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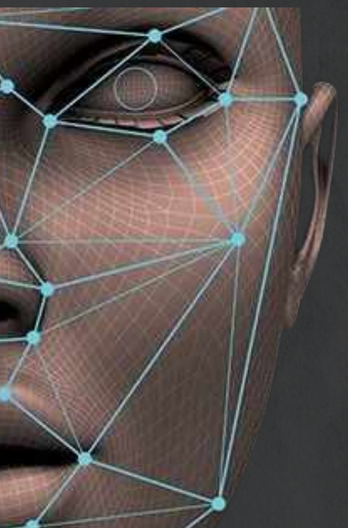
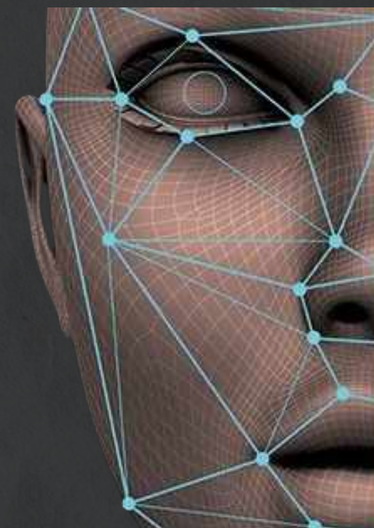
Presenting

3 E Y E S

Facial Recognition Attendance System





IT360: Information assurance and security

20 million

new learners registered for **online courses** worldwide **yearly**

32%

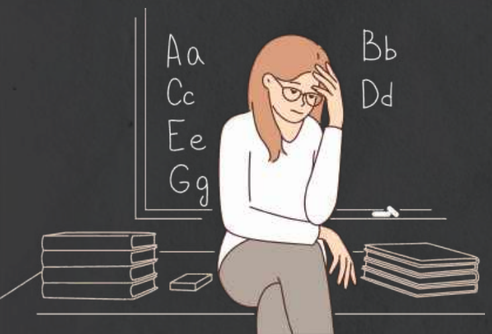
Increase in registration in **Coursera** by 2021

Online courses have gained immense popularity for several compelling reasons such as **flexibility**, **convenience** and **cost-effectiveness**...

Problematic

Attendance Monitoring

Instructors struggle to accurately track student attendance in online courses. Traditional methods like roll calls don’t apply, so they need digital tools or platforms to record attendance.



Authentication and Identification

Ensuring that the right student is participating is crucial. Instructors face challenges in verifying student identities during online assessments or synchronous sessions.

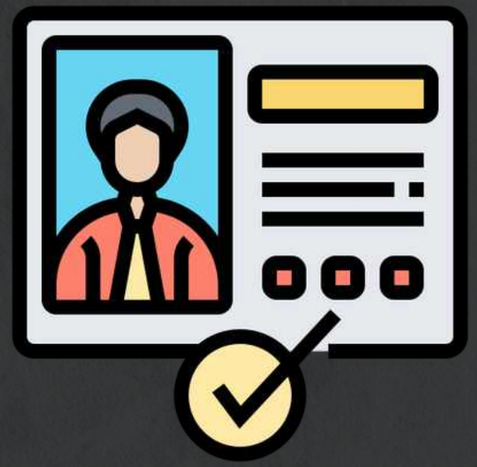
Class Size

Managing a large class with diverse attendance patterns can be overwhelming. Instructors may need more modern techniques to compute the total number of attendees

Potential Solution

Facial Recognition Attendance System

Benefiting both students and professors



Benefits *For Students*

Security and Accuracy

- Students can mark their attendance quickly and efficiently using facial recognition. No need to carry physical cards or remember PINs.
- The system works seamlessly, even for students attending classes remotely or in different time zones.

Privacy Considerations

- Institutions must address privacy concerns related to biometric data. Students should be informed about how their facial data is stored and protected.

Benefits *For Students*

Security and Accuracy

- Facial recognition ensures that only the enrolled student can mark their attendance. This prevents proxy attendance or fraudulent practices.
- Accurate attendance records benefit students during assessments or grade calculations.

Reduced Stress

- Traditional attendance methods can cause stress if students arrive late or miss a class. Facial recognition eliminates this pressure.
- Students can focus on learning rather than worrying about attendance.

Benefits *For Teachers*

Time Saving

- Professors spend less time on manual attendance tracking. The system automatically records attendance, allowing them to focus on teaching.
- Administrative tasks are streamlined, freeing up valuable class time.

Accurate Records

- Facial recognition eliminates errors associated with manual recording. Professors can trust the system's accuracy.
- Accurate attendance data is essential for monitoring student progress and identifying at-risk students.

Benefits *For Teachers*

Focus on Teaching

- Professors can concentrate on delivering content, engaging students, and facilitating discussions.
- The system reduces distractions related to attendance management.

Security and Anti-Fraud Measures

- Facial recognition enhances security. Unauthorized access is minimized, and time fraud (such as buddy punching) is reduced.
- Professors can trust that the system accurately reflects student participation.

Introducing

This system leverages facial recognition technology to automate student attendance tracking in educational institutions

Project *Overview*

- The Attendance Management System using Face Recognition is a cutting-edge solution
- It replaces traditional and time-consuming roll-call methods by utilizing facial recognition technology to efficiently track and manage student attendance.

Key Features

Facial Recognition:

- The system captures live video or images of students.
- It matches these images against a registered database of faces.
- Real-time attendance is marked based on successful face recognition.

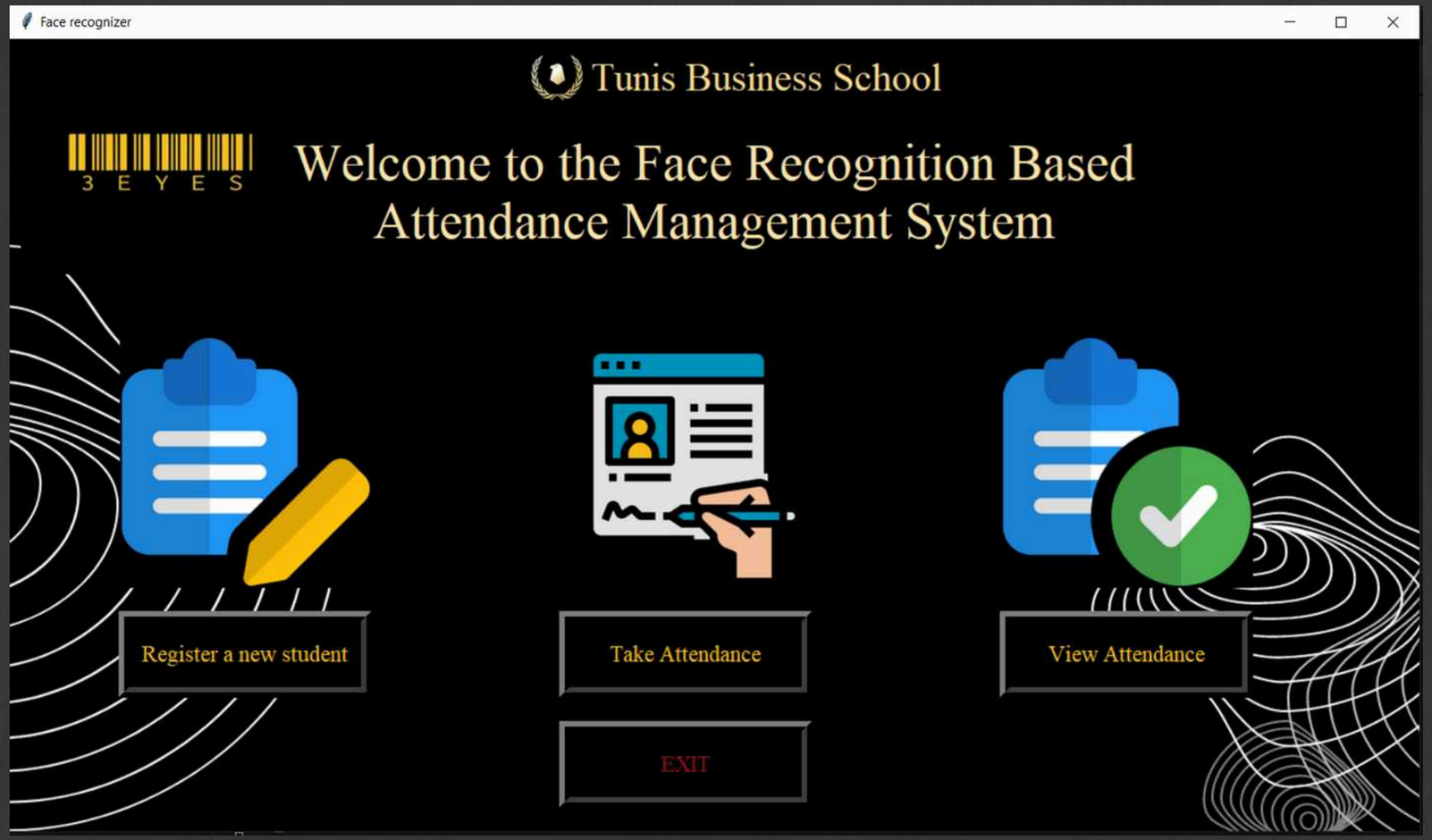
Efficient Record Management:

- The system seamlessly stores attendance records in an Excel database.

User-Friendly Interface:

- Both students and professors can easily navigate the system.

Let’s have a tour together!



Work Flow

Registration:

- Upon running the project, users register their faces.
- A small window prompts users to enter their ID and name.
- Clicking the “Take Image” button captures up to 50 images of the user’s face (this number can be customized).
- These images are stored in a folder named “TrainingImage.”
- The more images provided, the better the system performs during face recognition.

Work Flow

Training the Model:

- After collecting images, users click the “Train Image” button.
- The system trains the model by converting the images into numeric format.
- This training enables the system to recognize faces effectively.

Work Flow

Automatic Attendance:

- Users enter the subject name and click “Automatic Attendance.”
- The system uses the trained model to identify faces and mark attendance.
- Separate CSV files are created for each subject, containing attendance records.

Work Flow

Automatic Attendance:

- Users can view attendance records by clicking the “View Attendance” button.
- The system displays attendance data in a tabular format.

Phython Tools

3eyes is a python based solution that contains primarily these tools and libraries

Pandas:

Pandas is used for data manipulation and analysis, providing data structures like Data Frame for handling tabular data, along with functions for data cleaning, aggregation, and I/O operations.

NumPy:

NumPy supports numerical computation with large, multi-dimensional arrays and matrices, offering mathematical functions for operations like linear algebra and random number generation.

cv2 (OpenCV):

OpenCV is a library for computer vision, providing tools for image and video processing, object detection, and real-time applications like facial recognition.

Phython Tools

3eyes is a python based solution that contains primarily these tools and libraries

os:

The os module allows interaction with the operating system, enabling file and directory management, environment variable access, and process control.

tkinter:

Tkinter is the standard GUI library for Python, used to create desktop applications with widgets, event handling, and layout management.

PIL (Pillow):

Pillow is used for image processing and manipulation, supporting various image formats and providing tools for resizing, cropping, filtering, and drawing on images.

We are ready for your questions!

Thank you for your attention!