AUTOMATED ATTENDANCE CAPTURING SYSTEM USING FACE RECOGNITION TECHNIQUES

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Abstract : Automatic face recognition (AFR) technologies have made many improvements in the changing world. Smart Attendance using Real- Time Face Recognition is a real-world solution which comes with day to day activities of handling student attendance system. Face recognition-based attendance system is a process of recognizing the students face for taking attendance by using face biometrics based on high - definition monitor video and other information technology. In my face recognition project, a computer system will be able to find and recognize human faces fast and precisely in images or videos that are being captured through a surveillance camera. Numerous algorithms and techniques have been developed for improving the performance of face recognition but the concept to be implemented here is Deep Learning. It helps in conversion of the frames of the video into images so that the face of the student can be easily recognized for their attendance so that the attendance database can be easily reflected automatically.

Keywords: Real time attendance, face recognition ,RFID ,NumPy

1 INTRODUCTION

Attendance tracking is a time-consuming operation that must be done in a classroom during a lecture. There will always be a chance of proxy attendance because the lecture had an exceptionally high number of students in attendance (s). Conventional techniques of attendance marking have been difficult to implement. Standard biometrics like fingerprints and RFID tags have been used extensively in recent years to address the issue of automatic attendance marking, but these methods lack the element of reliability. In this project proposal, face detection and recognition algorithms are used to present an automated attendance marking and management system. Making the attendance marking and management system effective is the key goal of this effort.

2 PROPOSED SYSTEM

Our goal in developing this project is to make the attendance system system more effective, stop methods and means of proxies, and save time that would otherwise be lost in the lecture. This proposed system can be used to create an attendance system using facial recognition as the traditional method, i.e., pen and paper, is not only time consuming and burdensome but is also prone to proxies and manipulation.

3 TECHNOLOGIES USED

3.1 Thonny

A free Python Integrated Development Environment (IDE) called Thonny was created specifically with the beginner Pythonista in mind. It contains a built-in debugger that might be useful when you encounter ugly issues and, among other fantastic capabilities, it allows you to perform step through expression evaluation.
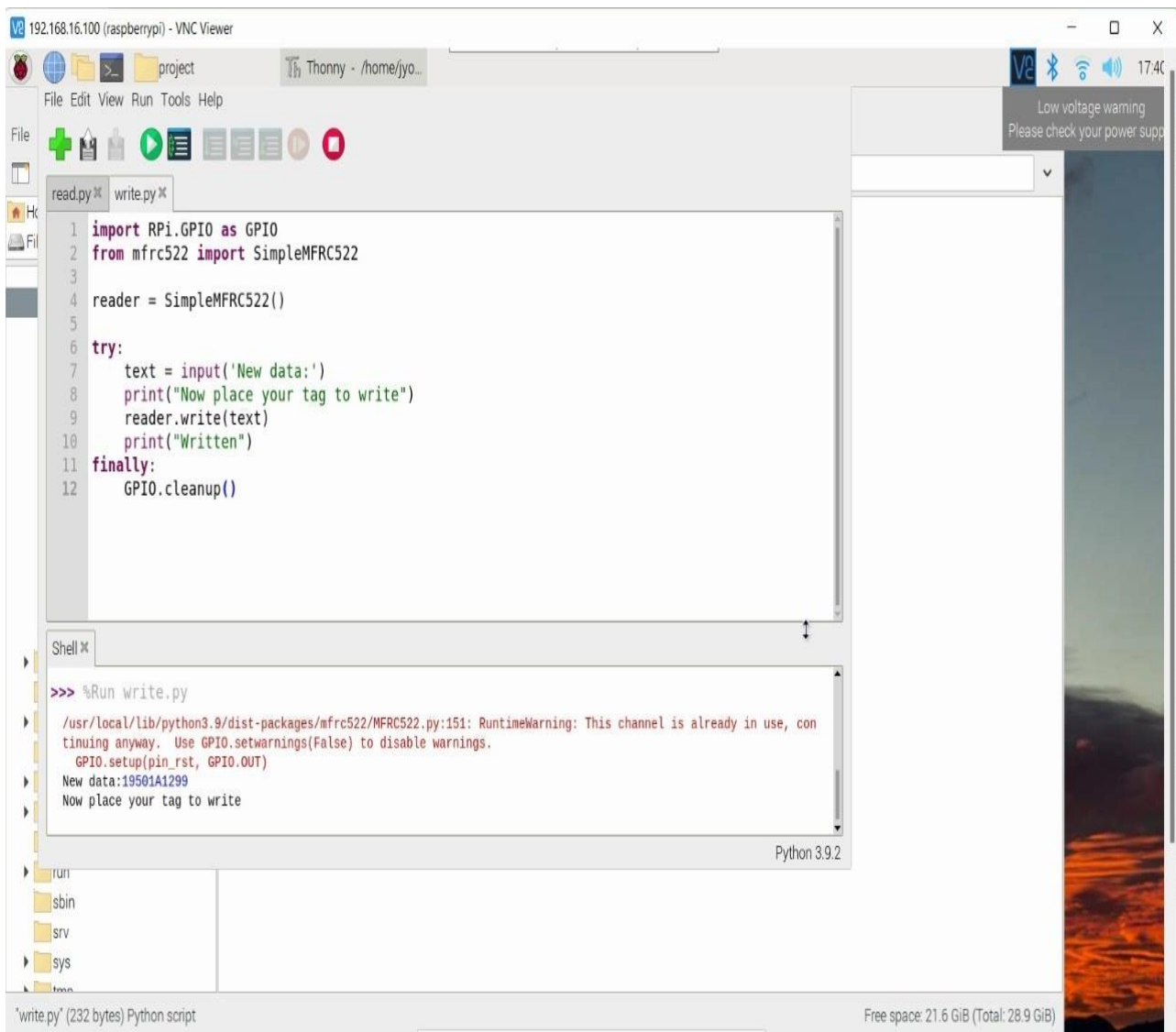
3.2 Python Libraries

The libraries of python used here are numpy, open CV, face recognition . The numpy is to operate the arrays and matrices ,Open CV (Open Source Computer Vision Library) is an open source computer vision and machine learning software library and Open CV was built to provide a common infrastructure for computer vision applications,face recognition is used to identify images.

3.3 MySQL

MySQL is the world's most popular open source database is that it provides comprehensive support for every application development need. Within the database, support can be found for stored procedures, triggers, functions, views, cursors, ANSI-standard SQL, and more. It is **a** Relational Database Management System **(RDBMS)** that offers a variety of

features, including: It allows us to use tables, rows, columns, and indexes and to perform database operations on them. Tables (collection of rows and columns), also known as relations, are used to construct database relationships
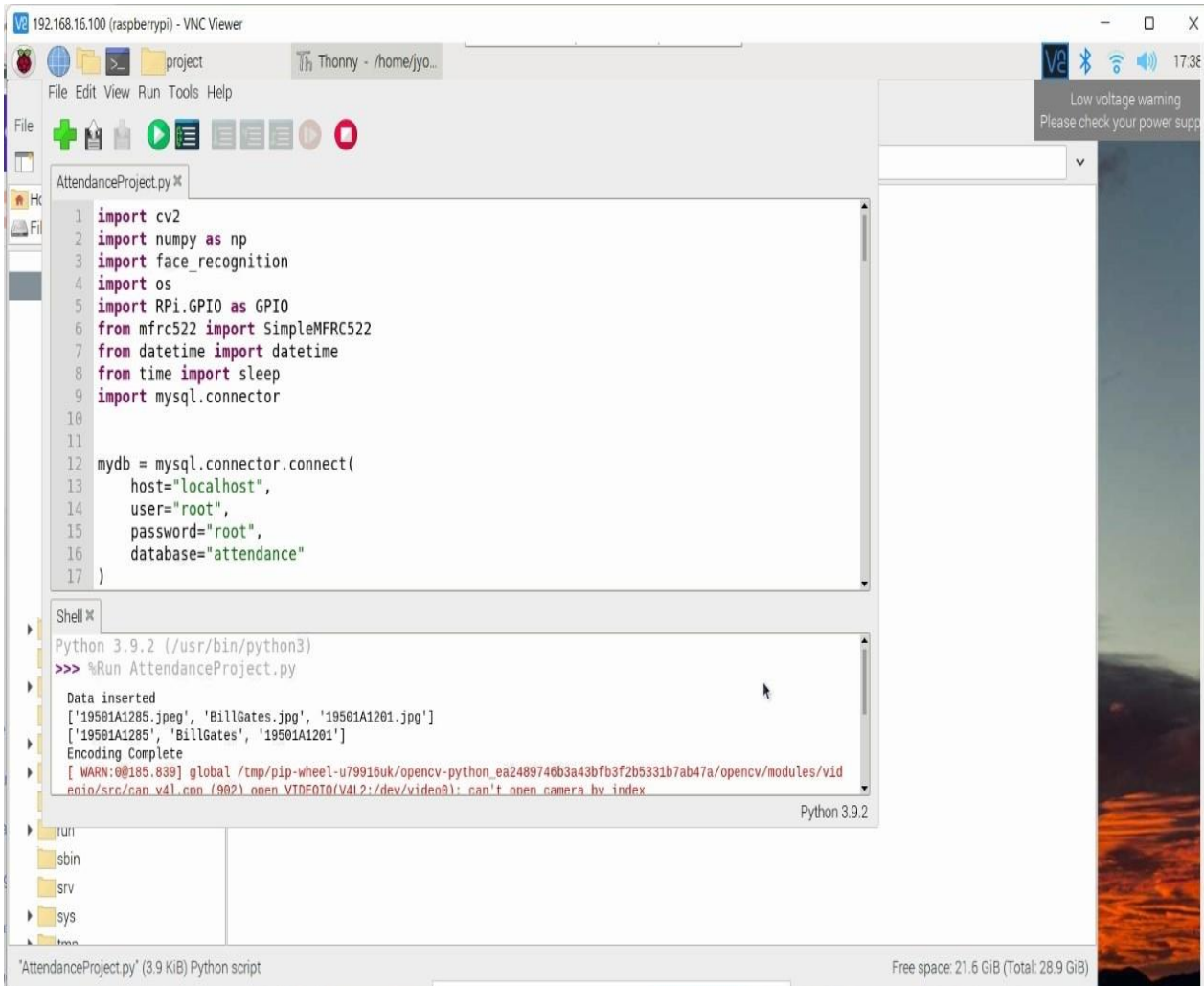
4 RESULTS AND DISCUSSION

4.1 creating dataset

The above figure gives the description about writing the data into the dataset and storing the data.

4.2 Encoding the images and updating dataset

The figure gives the description about displaying the data in dataset encoding the images available in the dataset and matching the real time face identified and updating the attendance in the database.
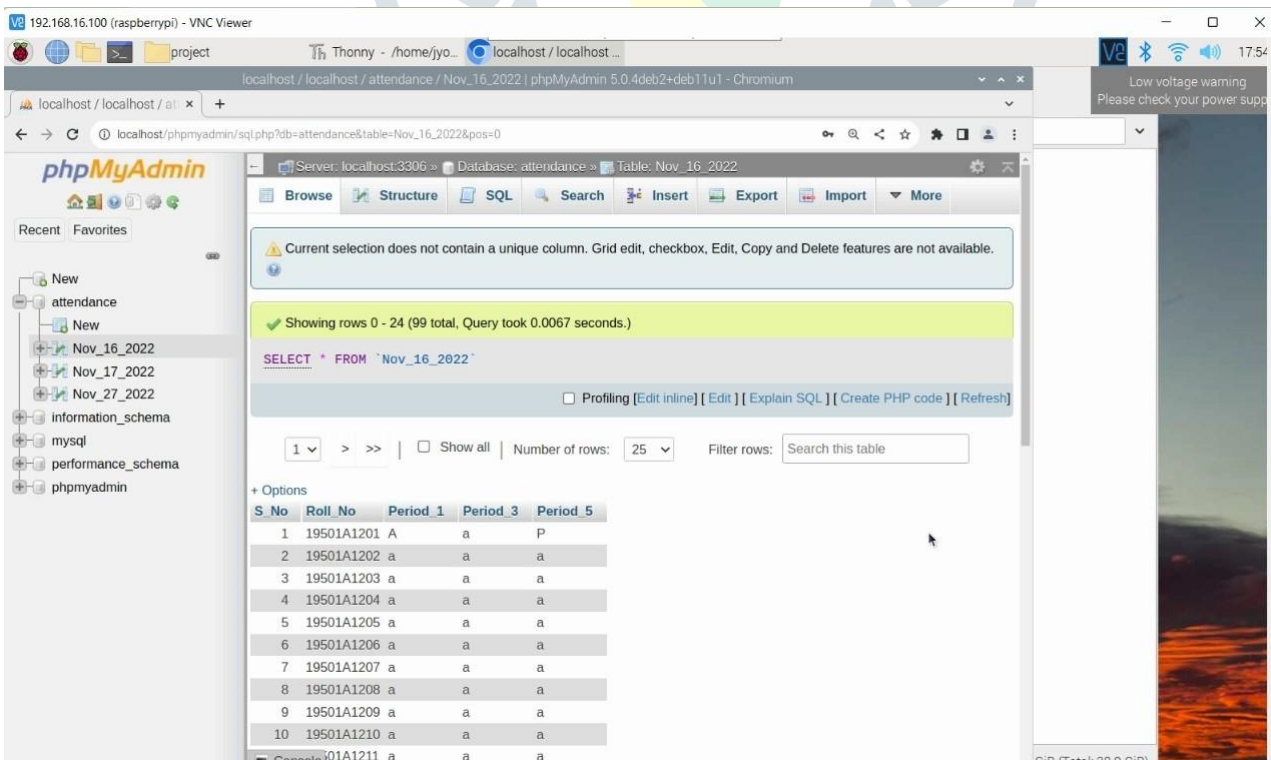
4.3 Resulting data stored in the form of tables

The above figure gives an overview of the columns of the dataset that is stored for attendance .

4.4 Description of the resulting table

The table above gives the description of the resulting table that is created automatically and the table gives the data about the number of periods and the corresponding attendance of the student.

5 Future scope

This can be further extended by connecting it with the PIR sensor by which we can detect the movement of objects(students) .with the help of PIR sensor whenever a person enters into the classroom it is detected and whenever the person leaves the classroom it notes the time of incoming and time of outgoing .In this way it makes the system more efficient and secure.
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6 Conclusion

This project is to make the attendance system efficient, stop techniques and means of proxies, and save time that would otherwise be lost in the lecture. These sorts of real-time attendance monitoring systems are required to reduce the time
required to take the attendance and boost the security.

7 REFERENCES

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