In [9]:
```
import pandas as pd
import numpy as np
from sklearn.model_selection import train_test_split
from sklearn.preprocessing import StandardScaler
from sklearn.neighbors import KNeighborsClassifier
from sklearn.metrics import confusion_matrix, accuracy_score, precision_score,
```

In [10]:
```
df=pd.read_csv('diabetes.csv')
```

In [4]:
```
print(df.head())
```

```
   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

   Pedigree  Age  Outcome
0     0.627   50        1
1     0.351   31        0
2     0.672   32        1
3     0.167   21        0
4     2.288   33        1
```

In [5]:
```
X=df.drop('Outcome',axis=True)
Y=df['Outcome']
```

In [6]:
```
X_train,X_test,Y_train,Y_test=train_test_split(X,Y,test_size=0.2,random_state=
```

In [12]:
```
sc=StandardScaler()
X_train=sc.fit_transform(X_train)
X_test=sc.transform(X_test)
```

```
C:\Users\suraj\AppData\Local\Programs\Python\Python312\Lib\site-packages\sklear
n\utils\validation.py:2732: UserWarning: X has feature names, but StandardScale
r was fitted without feature names
  warnings.warn(
```

In [14]:
```
#Knn
knn=KNeighborsClassifier(n_neighbors=5)
knn.fit(X_train,Y_train)
```

Out[14]:
```
KNeighborsClassifier()
```

In [15]:
```
y_pred_knn=knn.predict(X_test)
```

In [16]:
```
print("Confusion Matrix: ",confusion_matrix(Y_test,y_pred_knn))
```

```
Confusion Matrix:  [[ 1 98]
 [ 1 54]]
```

In [20]:
```
print("Accuracy: ",accuracy_score(Y_test,y_pred_knn))
Error_rate=1-Accuracy
print("Error_rate:",Error_rate)
print("precision: ",precision_score(Y_test,y_pred_knn))
print("Recall: ",recall_score(Y_test,y_pred_knn))
```

```
Accuracy:  0.35714285714285715
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[20], line 2
      1 print("Accuracy: ",accuracy_score(Y_test,y_pred_knn))
----> 2 Error_rate=1-Accuracy
      3 print("Error_rate:",Error_rate)
      4 print("precision: ",precision_score(Y_test,y_pred_knn))

NameError: name 'Accuracy' is not defined
```

In [ ]: