

Review-2 on Web-Based Facial Authentication System



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Overview

- Introduction
- Objectives of the Project
- Proposed Methodology/Architecture/Algorithm/Technique/etc
- Implementation Details
- Results (If any one objective is completed)
- References

Introduction



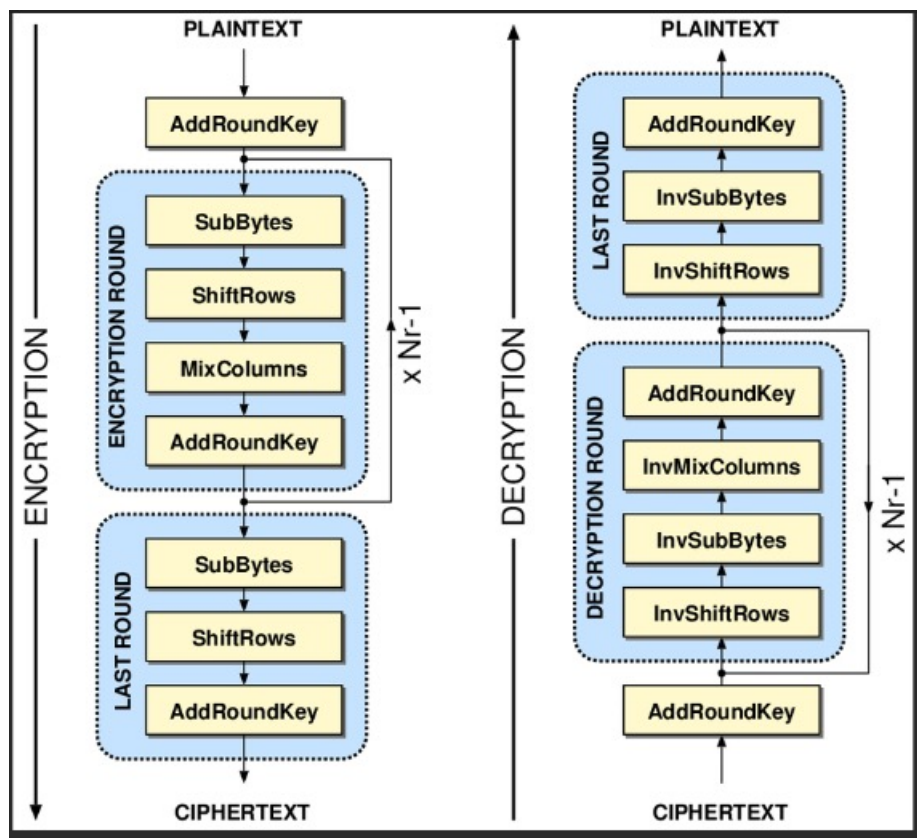
- Provide an overview of the current state of online security and authentication challenges.
- Mention the rise in cyber threats and the need for more secure authentication methods.
- Introduce the concept of facial recognition technology as a solution.
- A face recognition system is a technology that can identify and verify people from digital images and footage which is stored in their DB.
- We decided to use the same face recognition approaches for web authentication for improving the security in websites and bringing a new approach in web authentication.

Objectives of the Project



- Improve the security of the application by implementing facial authentication as a robust and reliable user verification method.
- Provide a user-friendly login experience by enabling users to access the application quickly and effortlessly through facial recognition.
- Enable users to securely and conveniently access online services using their facial features as authentication.
- Achieve a high level of accuracy in facial recognition to reduce false positives and negatives.
- Create a user-friendly interface for capturing facial images, making it easy for users to register and authenticate themselves.
- Develop an efficient and fast authentication process to provide a seamless user experience.

Proposed Methodology/Architecture/Algorithm/Technique/etc



The Advanced Encryption Standard (AES) is a symmetric-key encryption algorithm established as a standard for secure data protection.

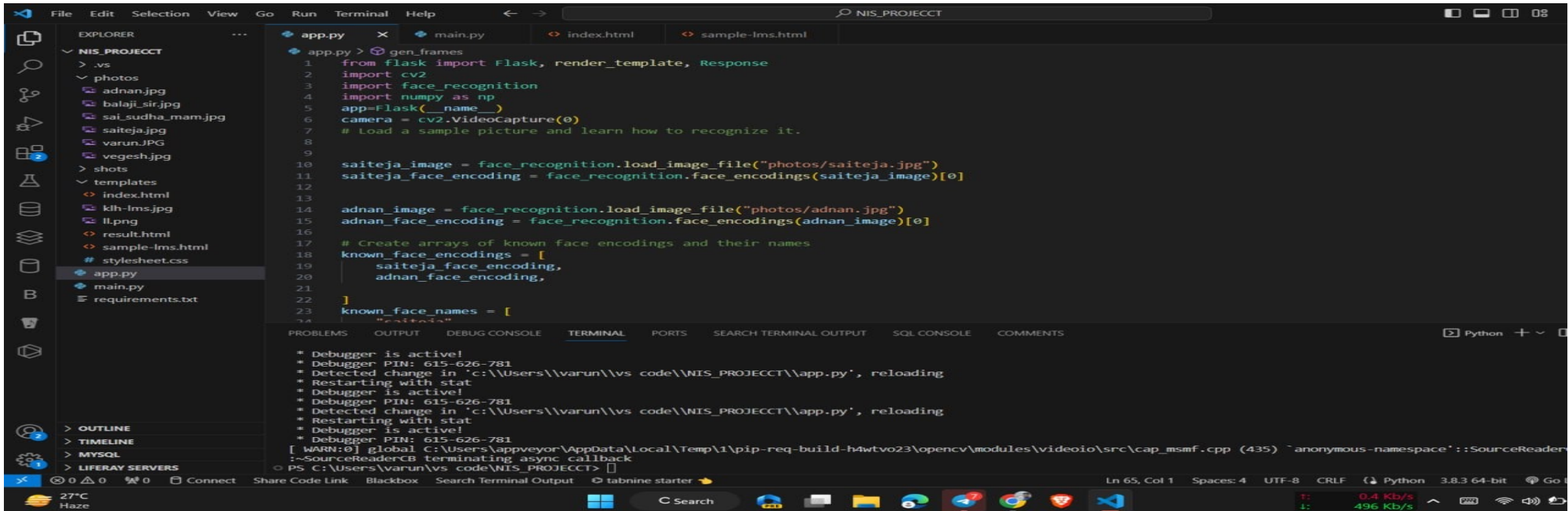
AES operates on fixed-size data blocks, typically 128 bits or 16 bytes, and uses a series of substitution and permutation operations for encryption and decryption.

It supports key lengths of 128, 192, and 256 bits, with longer keys providing higher levels of security.

AES is known for its speed and efficiency, making it a popular choice for various applications, including secure communication and data storage.

It has a proven track record of robust security and has become a fundamental encryption method used in many modern cryptographic protocols and systems.

Proposed Methodology/Architecture/Algorithm/Technique/etc



The screenshot displays a Visual Studio Code editor window for a project named "NIS_PROJECCT". The Explorer sidebar on the left shows the project structure, including a "photos" directory with several image files (adnan.jpg, balaji_sir.jpg, sai_sudha_mam.jpg, saiteja.jpg, varun.JPG, vegesh.jpg) and a "shots" directory. The main editor area shows the code for "app.py", which is a Flask application for face recognition. The code imports Flask, cv2, face_recognition, and numpy. It sets up a Flask app, loads a sample image (saiteja.jpg) and its encoding, and loads another image (adnan.jpg) and its encoding. It then creates arrays of known face encodings and their names. The terminal at the bottom shows the output of the application, including messages about the debugger being active and the application reloading.

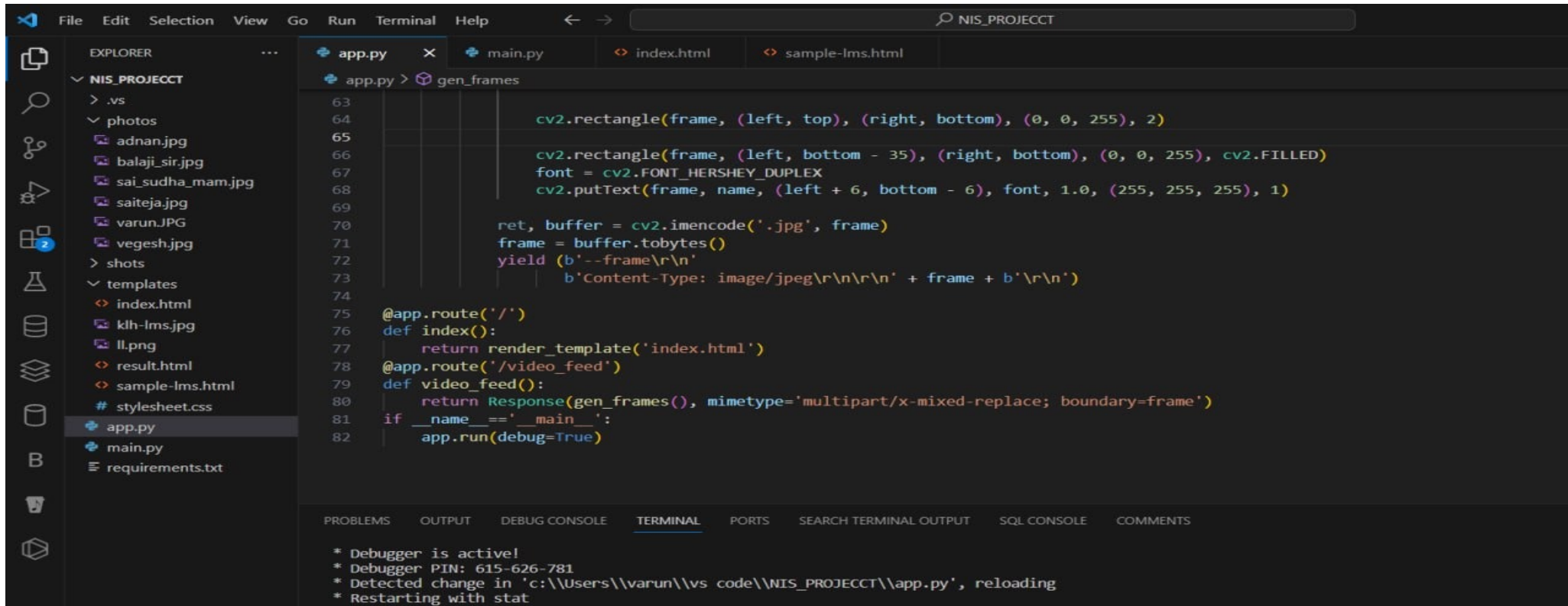
```
app.py > gen_frames
1 from flask import Flask, render_template, Response
2 import cv2
3 import face_recognition
4 import numpy as np
5 app=Flask(__name__)
6 camera = cv2.VideoCapture(0)
7 # Load a sample picture and learn how to recognize it.
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10 saiteja_image = face_recognition.load_image_file("photos/saiteja.jpg")
11 saiteja_face_encoding = face_recognition.face_encodings(saiteja_image)[0]
12
13
14 adnan_image = face_recognition.load_image_file("photos/adnan.jpg")
15 adnan_face_encoding = face_recognition.face_encodings(adnan_image)[0]
16
17 # Create arrays of known face encodings and their names
18 known_face_encodings = [
19     saiteja_face_encoding,
20     adnan_face_encoding,
21 ]
22 known_face_names = [
23     "saiteja",
24     "adnan"
25 ]
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS SEARCH TERMINAL OUTPUT SQL CONSOLE COMMENTS

```
* Debugger is active!
* Debugger PIN: 615-626-781
* Detected change in 'c:\\Users\\varun\\vs code\\NIS_PROJECCT\\app.py', reloading
* Restarting with stat
* Debugger is active!
* Debugger PIN: 615-626-781
* Detected change in 'c:\\Users\\varun\\vs code\\NIS_PROJECCT\\app.py', reloading
* Restarting with stat
* Debugger is active!
* Debugger PIN: 615-626-781
[ WARN:0] global C:\\Users\\appveyor\\AppData\\Local\\Temp\\1\\pip-req-build-h4wtvo23\\opencv\\modules\\videoio\\src\\cap_msmf.cpp (435) 'anonymous-namespace': SourceReader
::~SourceReaderCB terminating async callback
PS C:\\Users\\varun\\vs code\\NIS_PROJECCT>
```

Ln 65, Col 1 Spaces: 4 UTF-8 CRLF Python 3.8.3 64-bit

Proposed Methodology/Architecture/Algorithm/Technique/etc



The screenshot displays a Visual Studio Code editor window with a project named 'NIS_PROJECCT'. The Explorer sidebar on the left shows the project structure, including a 'photos' directory with several image files and a 'templates' directory with HTML files. The main editor area shows the 'app.py' file, which contains a Flask application. The code defines a 'gen_frames' generator function that processes video frames using OpenCV, and a 'video_feed' endpoint that returns the frames as a response. The application is run in debug mode.

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```

```
cv2.rectangle(frame, (left, top), (right, bottom), (0, 0, 255), 2)

cv2.rectangle(frame, (left, bottom - 35), (right, bottom), (0, 0, 255), cv2.FILLED)
font = cv2.FONT_HERSHEY_DUPLEX
cv2.putText(frame, name, (left + 6, bottom - 6), font, 1.0, (255, 255, 255), 1)

ret, buffer = cv2.imencode('.jpg', frame)
frame = buffer.tobytes()
yield (b'--frame\r\n'
      b'Content-Type: image/jpeg\r\n\r\n' + frame + b'\r\n')

@app.route('/')
def index():
    return render_template('index.html')

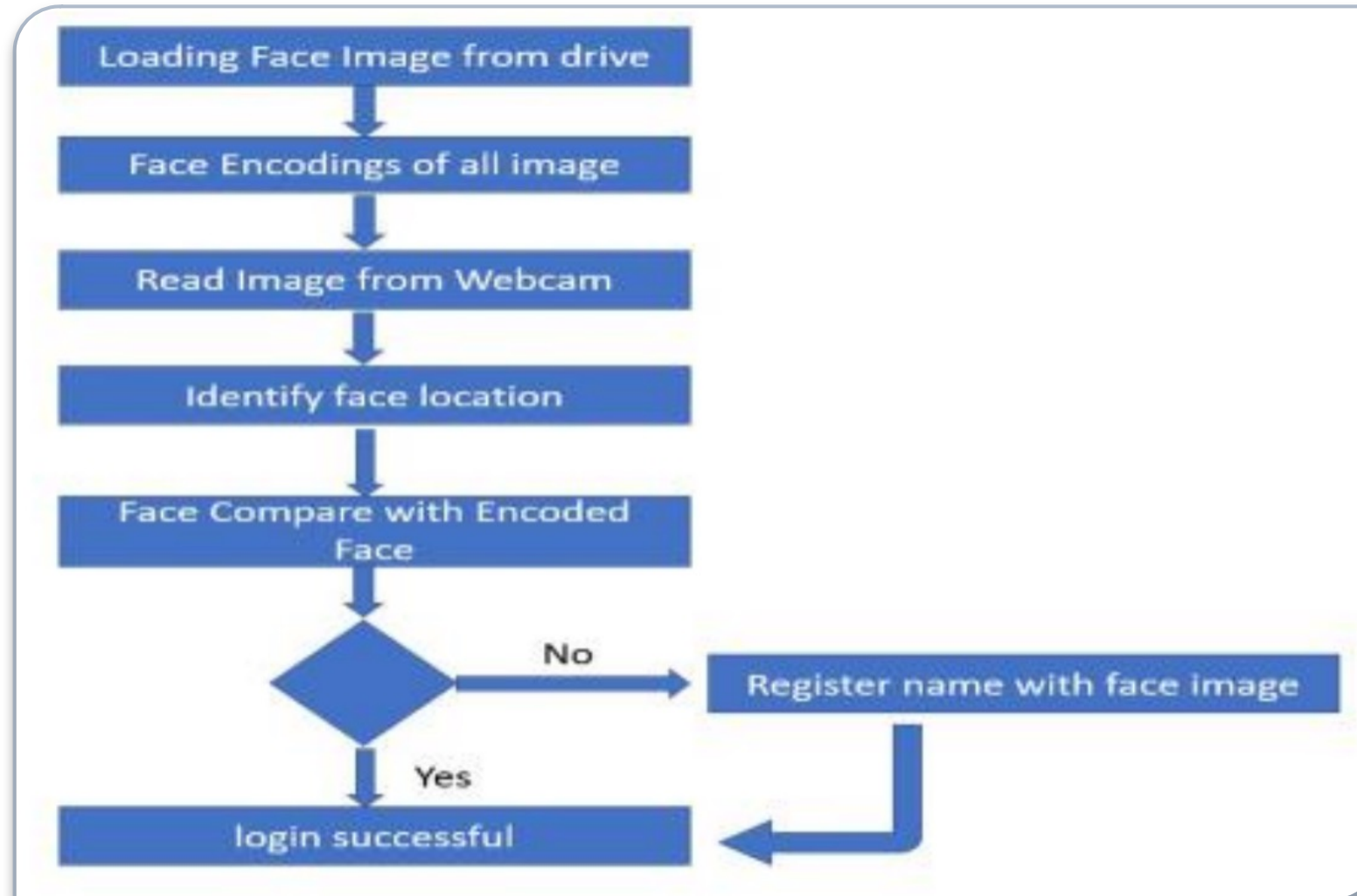
@app.route('/video_feed')
def video_feed():
    return Response(gen_frames(), mimetype='multipart/x-mixed-replace; boundary=frame')

if __name__ == '__main__':
    app.run(debug=True)
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS SEARCH TERMINAL OUTPUT SQL CONSOLE COMMENTS

```
* Debugger is active!
* Debugger PIN: 615-626-781
* Detected change in 'c:\Users\varun\vs code\NIS_PROJECCT\app.py', reloading
* Restarting with stat
```


Implementation Details



Results



KLH-Learning Management System

127.0.0.1:5000


Google Gmail YouTube KL ERP KLH Learning Mana... hackerank Manganato - Read... Computer Science... Maps Open Source Altern... Shodan Search Engi... Wayback Machine

KLH-Learning Management System

☐ Cookies must be enabled in your browser ☐

2010030055

password



saiteja

Log in

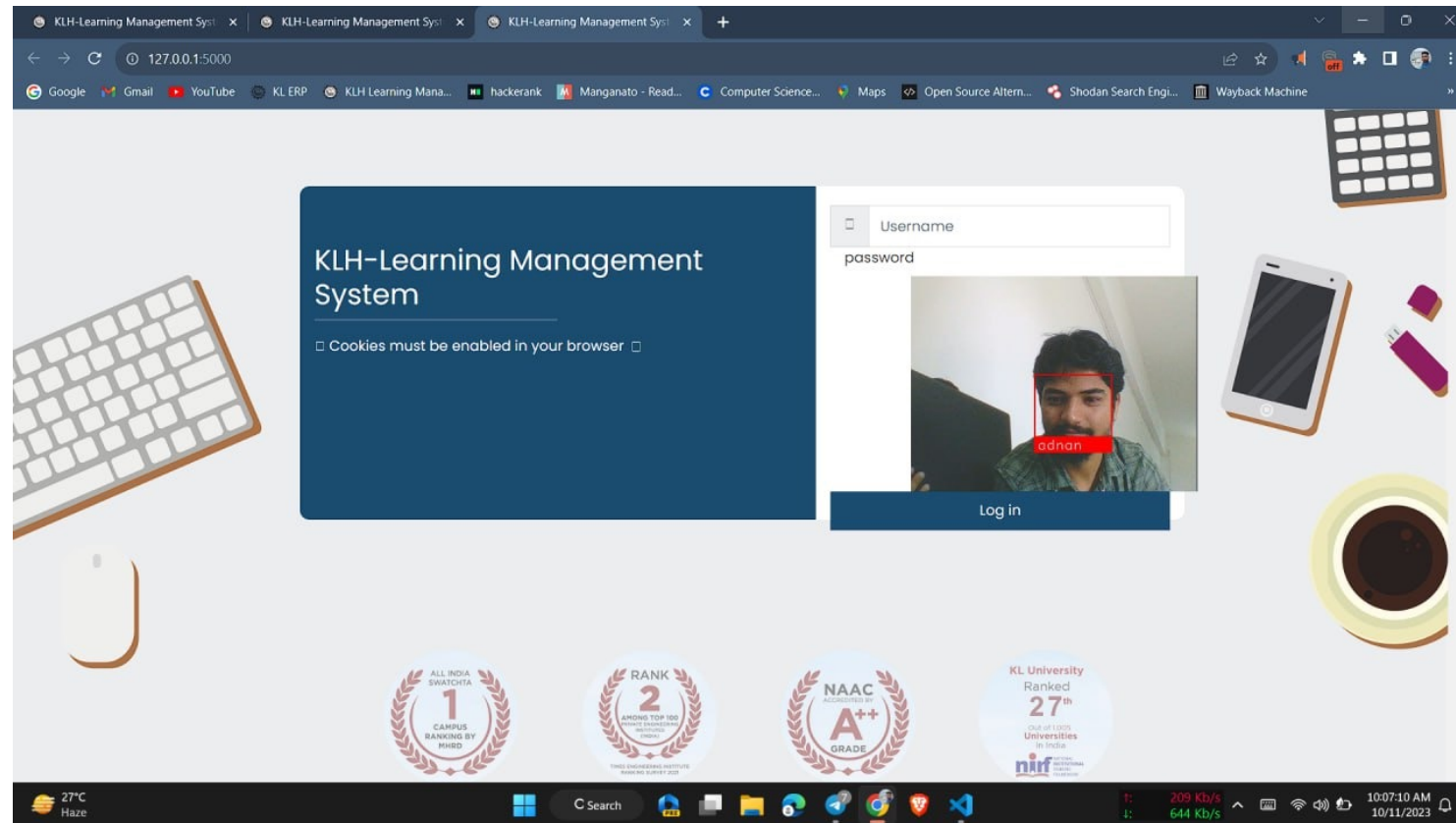
ALL INDIA SWATCHTA
1
CAMPUS RANKING BY MHRD

RANK **2**
AMONG TOP 100
PRIVATE ENGINEERING
INSTITUTES
(INDIA)
TIMES ENGINEERING INSTITUTE
RANKING SURVEY 2020

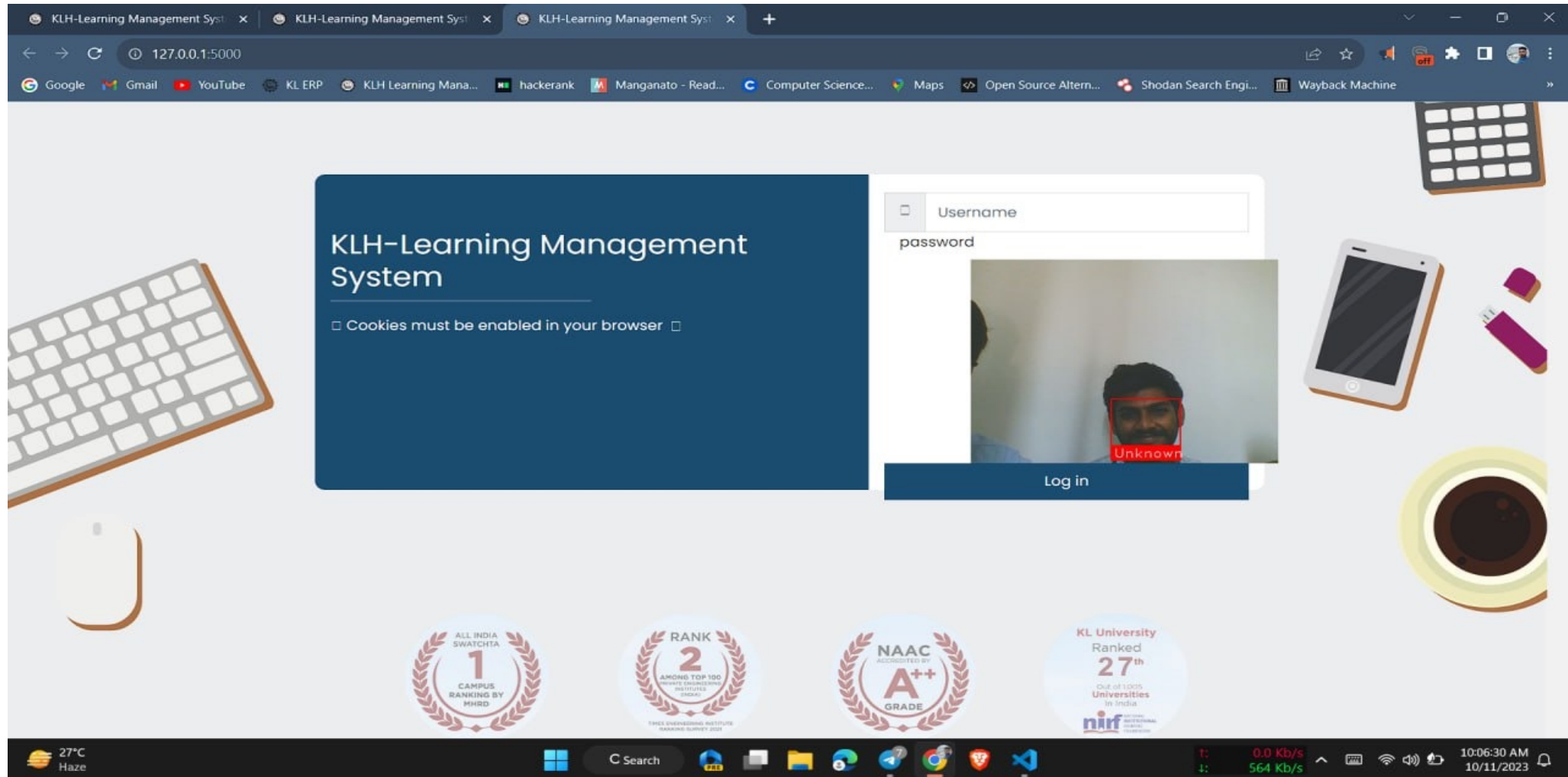
NAAC
ACCREDITED BY
A++
GRADE

KL University
Ranked
27th
Out of 1000
Universities
in India
nirf

Results



Results

A screenshot of a web browser displaying the KLH-Learning Management System login page. The browser's address bar shows the URL "127.0.0.1:5000". The page has a light gray background with a keyboard, mouse, calculator, smartphone, and coffee cup illustration. A dark blue box on the left contains the text "KLH-Learning Management System" and a message: "Cookies must be enabled in your browser". To the right is a login form with "Username" and "password" input fields, a video feed of a person with a red "Unknown" label, and a "Log in" button. At the bottom, there are four circular award badges: "ALL INDIA SWATCHTA 1 CAMPUS RANKING BY MHMD", "RANK 2 AMONG TOP 100 PRIVATE EDUCATIONAL INSTITUTIONS INDIA", "NAAC ACCREDITED BY A++ GRADE", and "KL University Ranked 27th Out of 1000 Universities in India". The Windows taskbar at the bottom shows the date and time as "10:06:30 AM 10/11/2023" and network speed as "0.0 Kb/s" and "564 Kb/s".

References

- <https://www.geeksforgeeks.org/advanced-encryption-standard-aes/>
- <https://hackernoon.com/how-to-authenticate-a-user-via-face-recognition-in-your-web-application>
- [\(PDF\) Face Recognition: A Literature Review \(researchgate.net\)](#)

Thank you and Any Queries