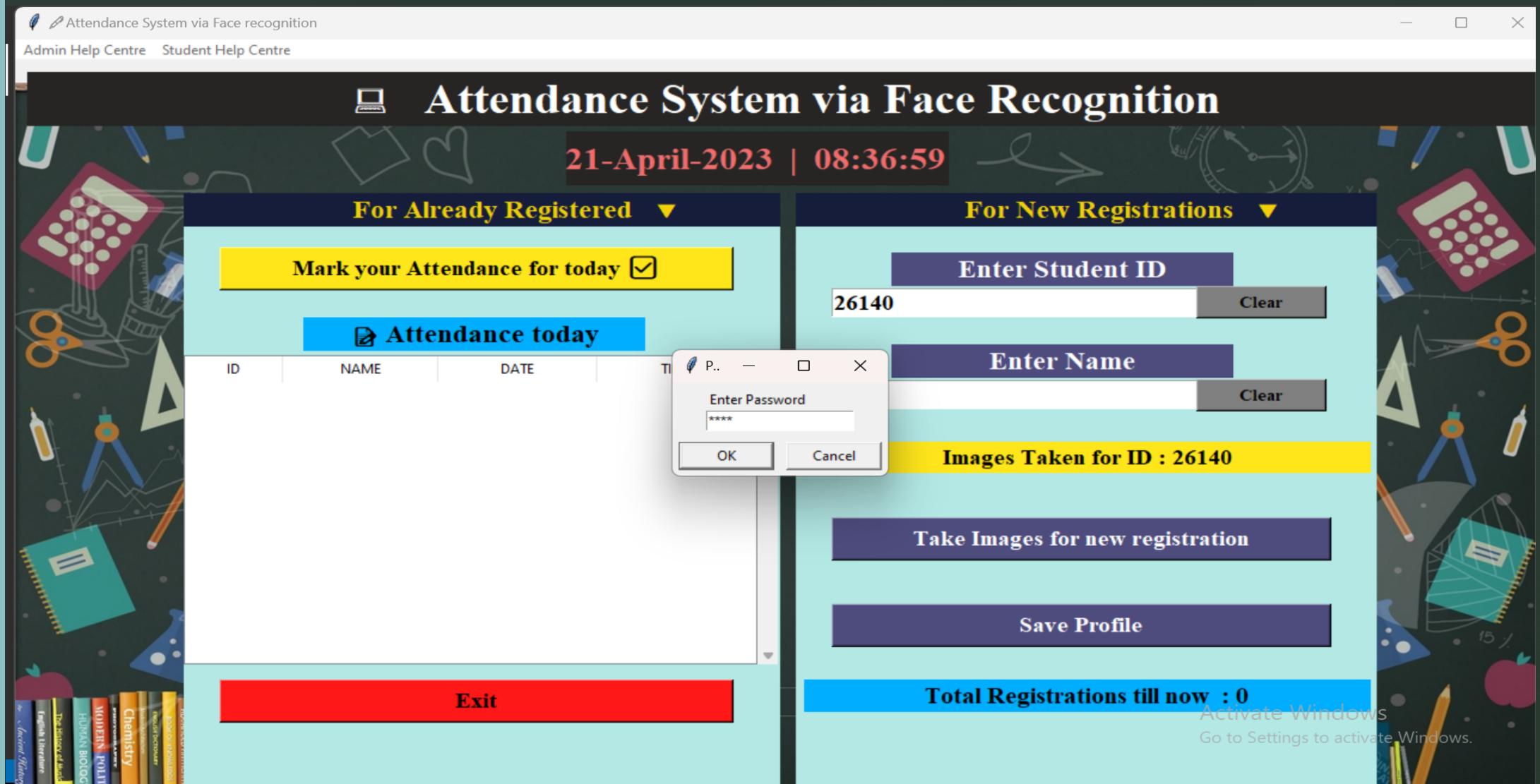
For Admin password - **TrainingImageLabel folder->Admin.txt**

Project Description:

- It's a Python GUI (using tkinter library) integrated attendance system which will be using face recognition for taking attendance . In this application , We have made an attendance system which will use face recognition for taking attendance. It has been integrated with GUI so that it can be easy for anyone to use it .
- Basically using a protected password students/employees which will be registered and then they will be able to mark their attendance everyday on their own.
- Users during their first registration will be asked to take their images and those will be used as training images, so next time whenever that user wants to mark his/her attendance their present image will be compared to the saved images and then attendance will be marked.
- If the attendance of a user is already marked and if the user forgot and again tried to mark their attendance then it will show a message that attendance is already marked and hence duplicates can be avoided.
- The password which need to be entered will be protected and can only be changed if admin wants to change it through admin password check.

Features:

1. It's interactive with GUI support, password is asked while a user is newly registering.



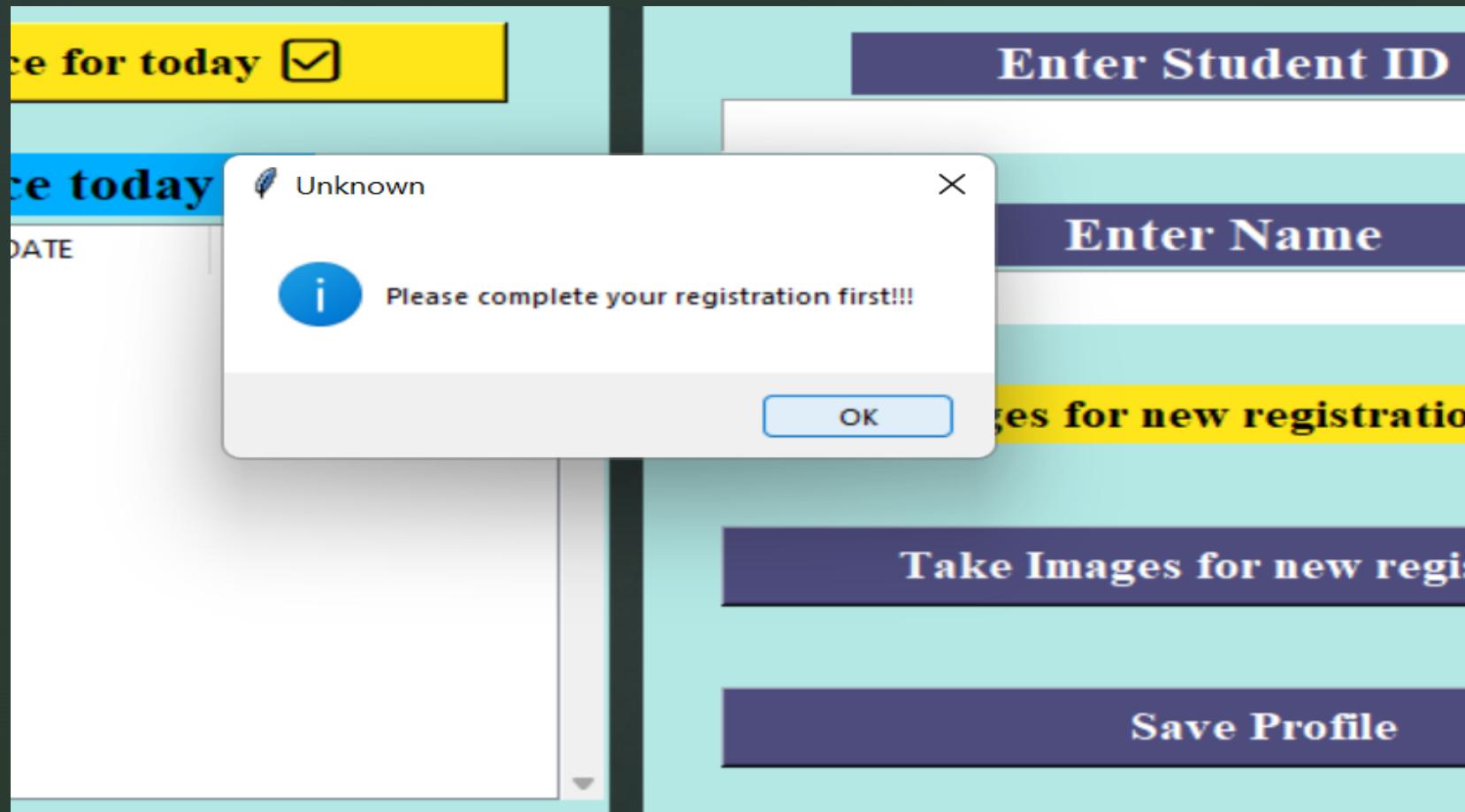
2. When a new user is registered, a CSV file(can be opened as a Excel spreadsheet) where in all the details entered will be as it is stored.

Screenshot of Microsoft Excel showing a CSV file named "StudentDetails". The file contains student data with columns for SNo, ID, and NAME. The data is as follows:

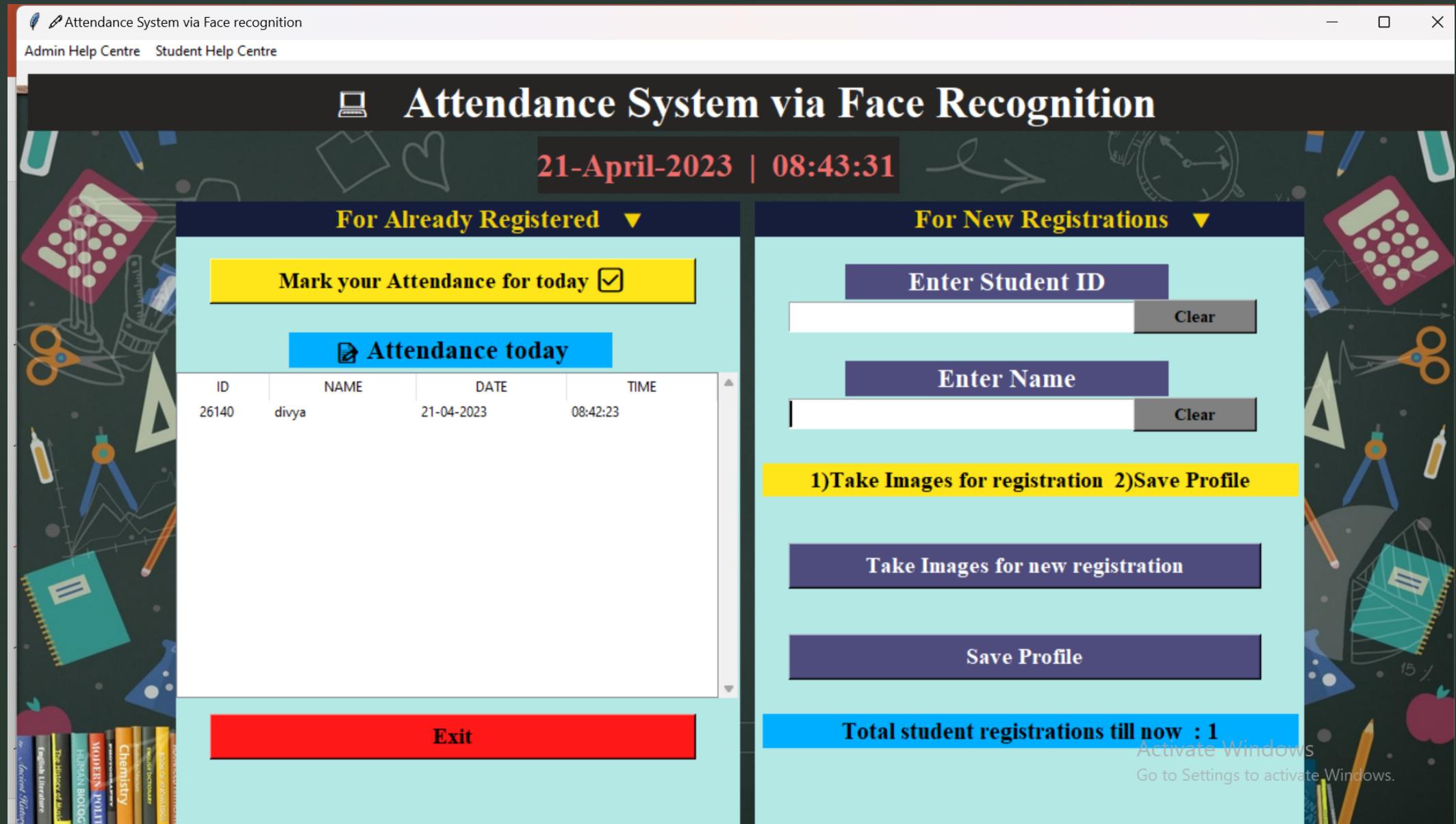
| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S |
|----|-----|---|-------|---|-------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SNo | | ID | | NAME | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | |
| 3 | 1 | | 26140 | | divya | | | | | | | | | | | | | | |
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The screenshot shows the Microsoft Excel ribbon at the top with tabs like File, Home, Insert, Page Layout, Formulas, Data, Review, View, Help, and Tell me what you want to do. The Home tab is selected. The ribbon also displays the current file name "StudentDetails - Excel" and the user "Divya Durga". The main workspace shows the data in a grid format with columns labeled A through S. The status bar at the bottom indicates "Ready" and "Accessibility: Unavailable". A watermark for "Activate Windows" and "Go to Settings to activate Windows." is visible in the bottom right corner.

3. Before getting registered if the user tries to mark his/her attendance then it will pop up a message saying 'Please complete your registration first!!!' by which the person will be notified very quickly that he/she need to register without wasting memory.



4. Live attendance is shown in a tabular form having id, name, date and time as columns just after taking attendance.



5. Simultaneously a CSV file(can be opened as Excel spreadsheet) will be created ‘every day’ where in the attendance for that day, having the users login time and their details.Hence will very easy to check attendance reports on whole for a week or a month as they were present date-wise.

Attendance_21-04-2023 - Excel

Divya Durga DD

A3

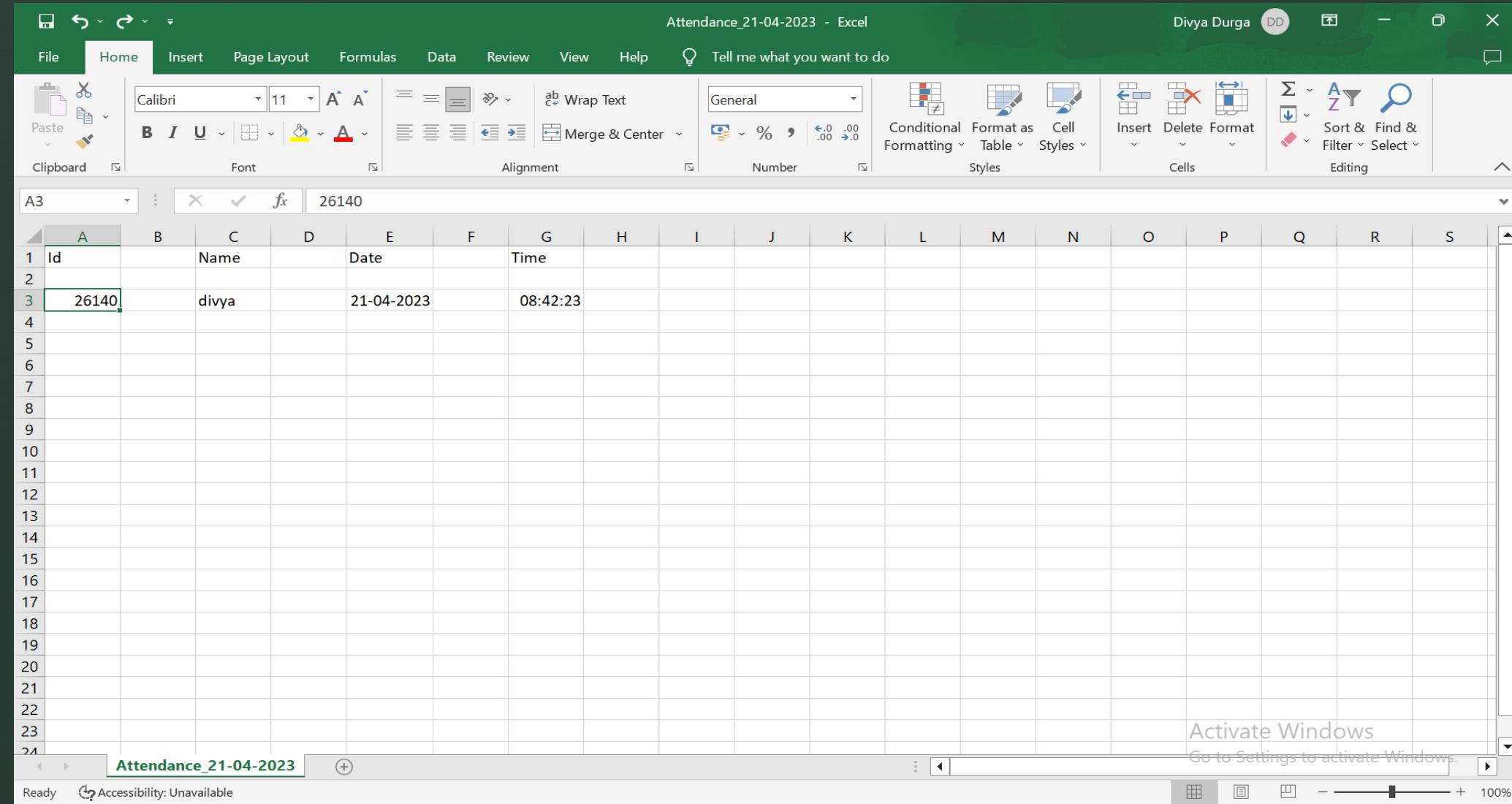
| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S |
|----|-------|---|-------|---|------------|---|----------|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Id | | Name | | Date | | Time | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | |
| 3 | 26140 | | divya | | 21-04-2023 | | 08:42:23 | | | | | | | | | | | | |
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Activate Windows
Go to Settings to activate Windows.

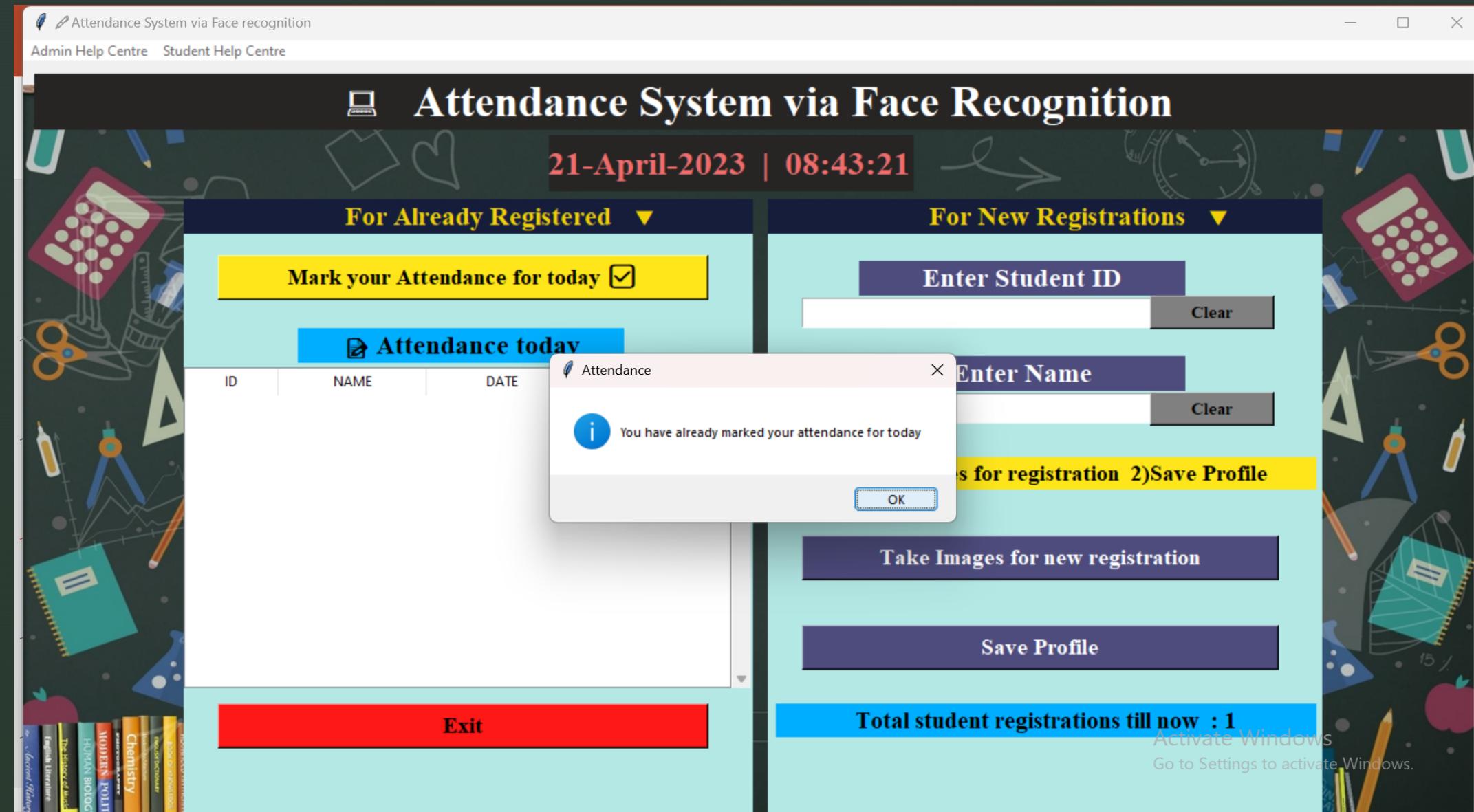
Attendance_21-04-2023

Ready Accessibility: Unavailable

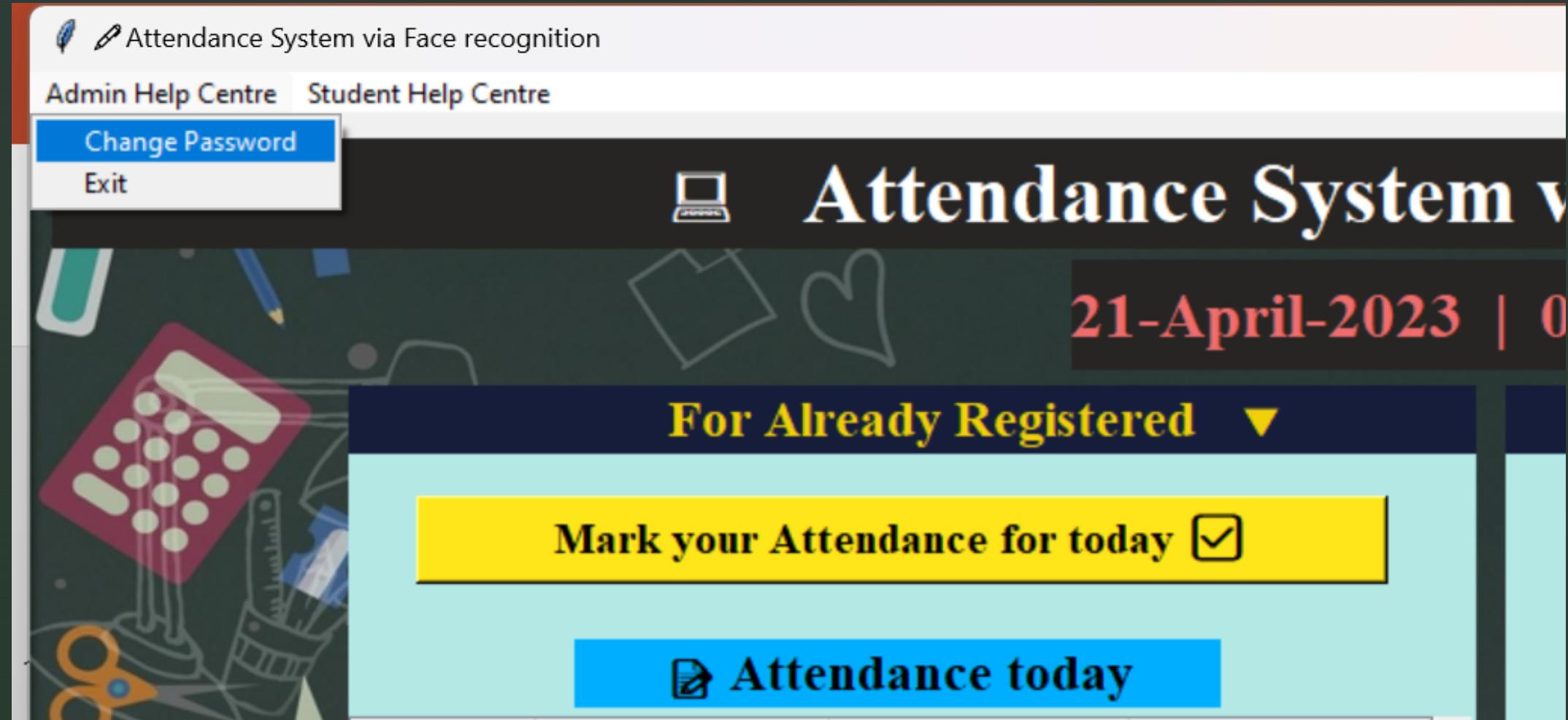
100%

A screenshot of Microsoft Excel showing a single row of attendance data in a CSV file. The file is titled "Attendance_21-04-2023". The data is organized into columns: Id, Name, Date, and Time. Row 1 contains the column headers: "Id", "Name", "Date", and "Time". Row 3 contains the actual data: "26140", "divya", "21-04-2023", and "08:42:23". The rest of the rows are empty. The Excel ribbon is visible at the top, showing the Home tab is selected. The status bar at the bottom shows "Ready" and "Accessibility: Unavailable". A watermark for "Activate Windows" is visible in the background.

6. If the attendance of the user has already been marked for that day then it pops up a message as below.....



7.'Admin help centre' option is provided in menubar in case if the admin wants to change the protected password used for registrations then he/she need to enter admin password there and later can change the password.



Attendance System via Face recognition

Admin Help Centre Student Help Centre

Change Password

Enter Old Password

Enter New Password

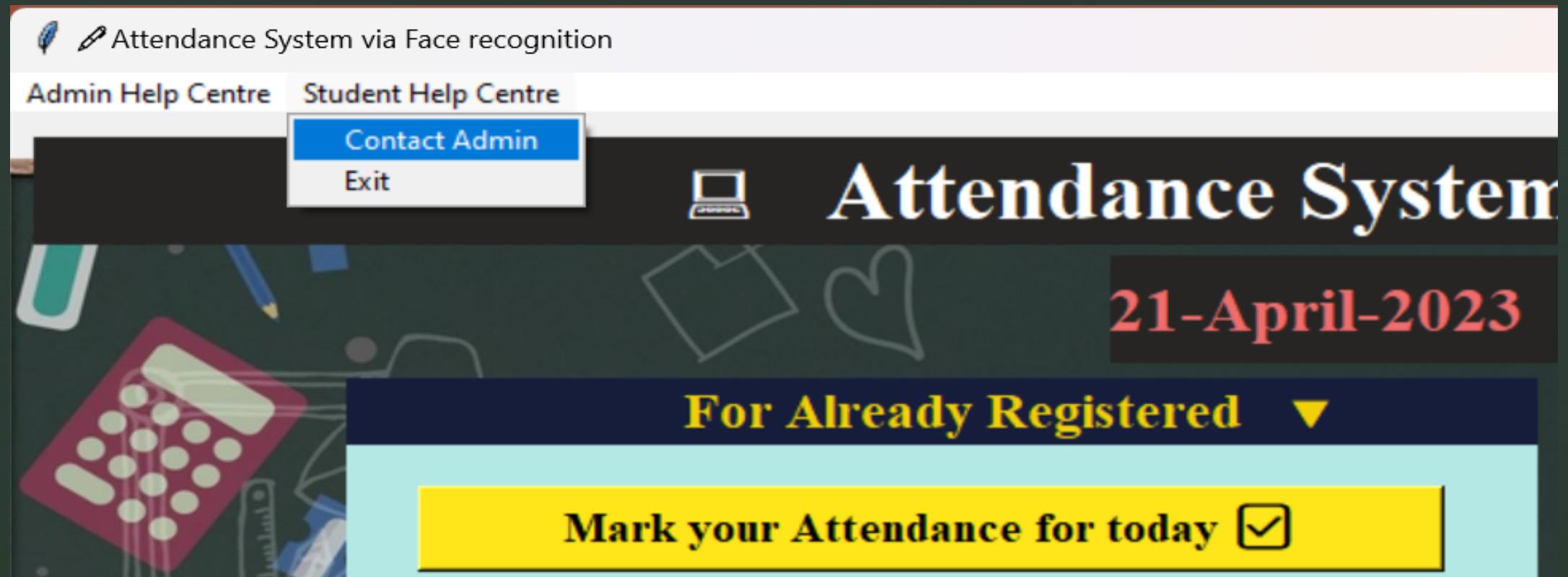
Confirm New Password

Save

Cancel

MARK your Attendance for today

8.'Student help centre' also provided where the students can get a mail id to contact the admin(teacher) which will be popped up when he/she choose to contact admin option.

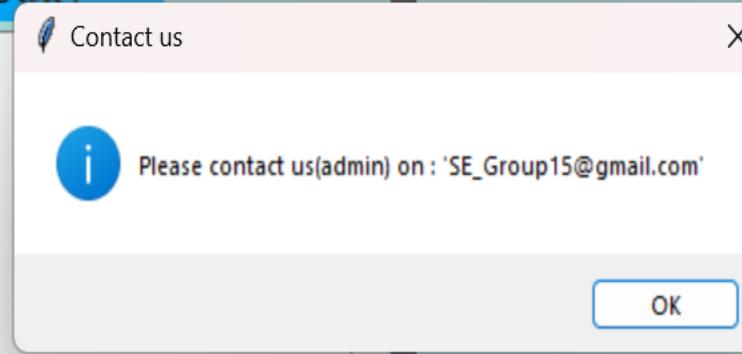


For Already Registered ▼

Mark your Attendance for today

 Attendance today

| ID | NAME | DATE |
|----|------|------|
|----|------|------|



For New Registrations ▼

Enter Student ID

 Clear

Enter Name

 Clear

1) Enter new registration 2)Save Profile

Future scope of the project :

- In these days technology being improved day to day and we are able to see new things everyday.
- What matters is that how long one application or a device being used.
- So in my opinion as long as education/employment persists the concept of tracking attendance will always have its value.
- The more simpler we make it for the users the more comfortable will be their work. So smart attendance tracking which uses the face recognition is a simple but still comfortable application one can use.
- There will be certainly more features that can be added anytime which will make this application much more comfortable to use and easy to manage.