

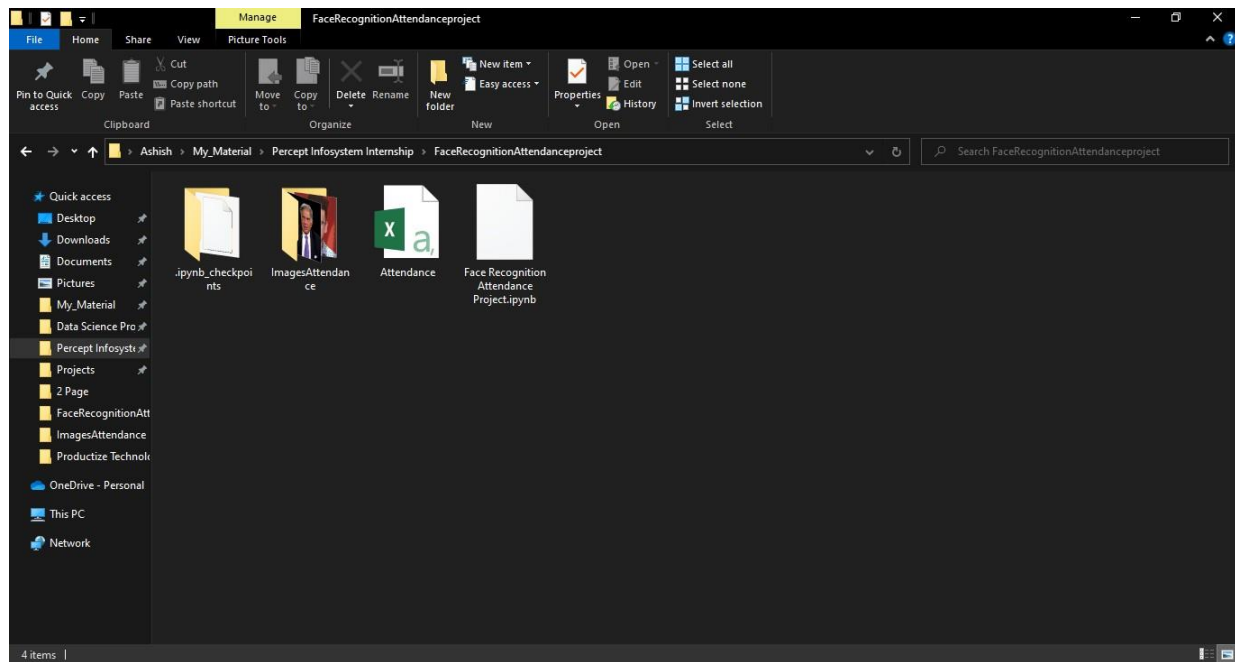
Employee Performance Management Project

1. Face Recognition system for Employee Attendance using Python and available APIs and face recognition libraries
2. Create a Human Activity Recognition system for training and monitoring a new employee to supervise if he/she correctly performs a task. Whether they are utilising time to obtain goal, are present at their workstation or are absent. Use available employee videos.

Solution:-

To Access Notebook refer this link:-

https://colab.research.google.com/drive/1LwSv_simKEYJCDyUlyS73FEm2ZGL6tb7?usp=sharing



== Face Recognition Attendance Project

Importing all libraries

```
+*In[2]:*+ [source,  
ipython3]  
-----  
import face_recognition as fr  
import cv2  
import pandas as pd  
import numpy as np  
import matplotlib.pyplot as plt  
import os  
from datetime import datetime  
-----
```

Importing Image Data

```
+*In[3]:*+ [source,  
ipython3]
```

```

path = 'ImagesAttendance'
Images = []
ClassNames = []
mylist = os.listdir(path)
print(mylist)
for cl in mylist:
    curImg = cv2.imread(f'{path}/{cl}')
    Images.append(curImg)
    ClassNames.append(os.path.splitext(cl)[0])

```

```

print(ClassNames)
-----

```

```

+*Out[3]:*+
-----

```

```

['Ashish mallah.jpg', 'Bill gates.jpg', 'Elon musk.jpg', 'Ratan tata.jpg']
['Ashish mallah', 'Bill gates', 'Elon musk', 'Ratan tata']
-----

```

Image Encoding

```

+*In[4]:*+ [source,
ipython3]
-----

```

```

def findEncodings(Images):
    encodeList = []
    for img in Images:
        img = cv2.cvtColor(img,
        cv2.COLOR_BGR2RGB) encode =
        fr.face_encodings(img)[0]
        encodeList.append(encode)
    return encodeList
-----

```

```

+*In[5]:*+ [source,
ipython3]
-----

```

```

encodeListKnown = findEncodings(Images)
print("Encoding Complete")
-----

```

```

+*Out[5]:*+
-----

```

```

Encoding Complete
-----

```

Reading Csv file to store Attendance with name,time,date format.

```
+*In[6]:*+ [source,
ipython3]
-----
def MarkAttendance(name):
    with open('Attendance.csv','r+') as f:
        myDataList = f.readlines() dateList = []
        for line in myDataList: entry =
            line.split(',')
            dateList.append(entry[2]) if
            date not in dateList:
                now = datetime.now()
                dtString = now.strftime('%H:%M:%S')
                dstr = now.strftime('%d/%m/%Y')
                f.writelines(f'\n{name},{dtString},{dstr}')
-----
```

Reading Image from Webcam and apply different face recognition techniques!

```
+*In[ ]:*+ [source,
ipython3]
-----
cap = cv2.VideoCapture(0)
while True:
    success, img = cap.read()
    imgS = cv2.resize(img,(0,0),None,0.25,0.25) imgS
    - cv2.cvtColor(imgS, cv2.COLOR_BGR2RGB)
    facesCurFrame = fr.face_locations(imgS)
    encodesCurFrame = fr.face_encodings(imgS,facesCurFrame)

    for encodeFace, faceLoc in zip(
encodesCurFrame,facesCurFrame):
        matches = fr.compare_faces(encodeListKnown,encodeFace)
        faceDis = fr.face_distance(encodeListKnown,encodeFace)
        #print(faceDis)
        matchIndex = np.argmin(faceDis)

        now = datetime.now()
        date = now.strftime('%d/%m/%Y')
        #print(date)

        if matches[matchIndex]:
            name = ClassNames[matchIndex].upper()
```

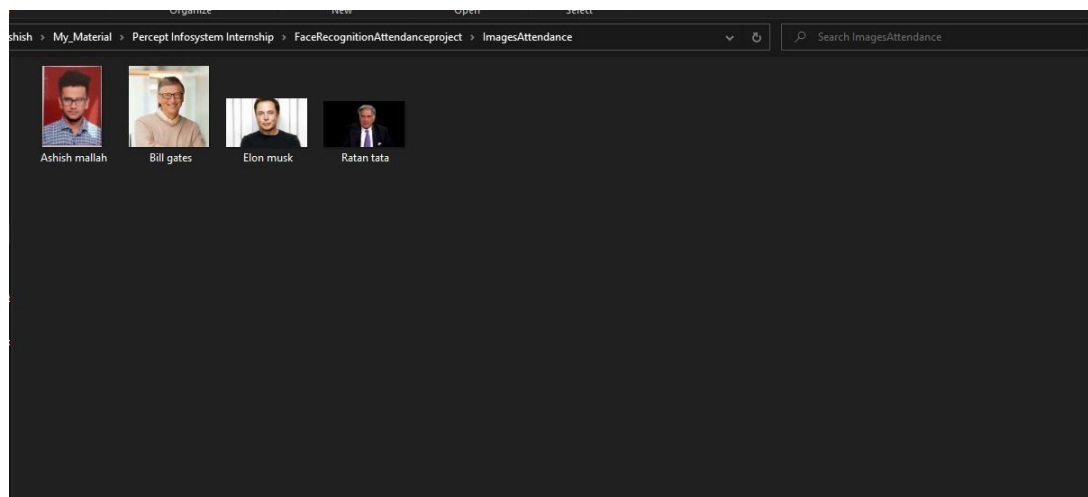
```

        #print(name)
        y1,x2,y2,x1 = faceLoc
        y1, x2, y2, x1 = y1*4, x2*4, y2*4, x1*4
        cv2.rectangle(img,(x1,y1),(x2,y2),(0,255,0),2)
        cv2.rectangle(img,(x1,y2-
35),(x2,y2),(0,255,0),cv2.FILLED)
        cv2.putText(img,name,(x1+6,y2-
6),cv2.FONT_HERSHEY_COMPLEX,1,(255,255,255),2)
        #cv2.putText(img,date,(x1+8,y2-
8),cv2.FONT_HERSHEY_COMPLEX,1,(255,255,255),2)
        MarkAttendance(name)

    cv2.imshow('Webcam',img)
    cv2.waitKey(1)
-----

```

IMAGES & OUTPUT SCREENSHOT:-



Attendance - Microsoft Excel

FILE HOME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW

Clipboard Font Alignment Number Styles Cells Editing

B9

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	name	time	date														
2	ASHISH MALLAH	21:06:50	11-03-2022														
3	ASHISH MALLAH	00:26:42	12-03-2022														
4																	
5																	
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Attendance

READY