PROJECT : DIABETES PREDICTION SYSTEM

Phase-03

Loading and Pre-Processing the Dataset **ABOUT THIS PHASE :**

In this phase we need to do loading and pre-processing the datasets. Here I explain about what are the process to do this phase.

Step 1:

**Import the dependencies**

In this step we import the library files which are required to run this program code, like modules ( numpy , pandas, sklearn , matpltlib, seaborn)

Step 2:

**Impoting the dataset**

In this step I import PIMA diabetes dataset form the the sklearn module it is used to fetch the data and the data is used as the input of this project.

Step 3:

**Statical measure of data**

In this step I want know some statics about my dataset like mean,count,avg etc,.. and this is the important step in data preprocessing

Step4:

**Data standardization:**

In this step I standardized my dataset with the help of scaler function

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Import the dependencies

import numpy as np

import pandas as pd

from sklearn.preprocessing import StandardScaler from sklearn.model\_selection import train\_test\_split from sklearn import svm

from sklearn.metrics import accuracy\_score Data collection and analysis

PIMA Diabetes Dataset

# loading the dataset to the pandas dataframe diabetes\_dataset = pd.read\_csv('/content/diabetes.csv')

pd.read\_csv?

# printing the first 5 rows of the dataset diabetes\_dataset.head()

output

**Pregnancies Glucose BloodPressure SkinThickness Insulin BMI DiabetesPedigreeFunction Age Outcome**

**0** 6 148 72 35 0 33.6 0.627 50 1 **1** 1 85 66 29 0 26.6 0.351 31 0 **2** 8 183 64 0 0 23.3 0.672 32 1 **3** 1 89 66 23 94 28.1 0.167 21 0 **4** 0 137 40 35 168 43.1 2.288 33 1

# number of rows and column in this dataset

diabetes\_dataset.shape

(768, 9)

# getting the statistical measures of the data

diabetes\_dataset.describe()

**Pregnancies Glucose BloodPressure SkinThickness Insulin BMI D**

**count** 768.000000 768.000000 768.000000 768.000000 768.000000 768.000000

**mean** 3.845052 120.894531 69.105469 20.536458 79.799479 31.992578

**std** 3.369578 31.972618 19.355807 15.952218 115.244002 7.884160

**min** 0.000000 0.000000 0.000000 0.000000 0.000000 0.000000

**25%** 1.000000 99.000000 62.000000 0.000000 0.000000 27.300000

**50%** 3.000000 117.000000 72.000000 23.000000 30.500000 32.000000

**75%** 6.000000 140.250000 80.000000 32.000000 127.250000 36.600000

**max** 17.000000 199.000000 122.000000 99.000000 846.000000 67.100000

diabetes\_dataset['Outcome'].value\_counts()

0 500

1 268

Name: Outcome, dtype: int64

0--> Non-Diabetic

1--> Diabetic

diabetes\_dataset.groupby('Outcome').mean()

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**Pregnancies Glucose BloodPressure SkinThickness Insulin BMI**

**Outcome**

# seperating the data and labels

X = d~~iabetes\_dataset.drop(columns = 'Outcome', axis=1)~~

**0** 3.298000 109.980000 68.184000 19.664000 68.792000 30.304200 Y = diabetes\_dataset['Outcome']

**1** 4.865672 141.257463 70.824627 22.164179 100.335821 35.142537 print(X)

Pregnancies Glucose BloodPressure SkinThickness Insulin BMI \ 0 6 148 72 35 0 33.6 1 1 85 66 29 0 26.6 2 8 183 64 0 0 23.3 3 1 89 66 23 94 28.1 4 0 137 40 35 168 43.1 .. ... ... ... ... ... ... 763 10 101 76 48 180 32.9 764 2 122 70 27 0 36.8 765 5 121 72 23 112 26.2 766 1 126 60 0 0 30.1 767 1 93 70 31 0 30.4

DiabetesPedigreeFunction Age

0 0.627 50

1 0.351 31

2 0.672 32

3 0.167 21

4 2.288 33

.. ... ...

763 0.171 63

764 0.340 27

765 0.245 30

766 0.349 47

767 0.315 23

[768 rows x 8 columns]

print(Y)

0 1

1 0

2 1

3 0

4 1

..

763 0

764 0

765 0

766 1

767 0

Name: Outcome, Length: 768, dtype: int64

Data Standardization

scaler = StandardScaler()

scaler.fit(X)

▾ StandardScaler

StandardScaler()

standardized\_data = scaler.transform(X)

print(standardized\_data)

[[ 0.63994726 0.84832379 0.14964075 ... 0.20401277 0.46849198

1.4259954 ]

[-0.84488505 -1.12339636 -0.16054575 ... -0.68442195 -0.36506078

-0.19067191]

[ 1.23388019 1.94372388 -0.26394125 ... -1.10325546 0.60439732

-0.10558415]

...

[ 0.3429808 0.00330087 0.14964075 ... -0.73518964 -0.68519336

-0.27575966]

[-0.84488505 0.1597866 -0.47073225 ... -0.24020459 -0.37110101

1.17073215]

[-0.84488505 -0.8730192 0.04624525 ... -0.20212881 -0.47378505

-0.87137393]]

https://colab.research.google.com/drive/1EukAHBByTqP2yW-hBZ0B4BrgK1uNtrpQ?hl=en#printMode=true 2/3

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X = standardized\_data

Y = diabetes\_dataset['Outcome']

print(X)

print(Y)

[[ 0.63994726 0.84832379 0.14964075 ... 0.20401277 0.46849198 1.4259954 ]

[-0.84488505 -1.12339636 -0.16054575 ... -0.68442195 -0.36506078 -0.19067191]

[ 1.23388019 1.94372388 -0.26394125 ... -1.10325546 0.60439732 -0.10558415]

...

[ 0.3429808 0.00330087 0.14964075 ... -0.73518964 -0.68519336 -0.27575966]

[-0.84488505 0.1597866 -0.47073225 ... -0.24020459 -0.37110101 1.17073215]

[-0.84488505 -0.8730192 0.04624525 ... -0.20212881 -0.47378505 -0.87137393]]

0 1

1 0

2 1

3 0

4 1

..

763 0

764 0

765 0

766 1

767 0

Name: Outcome, Length: 768, dtype: int64

https://colab.research.google.com/drive/1EukAHBByTqP2yW-hBZ0B4BrgK1uNtrpQ?hl=en#printMode=true 3/3