FORM 4: RESULTS AND CONCLUSION

TEAM NO: 08

PROJECT TITLE: AUTOMATED FACE RECOGNITION ATTENDANCE SYSTEM USING DEEP LEARNING

EXPERIMENT ENVIRONMENT:

- **PyCharm IDE:**

PyCharm is a powerful integrated development environment (IDE) for Python, offering features like intelligent code completion, debugging, and project navigation. Its user-friendly interface and robust tools make it a preferred choice for developers working on Python projects.

- **MYSQL Database:**

MySQL is an open-source relational database management system (RDBMS) that stores and organizes data. It uses a structured query language (SQL) for managing and manipulating databases, making it widely used for web applications and various software systems.

- **Python Language:**

Python is a high-level, interpreted programming language known for its simplicity and readability. It supports multiple paradigms, including procedural, object-oriented, and functional programming. Python is widely used in web development, data science, artificial intelligence, and automation, making it a versatile and popular choice for programmers.

- Along with these we will be using the libraries like OpenCV and algorithms like CNN algorithm, KNN algorithm.
- We will be also using the webcam which is used for capturing the images of the student.

EXPERIMENT:

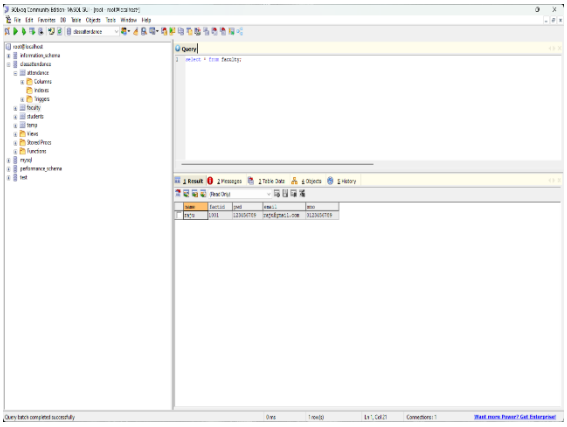
We have created the application-based project. In which we have created the project using the python as the main language, CNN and KNN algorithms for the project. The project consists of frontend and backend work.

FINDINGS 1:

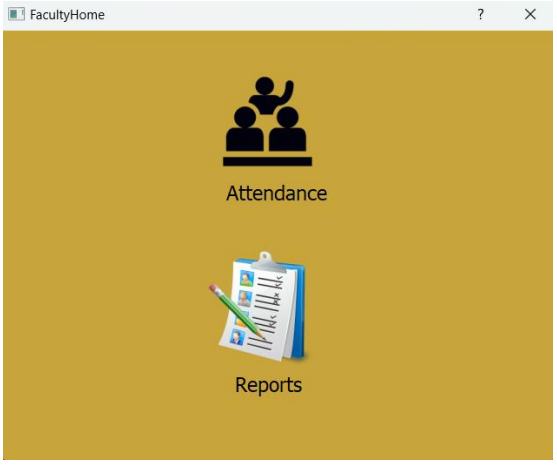
We are creating the front-end application like login page, faculty register page, attendance taking page, student register page, reports page, view students page, student details page. We are using MySQL database for storing the data.

We are able to correctly register the faculty's data and insert this data into the database. By using this data, the faculty is able to login into his page where he can take the attendance of the students.

Faculty Login Page



Faculty Database



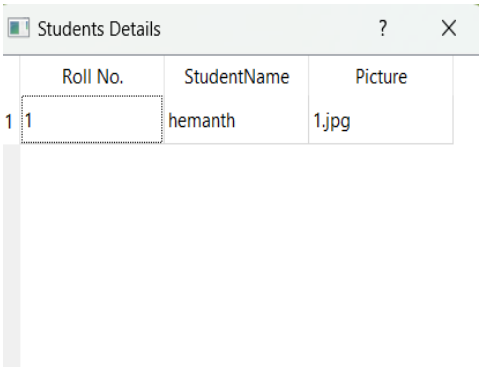
Faculty Home Page

Faculty Register Page

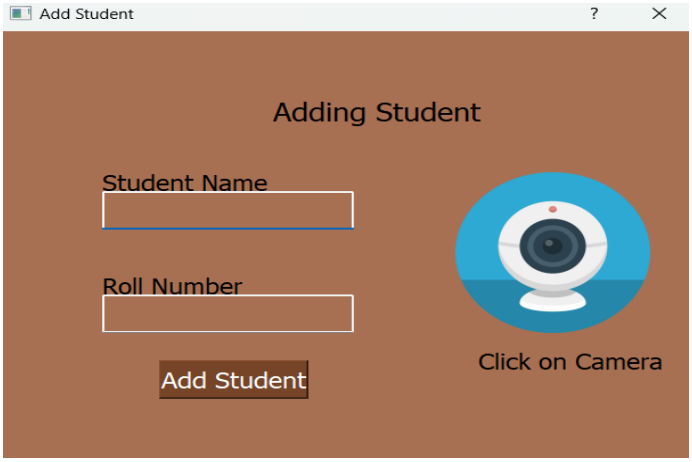
FINDINGS 2:

We are creating the front-end application like login page, faculty register page, attendance taking page, student register page, reports page, view students page, student details page. We are using MySQL database for storing the data.

We are able to correctly register the student's data and insert this data into the database. By registering the data into the database, the faculty will be able to access the student's data and take the attendance of the student by capturing image.



Student Details

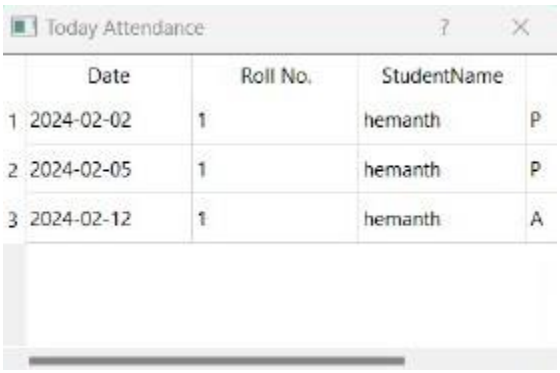


Add Student Page

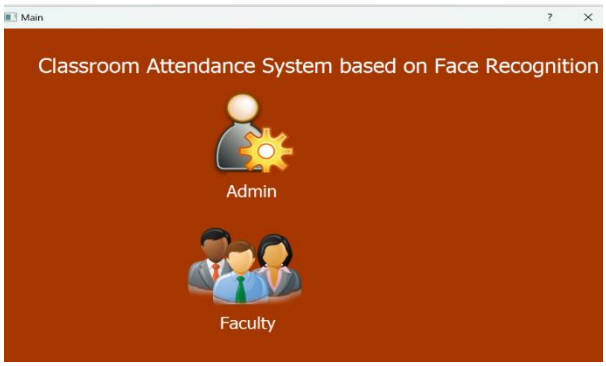
FINDINGS 3:

We are creating the front-end application like login page, faculty register page, attendance taking page, student register page, reports page, view students page, student details page. We are using MySQL database for storing the data.

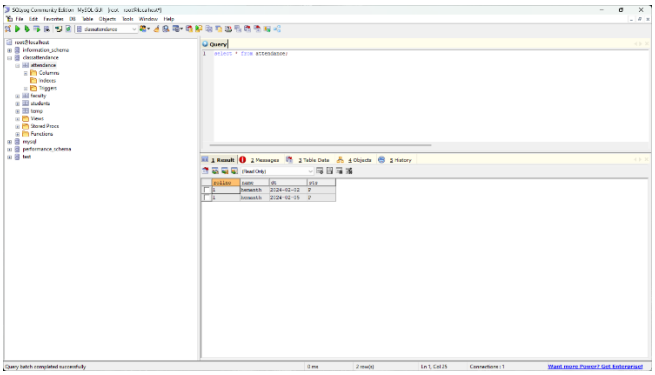
We are able to correctly show the students attendance when the faculty clicks on the finish button. The faculty is able to see the attendance data and we are giving the flexibility to the faculty to download the attendance in the form of excel sheet.



Today's Attendance Report



Main Page



Attendance Database

PARAMETER COMPARISION TABLE:

PARAMETER	PREVIOUS METHODS	PROPOSED METHOD
Algorithm training	Support Vector Machine (SVM) AND Neural Network Method	The main problem by using the previous method is that the SVM algorithm has more-false positive rate. So, in order to decrease that rate, we will be using the KNN algorithm. The previous methods have used the deep learning techniques like HOG and LDPH algorithms but now we will be using the CNN

		algorithm which is best for image detection.
Front End development	Convolutional Neural Networks (CNN)	They have only used the CNN algorithm for the detection of the image. But we will be using the CNN and KNN algorithms for the better accuracy. We will be also developing the front-end application for the project. We will be also using the OpenCV to capture the images.

FINAL CONCLUSION STATEMENTS:

An 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 an organization such as university. The efficient and accurate method of attendance in the office environment can replace the old manual methods. This method is secure enough, reliable, and available for use. It can be constructed using a camera and computer. It saves time and effort, especially if it is a lecture with a huge number of students. An automated Attendance system has been envisioned for the purpose of reducing the drawbacks of the traditional attendance system. This attendance system demonstrates the use of image-processing techniques in the classroom. This system can not only merely help in the attendance system, but also improve the goodwill of an institution.