CARPE DATUM TEAM :

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REPORT

Installments:

Mediapipe, ImageHash

Libraries used:

cv2, os , mediapipe, pandas , matplotlib.pyplot , seaborn, numpy, imagehash

from PIL import Image

from scipy.signal import savgol_filter, find_peaks

Input:

Inhouse dataset(consists of 4 videos of caliberated and testing videos)
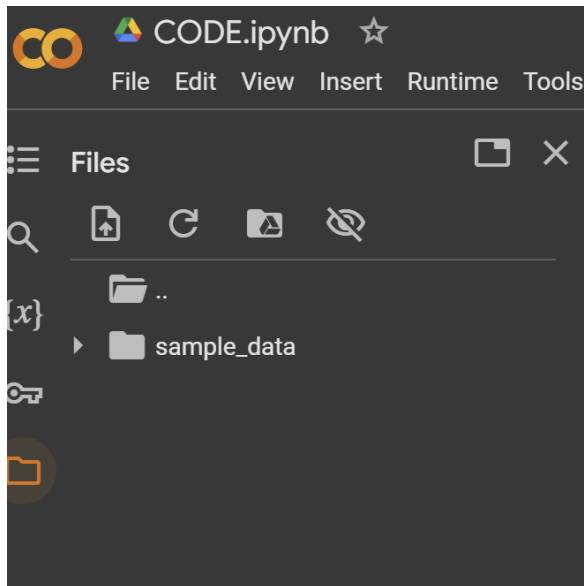
Helen dataset- used for face detection and eye detection.

Inhouse dataset- used for face, eye and anomaly detection.

How to run code:

Program should run in google colab,

Steps:

1. Extract AI_PROJECT and then Upload code.ipynb into google colab
2. After loading the file, then

Click in upload button, then upload

a. Go go to AI_PROJECT>>
   1. Upload shape_predictor_68_face_landmarks.dat file
   2. Then go to INHOUSE_DATASET_VIDEOS, in that select one testing video and caliberated video of one candidate and the upload them(for example if you want to test for Niharika—then select Niharikacalibvideo, Niharikatest)
   3. Then create a folder name helendataset, the upload all the images present in AI_PROJECT>>helendata, upload them in to helendataset in google colab.
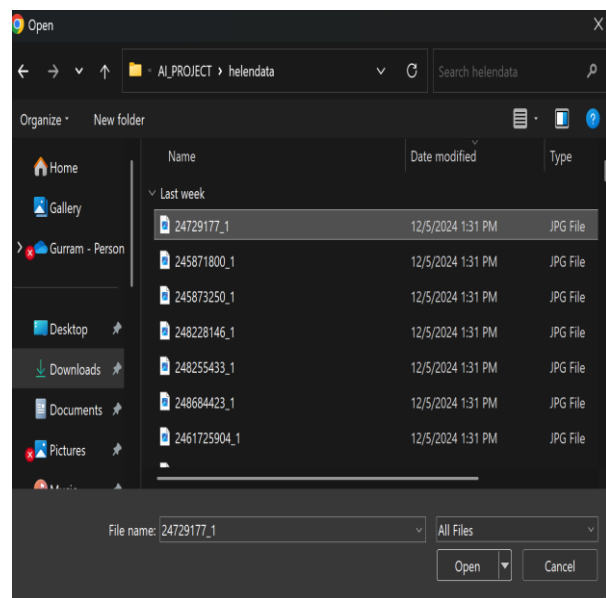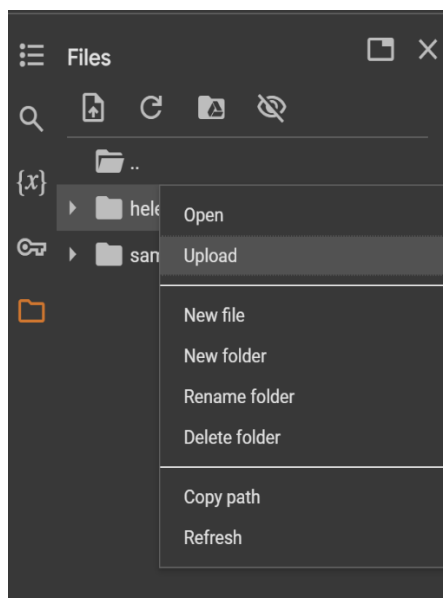
4. Then go to ACTUAL_PREDICTED_EXCEL, then select a file(if you are testing Niharika, then select Niharika - actual predicted values.xlsx file and upload)

3. The change the path, in code cell 5:
    Copy the file paths from files and paste here(the testing video path should be assigned to video_path and caliberated video path should be assigned to calib_video)
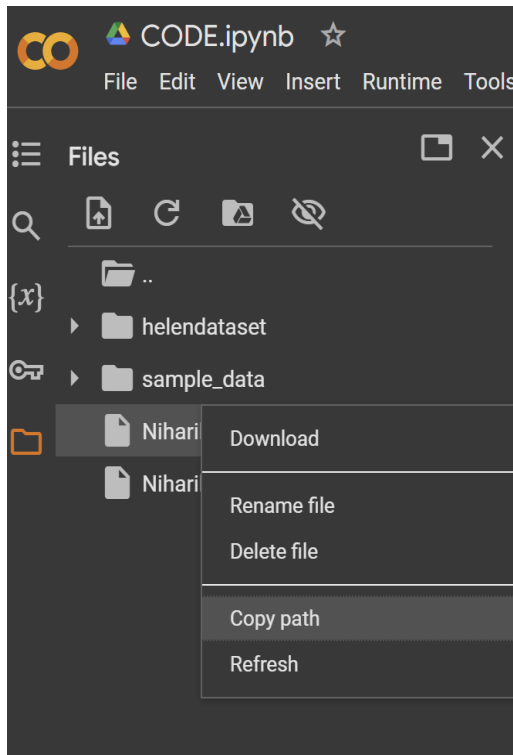

```python
# Paths and method selection for running the face detection
video_path = "/content/Niharikatest.mp4"
method = "haar"  # Choose from 'haar', 'mediapipe', 'dlib'
output_dir = "/content/face_detection_haar"

method2="mediapipe"
output_dir2 = "/content/face_detection_mediapipe"

method3 = "dlib"
output_dir3 = "/content/face_detection_dlib"

calib_video="/content/Niharikacalibvideo.mp4"
output_dir_calib= "/content/face_detection_calib"
```

4. In last code cell where we find accuracy

```python
# Load the Excel file
file_path = '/content/Niharika - actual predicted values.xlsx'
data = pd.read_excel(file_path)
```

Change the file path(which we already uploaded the file, just copy the path and paste it here)

5. Now run the all the cells.

We will get the output.

Output:

We get the accuracy for eye detection, face detection using Haar Cascade, Mediapipe and Dlib library for inhouse dataset and helen dataset.

Then we will be blurring and masking frames and we will output for them.

Then we will be sending the masked frames for anomaly detection.

Then after we will get the anomaly frames as output.

We will be calculating actual and predicted values and we will be calculating all the evaluation metrics such as accuracy,precision,recall,f1-score

We will get the output for anomaly detection(evaluation metrics such as accuracy, precision, f1 score, recall etc).