MAJOR PROJECTS

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BRANCH : ECE

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Github link:

https://github.com/HimanshuA317/MAJOR-PROJECT

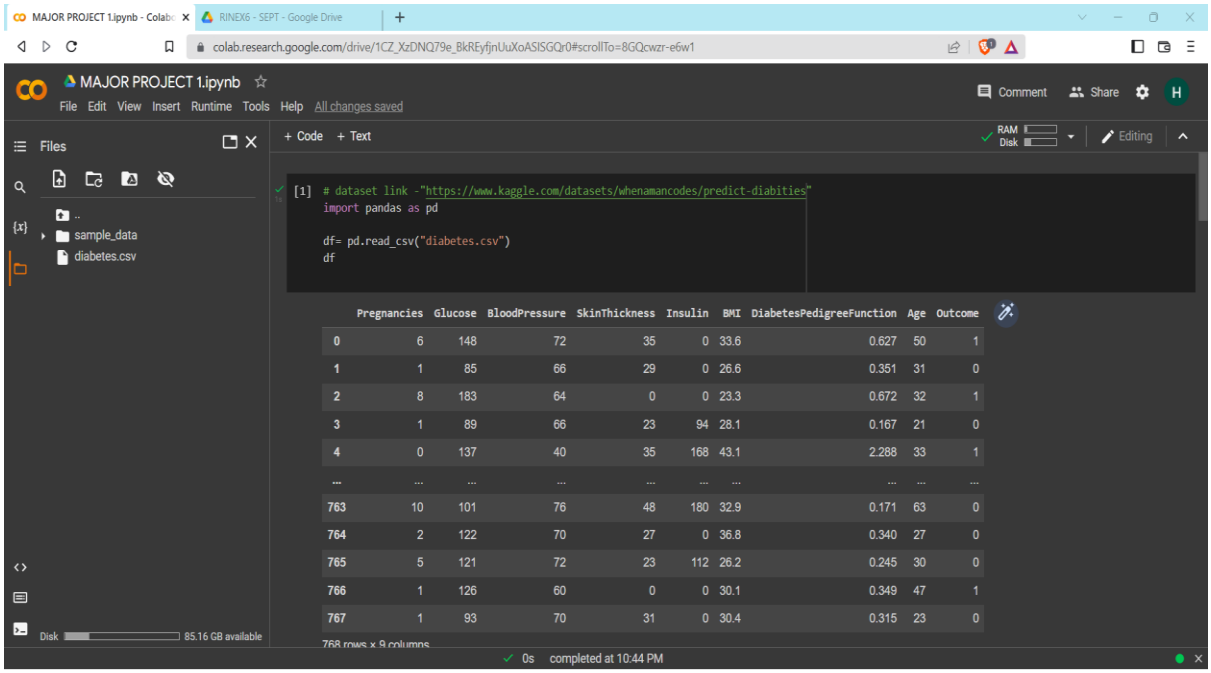
GOOGLE COLAB LINK:

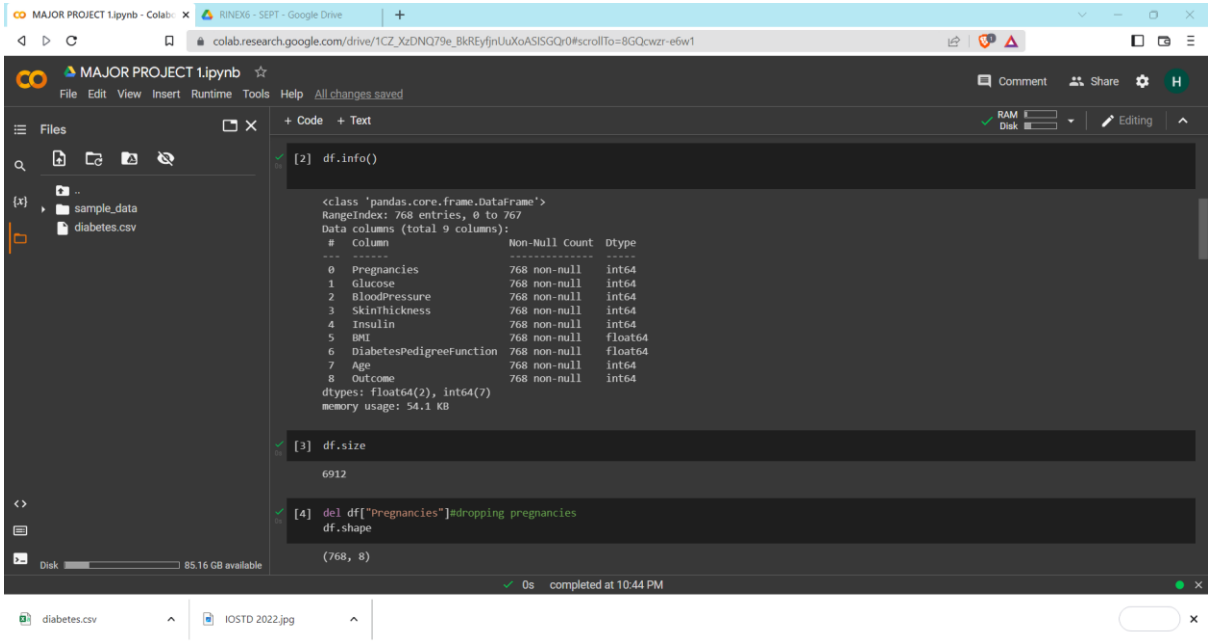
https://colab.research.google.com/drive/1CZ_XzDNQ79e_BkREyfjnUuXoASISGQr0#scrollTo=8GQcwzr-e6w1

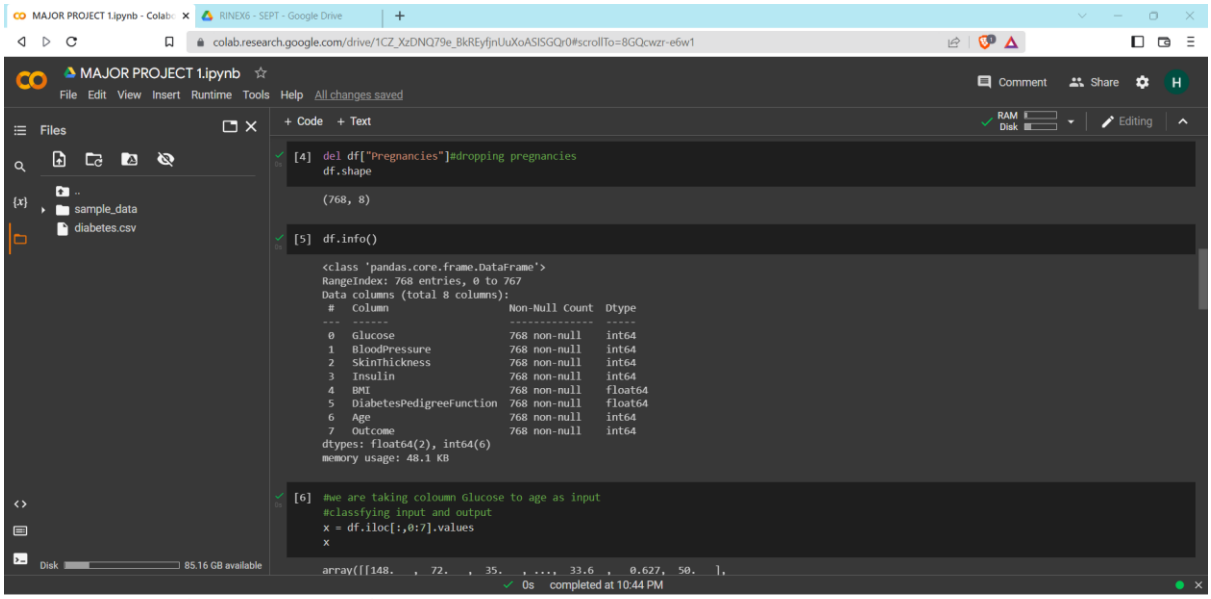
DATASET LINK:

```
https://www.kaggle.com/datasets/whenamancodes/predict-diabities
```

MAJOR PROJECT1






MAJOR PROJECT 1.ipynb - Colab
RINEX6 - SEPT - Google Drive
colab.research.google.com/drive/1CZ_XzDNQ79e_BkREyfjnUuXoASISGQr0#scrollTo=8GQcwzr-e6w1
MAJOR PROJECT 1.ipynb
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RAM
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Editing
sample_data
diabetes.csv
[4] del df["Pregnancies"]#dropping pregnancies
df.shape
(768, 8)
[5] df.info()
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 768 entries, 0 to 767
Data columns (total 8 columns):
Column Non-Null Count Dtype
--- ------ -------------- -----
0 Glucose 768 non-null int64
1 BloodPressure 768 non-null int64
2 SkinThickness 768 non-null int64
3 Insulin 768 non-null int64
4 BMI 768 non-null float64
5 DiabetesPedigreeFunction 768 non-null float64
6 Age 768 non-null int64
7 Outcome 768 non-null int64
dtypes: float64(2), int64(6)
memory usage: 48.1 KB
[6] #we are taking coloumn Glucose to age as input
#classfying input and output
x = df.iloc[:,0:7].values
x
array([[148. , 72. , 35. , ..., 33.6 , 0.627, 50.],
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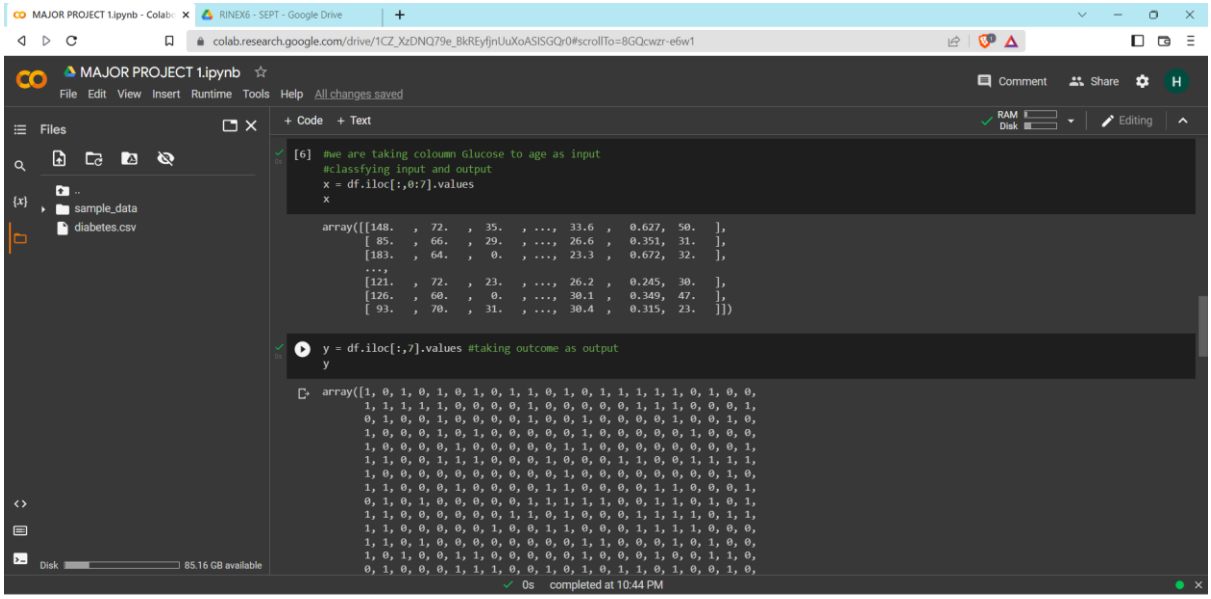
diabetes.csv
IOSTD 2022.jpg


MAJOR PROJECT 1.ipynb - Colab
RINEX6 - SEPT - Google Drive
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File Edit View Insert Runtime Tools Help All changes saved
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Editing
sample_data
diabetes.csv
[6] #we are taking coloumn Glucose to age as input
#classfying input and output
x = df.iloc[:,0:7].values
x
array([[148. , 72. , 35. , ..., 33.6 , 0.627, 50.],
[85. , 66. , 29. , ..., 26.6 , 0.351, 31.],
[183. , 64. , 0. , ..., 23.3 , 0.672, 32.],
...,
[121. , 72. , 23. , ..., 26.2 , 0.245, 30.],
[126. , 60. , 0. , ..., 30.1 , 0.349, 47.],
[93. , 70. , 31. , ..., 30.4 , 0.315, 23.]])
y = df.iloc[:,7].values #taking outcome as output
y
array([1, 0, 1, 0, 1, 0, 1, 0, 1, 1, 0, 1, 0, 1, 1, 1, 1, 1, 0, 1, 0, 0,
1, 1, 1, 1, 1, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 1, 1, 1, 0, 0, 0, 1,
0, 1, 0, 0, 1, 0, 0, 0, 0, 1, 0, 0, 1, 0, 0, 0, 0, 1, 0, 0, 1, 0,
1, 0, 0, 0, 1, 0, 1, 0, 0, 0, 0, 1, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0,
1, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 1, 1, 0, 0, 0, 0, 0, 0, 0, 0, 1,
1, 1, 0, 0, 1, 1, 1, 0, 0, 0, 1, 0, 0, 0, 1, 1, 0, 0, 1, 1, 1, 1,
1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0,
1, 1, 0, 0, 0, 1, 0, 0, 0, 0, 1, 1, 0, 0, 0, 0, 1, 1, 0, 0, 0, 1,
0, 1, 0, 1, 0, 0, 0, 0, 0, 1, 1, 1, 1, 1, 0, 0, 1, 1, 0, 1, 0, 1,
1, 1, 0, 0, 0, 0, 0, 0, 0, 1, 1, 0, 1, 0, 0, 0, 1, 1, 1, 1, 0, 1, 1,
1, 1, 0, 0, 0, 0, 0, 0, 1, 0, 0, 1, 1, 0, 0, 0, 1, 1, 1, 1, 1, 0, 0, 0,
1, 1, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 1, 1, 0, 0, 0, 1, 0, 1, 0, 0,
1, 0, 1, 0, 0, 1, 1, 0, 0, 0, 0, 0, 1, 0, 0, 0, 1, 0, 0, 1, 1, 0,
0, 1, 0, 0, 0, 1, 1, 1, 0, 0, 1, 0, 1, 0, 1, 1, 0, 1, 0, 0, 1, 0,
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diabetes.csv
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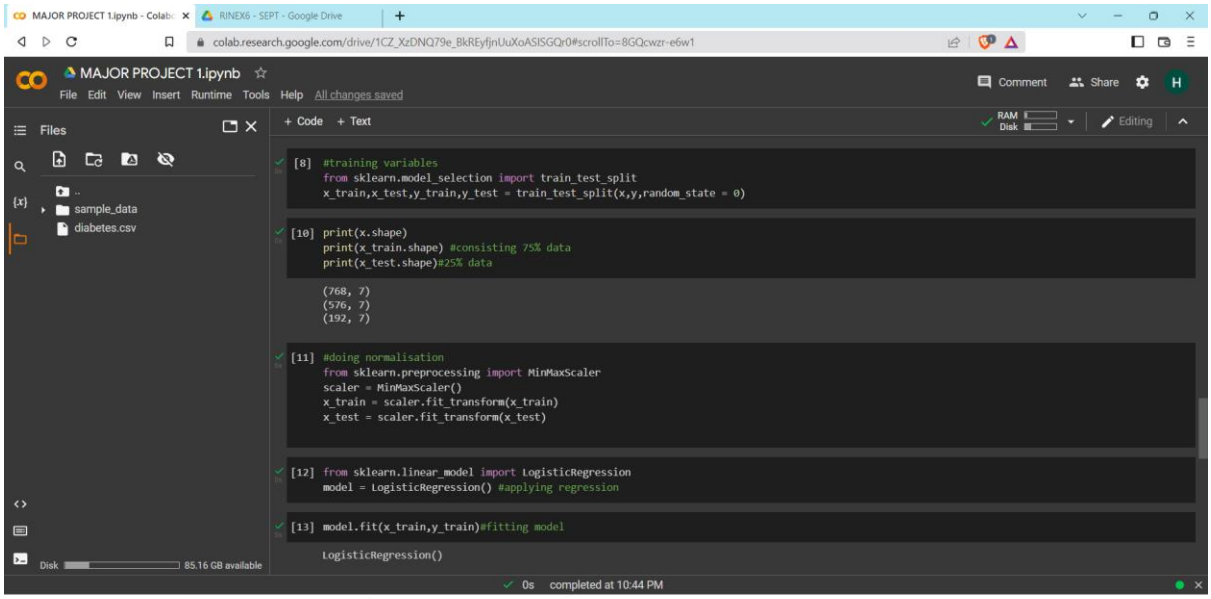
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RINEX6 - SEPT - Google Drive
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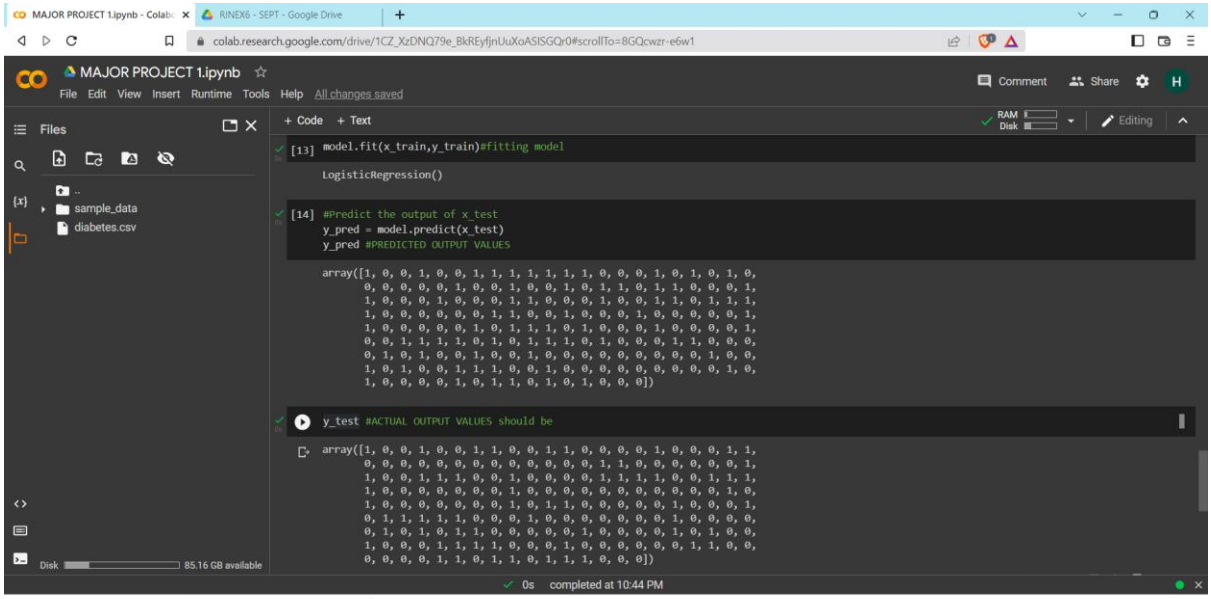
sample_data
diabetes.csv
[8] #training variables
from sklearn.model_selection import train_test_split
x_train,x_test,y_train,y_test = train_test_split(x,y,random_state = 0)
[10] print(x.shape)
print(x_train.shape) #consisting 75% data
print(x_test.shape)#25% data
(768, 7)
(576, 7)
(192, 7)
[11] #doing normalisation
from sklearn.preprocessing import MinMaxScaler
scaler = MinMaxScaler()
x_train = scaler.fit_transform(x_train)
x_test = scaler.fit_transform(x_test)
[12] from sklearn.linear_model import LogisticRegression
model = LogisticRegression() #applying regression
[13] model.fit(x_train,y_train)#fitting model
LogisticRegression()
Disk
85.16 GB available
0s completed at 10:44 PM
diabetes.csv
IOSTD 2022.jpg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RINEX6 - SEPT - Google Drive
colab.research.google.com/drive/1CZ_XzDNQ79e_BkREyfjnUuXoASISGQr0#scrollTo=8GQcwzr-e6w1
MAJOR PROJECT 1.ipynb
File Edit View Insert Runtime Tools Help All changes saved
Comment
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+ Code + Text
RAM
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Editing
..
sample_data
diabetes.csv
[13] model.fit(x_train,y_train)#fitting model
LogisticRegression()
[14] #Predict the output of x_test
y_pred = model.predict(x_test)
y_pred #PREDICTED OUTPUT VALUES
array([1, 0, 0, 1, 0, 0, 1, 1, 1, 1, 1, 1, 0, 0, 1, 0, 1, 0, 1, 0,
0, 0, 0, 0, 0, 1, 0, 0, 1, 0, 0, 1, 0, 1, 1, 0, 1, 1, 0, 0, 1,
1, 0, 0, 0, 1, 0, 0, 0, 1, 1, 0, 0, 0, 1, 0, 0, 1, 1, 0, 1, 1, 1,
1, 0, 0, 0, 0, 0, 0, 1, 1, 0, 0, 1, 0, 0, 0, 1, 0, 0, 0, 0, 0, 1,
1, 0, 0, 0, 0, 0, 1, 0, 1, 1, 1, 0, 1, 0, 0, 0, 1, 0, 0, 0, 0, 1,
0, 0, 1, 1, 1, 1, 0, 1, 0, 1, 1, 1, 0, 1, 0, 0, 0, 1, 1, 0, 0, 0,
0, 1, 0, 1, 0, 0, 1, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0,
1, 0, 1, 0, 0, 1, 1, 1, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0,
1, 0, 0, 0, 0, 1, 0, 1, 1, 0, 1, 0, 1, 0, 0, 0])
y_test #ACTUAL OUTPUT VALUES should be
array([1, 0, 0, 1, 0, 0, 1, 1, 0, 0, 1, 1, 0, 0, 0, 0, 1, 0, 0, 0, 1, 1,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 1, 0, 0, 0, 0, 0, 0, 1,
1, 0, 0, 1, 1, 1, 0, 0, 1, 0, 0, 0, 0, 1, 1, 1, 1, 1, 0, 0, 1, 1, 1,
1, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0,
1, 0, 0, 0, 0, 0, 0, 0, 1, 0, 1, 1, 0, 0, 0, 0, 0, 1, 0, 0, 0, 1,
0, 1, 1, 1, 1, 1, 1, 0, 0, 1, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0,
0, 1, 0, 1, 0, 1, 1, 0, 0, 0, 0, 1, 0, 0, 0, 0, 1, 0, 1, 0, 0,
1, 0, 0, 0, 1, 1, 1, 1, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 1, 1, 0, 0,
0, 0, 0, 0, 1, 1, 0, 1, 1, 0, 1, 1, 1, 0, 0, 0])
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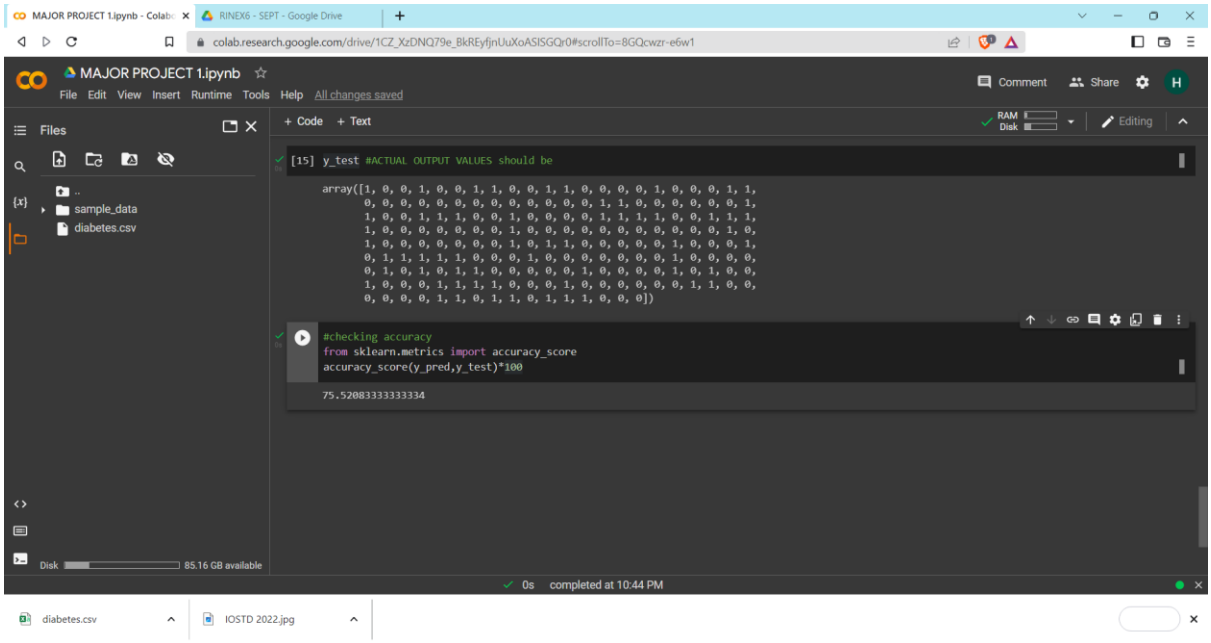
MAJOR PROJECT 1.ipynb - Colab
RINEX6 - SEPT - Google Drive
colab.research.google.com/drive/1CZ_XzDNQ79e_BkREyfjnUuXoASISGQr0#scrollTo=8GQcwzr-e6w1
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sample_data
diabetes.csv
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[15] y_test #ACTUAL OUTPUT VALUES should be
array([1, 0, 0, 1, 0, 0, 1, 1, 0, 0, 1, 1, 0, 0, 0, 0, 1, 0, 0, 0, 1, 1,
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 1, 0, 0, 0, 0, 0, 0, 1,
1, 0, 0, 1, 1, 1, 0, 0, 1, 0, 0, 0, 0, 0, 1, 1, 1, 1, 0, 0, 1, 1, 1,
1, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0,
1, 0, 0, 0, 0, 0, 0, 0, 1, 0, 1, 1, 0, 0, 0, 0, 0, 1, 0, 0, 0, 1,
0, 1, 1, 1, 1, 1, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0,
0, 1, 0, 1, 0, 1, 1, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 1, 0, 1, 0, 0,
1, 0, 0, 0, 1, 1, 1, 1, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 1, 1, 0, 0,
0, 0, 0, 0, 1, 1, 0, 1, 1, 0, 1, 1, 1, 0, 0, 0])
#checking accuracy
from sklearn.metrics import accuracy_score
accuracy_score(y_pred,y_test)*100
75.52083333333334
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diabetes.csv
IOSTD 2022.jpg

MAJOR PROJECT 2

```
import cv2
import numpy as np
import pandas as pd
import sys
```

```
def show_img():
    cv2.waitKey(3000)
    main()
```

```
def main():
    ch = int(input("Enter  choice"))
    if ch==1: #org image
        cv2.imshow("Original image",img)
        show_img()

    elif ch==2: #b&w image
        cv2.imshow("B&W image",gray)
        show_img()

    elif ch==3: #BINARY IMAGE
        ret,binary=cv2.threshold(img,127,255,cv2.THRESH_BINARY)
        cv2.imshow("binary img",binary)
        show_img()
```

```
elif ch==4: #BINARY B&W IMG
    ret,binary=cv2.threshold(gray,127,255,cv2.THRESH_BINARY)
    cv2.imshow("binary b&w img",binary)
    show_img()

elif ch==5: #SKETCH
    canny= cv2.Canny(img,90,200)
    cv2.imshow("Sketch",canny)
    show_img()

elif ch==6: #RESIZING IMAGE
    c=float(input("ENTER RATIO FOR BREADTH"))
    d=float(input("ENTER RATIO FOR LENGTH"))
    img1=cv2.resize(img,None,fx=c,fy=d)
    cv2.imshow("scaled image",img1)
    show_img()
  elif ch==7: #adding text to image
      name = input('Enter your name:')
      c=int(input("enter  x position"))
      d=int(input("enter  y position"))
      img1=img
      img1 = cv2.putText(img1,name,(c,d),cv2.FONT_HERSHEY_TRIPLEX,2,(0,255,0),1)
#SYNTAX - src,name variable,position,font style,font size,font color,font thickness
      cv2.imshow('Text image',img1)
      show_img()
  elif ch==8: #face detection
      face_cascade = cv2.CascadeClassifier("haarcascade_frontalface_default.xml")
      faces = face_cascade.detectMultiScale(gray,scaleFactor = 1.1,minNeighbors = 9)
      cu=0
      img2=img
      for x,y,w,h in faces:
          img2 = cv2.rectangle(img2,(x,y),(x+w,y+h),(0,255,0),5)
          cu+=1
      cv2.imshow("face detection",img2)
      print("total faces = ",cu)
      show_img()
```

```
    elif ch==9: #live  video
        cap = cv2.VideoCapture(0)
        while True:
            ret,frame=cap.read()
            cv2.imshow("that's me",frame)
            if cv2.waitKey(1) == 13:
                break
        cap.release()
        main()
    elif ch==10: #live video with sketch
        cap = cv2.VideoCapture(0)
        while True:
            ret,frame = cap.read()
            canny = cv2.Canny(frame,20,150)
            cv2.imshow("my live ",canny)
            if cv2.waitKey(1)==13:
                break
        cap.release()
        main()
    else:
        sys.exit()
        cv2.destroyAllWindows()


a=input("Enter image address")
img=cv2.imread(a)
gray = cv2.cvtColor(img,cv2.COLOR_BGR2GRAY)
print("IMAGE READED!")
print(" ENTER .....\n1for desplaying image\n2 for b&w image \n3 for binary image\n4 for binary b&w image \n5 for geeting sketch")
print("6 for  resizing image\n7 for entering text into image\n8 for face deetection\n9 for starting webcam\n10 for getting live sketch  ")
print("11 for exit")
main()
cv2.destroyAllWindows()
```

OUTPUT WINDOW:

```
Enter image addressCRICKET TEAM.JPG
IMAGE READED!
 ENTER .....
1for desplaying image
2 for b&w image
3 for binary image
4 for binary b&w image
5 for geeting sketch
6 for  resizing image
7 for entering text into image
8 for face deetection
9 for starting webcam
10 for getting live sketch
11 for exit
Enter  choice
```

```
Edit  Shell  Debug  Options  Window  Help
Python 3.10.5 (tags/v3.10.5:f377153, Jun  6 2022, 16:14:13) [MSC v.1
929 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.

========== RESTART: C:\Users\Himanshu Agarwal\Desktop\RINE
X 6\fp.py ==========
Enter image addressCRICKET TEAM.JPG
IMAGE READED!
 ENTER .....
1for desplaying image
2 for b&w image
3 for binary image
4 for binary b&w image
5 for geeting sketch
6 for  resizing image
7 for entering text into image
8 for face deetection
9 for starting webcam
10 for getting live sketch
11 for exit
Enter  choice1
Enter  choice
```

```
Python 3.10.5 (tags/v3.10.5:f377153, Jun  6 2022, 16:14:13) [MSC v.1
929 64 bit (AMD64)] on win32
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========== RESTART: C:\Users\Himanshu Agarwal\Desktop\RINE
X 6\fp.py ==========
Enter image addressCRICKET TEAM.JPG
IMAGE READED!
 ENTER .....
1for desplaying image
2 for b&w image
3 for binary image
4 for binary b&w image
5 for geeting sketch
6 for  resizing image
7 for entering text into image
8 for face deetection
9 for starting webcam
10 for getting live sketch
11 for exit
Enter  choice1
Enter  choice2
Enter  choice
```


```
*IDLE Shell 3.10.5*
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Python 3.10.5 (tags/v3.10.5:f377153, Jun  6 2022, 16:14:13) [MSC v.
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X 6\fp.py ==========
Enter image addressCRICKET TEAM.JPG
IMAGE READED!
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1for desplaying image
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3 for binary image
4 for binary b&w image
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6 for  resizing image
7 for entering text into image
8 for face deetection
9 for starting webcam
10 for getting live sketch
11 for exit
Enter  choice1
Enter  choice2
Enter  choice3
Enter  choice
```

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Python 3.10.5 (tags/v3.10.5:f377153, Jun  6 2022, 16:14:13) [MSC v.1
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X 6\fp.py ==========
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IMAGE READED!
 ENTER .....
1for desplaying image
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3 for binary image
4 for binary b&w image
5 for geeting sketch
6 for  resizing image
7 for entering text into image
8 for face deetection
9 for starting webcam
10 for getting live sketch
11 for exit
Enter  choice1
Enter  choice2
Enter  choice3
Enter  choice4
Enter  choice
```

```
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Python 3.10.5 (tags/v3.10.5:f377153, Jun  6 2022, 16:14:13) [MSC v.1
929 64 bit (AMD64)] on win32
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X 6\fp.py ==========
Enter image addressCRICKET TEAM.JPG
IMAGE READED!
 ENTER .....
1for desplaying image
2 for b&w image
3 for binary image
4 for binary b&w image
5 for geeting sketch
6 for  resizing image
7 for entering text into image
8 for face deetection
9 for starting webcam
10 for getting live sketch
11 for exit
Enter  choice5
Enter  choice
```


```
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Python 3.10.5 (tags/v3.10.5:f377153, Jun  6 2022, 16:14:13) [MSC v.1
929 64 bit (AMD64)] on win32
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X 6\fp.py ==========
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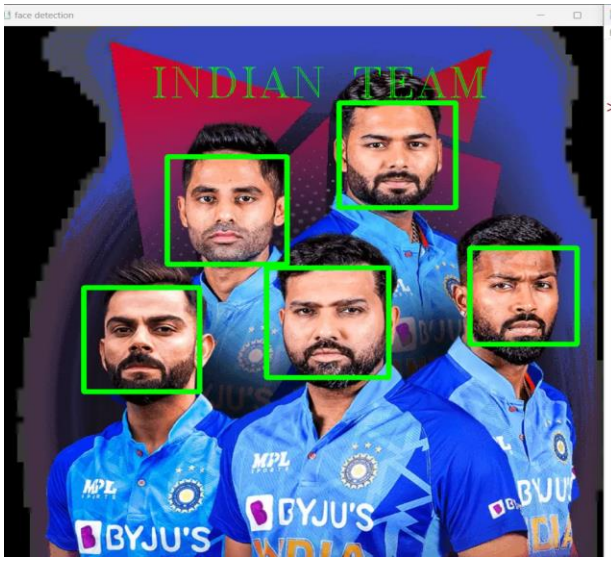
IMAGE READED!
 ENTER .....
1for desplaying image
2 for b&w image
3 for binary image
4 for binary b&w image
5 for geeting sketch
6 for  resizing image
7 for entering text into image
8 for face deetection
9 for starting webcam
10 for getting live sketch
11 for exit
Enter  choice7
Enter your name:INDIAN TEAM
enter  x position200
enter  y position100
Enter  choice
```




```
*IDLE Shell 3.10.5*
File  Edit  Shell  Debug  Options  Window  Help
Python 3.10.5 (tags/v3.10.5:f377153, Jun  6 2022, 16:14:13) [MSC v.1
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X 6\fp.py ==========
Enter image addressCRICKET TEAM.JPG
IMAGE READED!
 ENTER .....
1for desplaying image
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3 for binary image
4 for binary b&w image
5 for geeting sketch
6 for  resizing image
7 for entering text into image
8 for face deetection
9 for starting webcam
10 for getting live sketch
11 for exit
Enter  choice7
Enter your name:INDIAN TEAM
enter  x position200
enter  y position100
Enter  choice8
total faces =  5
Enter  choice
```

```
*IDLE Shell 3.10.5*
File  Edit  Shell  Debug  Options  Window  Help
Python 3.10.5 (tags/v3.10.5:f377153, Jun  6 2022, 16:14:13) [MSC v.1
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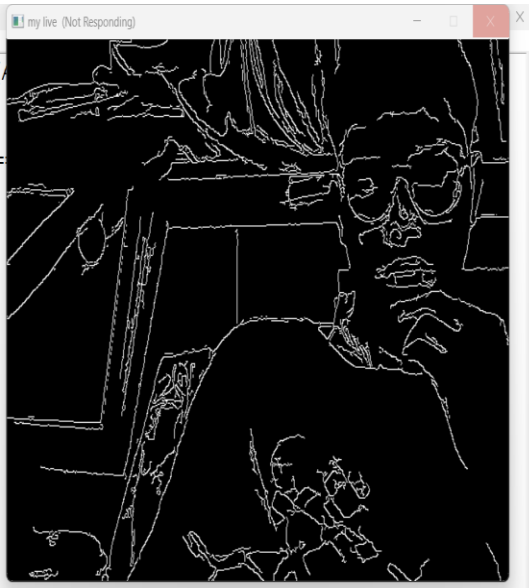
8 for face deetection
9 for starting webcam
10 for getting live sketch
11 for exit
Enter  choice6
ENTER RATIO FOR BREADTH0.5
ENTER RATIO FOR LENGTH0.5
Enter  choice
```

Ln: 22 Col: 13

```
*IDLE Shell 3.10.5*
File  Edit  Shell  Debug  Options  Window  Help
Python 3.10.5 (tags/v3.10.5:f377153, Jun  6 2022, 16:14:13) [MSC v.1929 64 bit (A
Type "help", "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: C:\Users\Himanshu Agarwal\Desktop\RINEX 6\fp.py =
Enter image addressCRICKET TEAM.JPG
IMAGE READED!
 ENTER .....
1for desplaying image
2 for b&w image
3 for binary image
4 for binary b&w image
5 for geeting sketch
6 for  resizing image
7 for entering text into image
8 for face deetection
9 for starting webcam
10 for getting live sketch
11 for exit
Enter  choice7
Enter your name:INDIAN TEAM
enter  x position200
enter  y position100
Enter  choice8
total faces =  5
Enter  choice9
Enter  choice10
Enter  choice
```



Ln: 27 Col: 0