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```
import numpy as np
import pandas as pd
df=pd.read_csv("/content/diabetes.csv")
df
```

	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
...	...	...	...	...	...	...	...	...	...
763	10	101	76	48	180	32.9	0.171	63	0
764	2	122	70	27	0	36.8	0.340	27	0
765	5	121	72	23	112	26.2	0.245	30	0
766	1	126	60	0	0	30.1	0.349	47	1
767	1	93	70	31	0	30.4	0.315	23	0

768 rows × 9 columns

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```
x=df.iloc[:,:-1].values
x
```

```
array([[  6.   , 148.   ,  72.   , ...,  33.6  ,   0.627,  50.   ],
       [  1.   ,  85.   ,  66.   , ...,  26.6  ,   0.351,  31.   ],
       [  8.   , 183.   ,  64.   , ...,  23.3  ,   0.672,  32.   ],
       ...,
       [  5.   , 121.   ,  72.   , ...,  26.2  ,   0.245,  30.   ],
       [  1.   , 126.   ,  60.   , ...,  30.1  ,   0.349,  47.   ],
       [  1.   ,  93.   ,  70.   , ...,  30.4  ,   0.315,  23.   ]])
```

```
[ ] y=df.iloc[:,-1].values
    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, 0, 1, 0, 0, 0, 0, 0, 1, 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, 0, 1, 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, 0, 0, 0, 0, 0, 1, 0, 0, 1, 1, 0, 0, 0, 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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```
[ ] from sklearn.model_selection import train_test_split
    x_train,x_test,y_train,y_test=train_test_split(x,y,test_size=0.30,random_state=42)
```

```
[ ] x_train
```

```
array([[  1.   ,  95.   ,  60.   , ...,  23.9  ,   0.26 ,  22.   ],
       [  5.   , 105.   ,  72.   , ...,  36.9  ,   0.159,  28.   ],
       [  0.   , 135.   ,  68.   , ...,  42.3  ,   0.365,  24.   ],
       ...,
       [ 10.   , 101.   ,  86.   , ...,  45.6  ,   1.136,  38.   ],
       [  0.   , 141.   ,   0.   , ...,  42.4  ,   0.205,  29.   ],
       [  0.   , 125.   ,  96.   , ...,  22.5  ,   0.262,  21.   ]])
```

```
[ ] x_test
```

```
array([[6.00e+00, 9.80e+01, 5.80e+01, ..., 3.40e+01, 4.30e-01, 4.30e+01],
       [2.00e+00, 1.12e+02, 7.50e+01, ..., 3.57e+01, 1.48e-01, 2.10e+01],
       [2.00e+00, 1.08e+02, 6.40e+01, ..., 3.08e+01, 1.58e-01, 2.10e+01],
       ...,
       [0.00e+00, 1.27e+02, 8.00e+01, ..., 3.63e+01, 8.04e-01, 2.30e+01],
       [6.00e+00, 1.05e+02, 7.00e+01, ..., 3.08e+01, 1.22e-01, 3.70e+01],
       [5.00e+00, 7.70e+01, 8.20e+01, ..., 3.58e+01, 1.56e-01, 3.50e+01]])
```

```
[ ] y_train
```

```
array([0, 0, 1, 0, 0, 0, 0, 1, 1, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 1, 0, 1,
```

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```
[ ] y_test
```

```
array([0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 1, 0, 0, 1, 0, 0, 1, 1, 0, 0,
       0, 0, 0, 1, 0, 0, 1, 0, 1, 1, 1, 1, 0, 1, 1, 1, 0, 1, 0, 0, 0, 1,
       0, 1, 1, 0, 0, 0, 0, 1, 1, 1, 0, 0, 0, 0, 0, 1, 1, 0, 0, 1, 0, 0,
       0, 1, 0, 1, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 1, 1, 0, 0, 0, 1, 1, 1,
       0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 1, 0, 0, 0, 1, 0, 1, 0, 0, 1, 1, 1,
       0, 0, 0, 1, 0, 0, 1, 0, 0, 0, 0, 0, 1, 0, 0, 0, 1, 1, 1, 0, 1, 1,
       0, 1, 1, 0, 1, 1, 1, 0, 0, 0, 0, 0, 0, 1, 0, 0, 1, 0, 0, 1, 0,
       0, 1, 0, 0, 1, 0, 1, 1, 0, 0, 0, 1, 0, 0, 0, 1, 0, 1, 1, 0, 0, 0,
       0, 0, 1, 1, 0, 0, 0, 1, 1, 0, 0, 0, 1, 0, 1, 0, 1, 0, 0, 0, 0, 0,
       1, 1, 0, 0, 1, 0, 0, 0, 0, 0, 1, 1, 0, 0, 0, 0, 1, 0, 0, 1, 0, 0,
       1, 0, 0, 0, 0, 0, 1, 1, 0, 0, 0])
```

```
[ ] from sklearn.preprocessing import StandardScaler
    scaler=StandardScaler()
    scaler.fit(x_train)
    x_train=scaler.transform(x_train)
    x_test=scaler.transform(x_test)
```

```
[ ] x_train
```

```
array([[-0.8362943 , -0.80005088, -0.53576428, ..., -1.06015343,
        -0.61421636, -0.94861028],
       [ 0.39072767, -0.49054341,  0.12804365, ...,  0.64646721,
        -0.90973787, -0.43466673],
       [-1.14304979,  0.43797901, -0.09322566, ...,  1.35537117,
```

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```
[ ] x_train
```

```
array([[-0.8362943 , -0.80005088, -0.53576428, ..., -1.06015343,
        -0.61421636, -0.94861028],
       [ 0.39072767, -0.49054341,  0.12804365, ...,  0.64646721,
        -0.90973787, -0.43466673],
       [-1.14304979,  0.43797901, -0.09322566, ...,  1.35537117,
        -0.30699103, -0.77729576],
       ...,
       [ 1.92450513, -0.6143464 ,  0.90248622, ...,  1.78859026,
         1.94892066,  0.42190587],
       [-1.14304979,  0.62368349, -3.8548039 , ...,  1.36849903,
        -0.77514391, -0.34900947],
       [-1.14304979,  0.12847154,  1.45565949, ..., -1.24394334,
        -0.60836445, -1.03426754]])
```

```
[ ] x_test
```

```
array([[ 0.69748316, -0.70719864, -0.64639893, ...,  0.26575953,
        -0.11680393,  0.85019217],
       [-0.52953881, -0.27388818,  0.29399563, ...,  0.488933  ,
        -0.94192338, -1.03426754],
       [-0.52953881, -0.39769117, -0.31449497, ..., -0.1543317 ,
        -0.91266382, -1.03426754],
       ...,
       [-1.14304979,  0.19037303,  0.57058226, ...,  0.56770011,
         0.97750343, -0.86295302],
       [ 0.69748316, -0.49054341,  0.01740899, ..., -0.1543317 ,
        -1.01799822,  0.33624861],
```

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```
 -0.91851573,  0.16493409]])
```

```
#support vector machine
from sklearn.svm import SVC
model=SVC()
model.fit(x_train,y_train)
y_pred=model.predict(x_test)
y_pred
```

```
array([0, 0, 0, 0, 0, 0, 0, 1, 1, 1, 0, 1, 0, 0, 0, 0, 0, 0, 1, 1, 0, 0,
       0, 0, 1, 1, 0, 0, 0, 0, 0, 1, 1, 1, 1, 1, 0, 0, 0, 1, 0, 0, 0, 0,
       0, 1, 1, 0, 0, 1, 0, 1, 1, 0, 0, 0, 1, 0, 0, 1, 1, 0, 0, 0, 0, 1,
       0, 1, 0, 1, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 1, 1, 0,
       0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 1, 0, 0, 1, 1, 0, 0, 1, 0, 1,
       0, 0, 0, 1, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 1, 1, 1, 1,
       0, 0, 1, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0,
       0, 0, 0, 1, 1, 0, 1, 1, 0, 0, 0, 1, 0, 0, 1, 1, 1, 0, 1, 1, 1, 0,
       0, 0, 0, 0, 0, 1, 0, 1, 1, 0, 0, 0, 1, 1, 0, 0, 1, 0, 0, 0, 0, 0,
       0, 1, 0, 0, 0, 0, 1, 0, 0, 0, 1, 1, 0, 0, 0, 0, 1, 0, 1, 0, 0, 1,
       1, 0, 0, 0, 0, 1, 0, 0, 0, 0, 0])
```

```
[ ] from sklearn.metrics import confusion_matrix,accuracy_score
    mat=confusion_matrix(y_pred,y_test)
    mat
```

```
array([[125,  33],
       [ 26,  47]])
```

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```
[ ] from sklearn.metrics import confusion_matrix,accuracy_score
    mat=confusion_matrix(y_pred,y_test)
    mat
```

```
array([[125,  33],
       [ 26,  47]])
```

```
[ ] score=accuracy_score(y_pred,y_test)
    score
```

```
0.7445887445887446
```

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