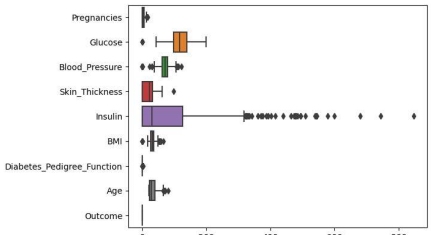
In [1]:
```
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
import nungy as ng
from plotly import __version__
%matplotlib inline

from sklearn.naive_bayes import GaussianNB
from sklearn.metrics import confusion_matrix, accuracy_score
from sklearn.metrics import classification_report
from sklearn.model_selection import GridSearchCV
from sklearn import metrics
```

In [2]:
```
df = pd.read_csv('Pima_diabetes.csv')
```

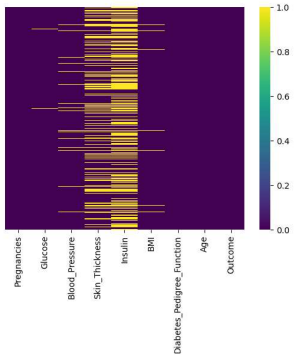
In [3]:
```
sns.boxplot(data=df,orient="h")
```

Out[3]:
<AxesSubplot:>



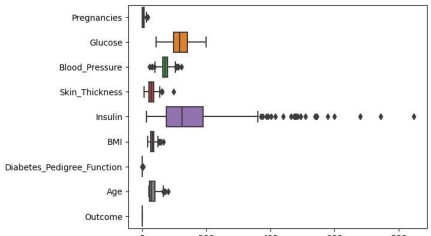
In [4]:
```
df[['Glucose','Blood_Pressure','Skin_Thickness','Insulin','BMI']] = df[['Glucose','Blood_Pressure','Skin_Thickness','Insulin','BMI']].replace(0,np.NaN)
sns.heatmap(df.isnull(), yticklabels=False, cmap='viridis')
```

Out[4]:
<AxesSubplot:>



In [5]:
```
sns.boxplot(data=df,orient="h")
```

Out[5]:
<AxesSubplot:>



In [6]:
```
def median_target(var):
    temp = df[df[var].notnull()]
    temp = temp[[var, 'Outcome']].groupby(['Outcome'])[[var]].median().reset_index()
    return temp
```

In [7]:
```
median_target('Insulin')
```

Out[7]:

	Outcome	Insulin
0	0	102.5
1	1	169.5

In [8]:
```
df.loc[(df['Outcome'] == 0 ) & (df['Insulin'].isnull()), 'Insulin'] = 102.5
df.loc[(df['Outcome'] == 1 ) & (df['Insulin'].isnull()), 'Insulin'] = 169.5
```

In [9]:
```
median_target('Glucose')
```

Out[9]:

	Outcome	Glucose
0	0	107.0
1	1	140.0

In [10]:
```
df.loc[(df['Outcome'] == 0 ) & (df['Glucose'].isnull()), 'Glucose'] = 107
df.loc[(df['Outcome'] == 1 ) & (df['Glucose'].isnull()), 'Glucose'] = 140
```

In [11]:
```
median_target('Skin_Thickness')
```

Out[11]:

	Outcome	Skin_Thickness
0	0	27.0
1	1	32.0

In [12]:
```
df.loc[(df['Outcome'] == 0 ) & (df['Skin_Thickness'].isnull()), 'Skin_Thickness'] = 27
df.loc[(df['Outcome'] == 1 ) & (df['Skin_Thickness'].isnull()), 'Skin_Thickness'] = 32
```

In [13]:
```
median_target('Blood_Pressure')
```

Out[13]:

	Outcome	Blood_Pressure
0	0	70.0
1	1	74.5

In [14]:
```
df.loc[(df['Outcome'] == 0 ) & (df['Blood_Pressure'].isnull()), 'Blood_Pressure'] = 70
df.loc[(df['Outcome'] == 1 ) & (df['Blood_Pressure'].isnull()), 'Blood_Pressure'] = 74.5
```

In [15]:
```
median_target('BMI')
```

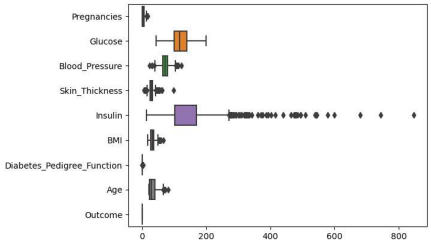
Out[15]:

	Outcome	BMI
0	0	30.1
1	1	34.3

In [16]:
```
df.loc[(df['Outcome'] == 0 ) & (df['BMI'].isnull()), 'BMI'] = 30.1
df.loc[(df['Outcome'] == 1 ) & (df['BMI'].isnull()), 'BMI'] = 34.3
```

In [17]:
```
sns.boxplot(data=df,orient="h")
```

Out[17]:
<AxesSubplot:>



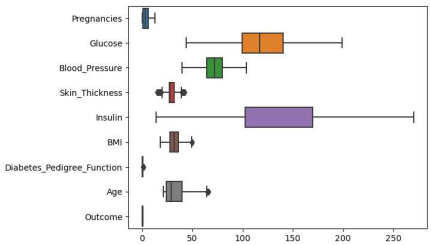
In [18]:
```
necessary_columns = ['Age', 'Pregnancies', 'Glucose', 'Blood_Pressure', 'Skin_thickness', 'Insulin',
       'BMI', 'Diabetes_Pedigree_Function']


for x in necessary_columns:
    q75,q25 = np.percentile(df.loc[:,x],[75,25])
    intr_qr = q75-q25

    max1 = q75+(1.5*intr_qr)
    min1 = q25-(1.5*intr_qr)

    df.loc[df[x] < min1,x] = np.NaN
    df.loc[df[x] > max1,x] = np.NaN
```

In [19]:
```
df.isnull().sum()
# Replace Nan Values with median of that column and make new column as df_copy[feature_nan].
# We saw on df.head() that some features contain 0, it doesn't make sense here and this indicates missing value.
# Below we replace 0 value by NaN:
# Give it value 1 is Nan is present else 0
for feature in necessary_columns:
    median_value = df[feature].median()
    df[feature].fillna(median_value, inplace = True)

df.isnull().sum()
```

Out[19]:
```
Pregnancies                 0
Glucose                     0
Blood_Pressure              0
Skin_Thickness              0
Insulin                     0
BMI                         0
Diabetes_Pedigree_Function  0
Age                         0
Outcome                     0
dtype: int64
```

In [20]:
```
sns.boxplot(data=df,orient="h")
```

Out[20]:
```
<AxesSubplot:>
```



In [21]:
```
"""
for x in necessary_columns:
    q75,q25 = np.percentile(df.loc[:,x],[75,25])
    intr_qr = q75-q25

    max1 = q75+(1.5*intr_qr)
    min1 = q25-(1.5*intr_qr)

    df.loc[df[x] < min1,x] = np.NaN
    df.loc[df[x] > max1,x] = np.NaN

df.isnull().sum()
# Replace Nan Values with median of that column and make new column as df_copy[feature_nan].
# We saw on df.head() that some features contain 0, it doesn't make sense here and this indicates missing value.
# Below we replace 0 value by NaN:
# Give it value 1 is Nan is present else 0
for feature in necessary_columns:
    median_value = df[feature].median()
    df[feature].fillna(median_value, inplace = True)

df.isnull().sum()
"""
```

Out[21]:
```
"\nfor x in necessary_columns:\n    q75,q25 = np.percentile(df.loc[:,x],[75,25])\n    intr_qr = q75-q25\n\n    max1 = q75+(1.5*intr_qr)\n    min1 = q25-(1.5*intr_qr)\n\n    df.loc[df[x] < min1,x] = np.NaN\n    df.loc[df[x] > max1,x] = np.NaN\n\ndf.isnull().sum()\n# Replace Nan Values with median of that column and make new column as df_copy[feature_nan]. \n# We saw on df.head() that some features contain 0, it doesn't make sense here and this indicates missing value.\n# Below we replace 0 value by NaN:\n# Give it value 1 is Nan is present else 0 \nfor feature in necessary_columns:\n    median_value = df[feature].median()\n    df[feature].fillna(median_value, inplace = True)\n\ndf.isnull().sum()\n"
```

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [22]:
```
from sklearn.model_selection import train_test_split
X = df.drop(columns='Outcome')
y = df['Outcome']
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.20, random_state=0)
```

In [23]:
```
X.columns
```

Out[23]:
```
Index(['Pregnancies', 'Glucose', 'Blood_Pressure', 'Skin_Thickness', 'Insulin',
       'BMI', 'Diabetes_Pedigree_Function', 'Age'],
      dtype='object')
```

In [24]:
```
# apply normalization techniques
for column in X.columns:
    X[column] = (X[column] - X[column].min()) / (X[column].max() - X[column].min())
```

K-Means Clustering

In [241…
```
import sklearn
from sklearn.cluster import KMeans
KMeans_Clustering = KMeans(n_clusters =2, random_state=42)
KMeans_Clustering.fit(X_train)

print("Train results:", KMeans_Clustering.score(X_train, y_train))
print("Test results:", KMeans_Clustering.score(X_test, y_test))

y_pred = KMeans_Clustering.predict(X_test)
print("Accuracy Score =", format(metrics.accuracy_score(y_test, y_pred)))
print(confusion_matrix(y_test, y_pred))
print(classification_report(y_test,y_pred))
```

```
Train results: -1022973.8482708535
Test results: -241311.46789782724
Accuracy Score = 0.8766233766233766
[[97 10]
 [ 9 38]]
              precision    recall  f1-score   support

           0       0.92      0.91      0.91       107
           1       0.79      0.81      0.80        47

    accuracy                           0.88       154
   macro avg       0.85      0.86      0.86       154
weighted avg       0.88      0.88      0.88       154
```

In [ ]:

Xgboost

In [169…
```
from sklearn.model_selection import GridSearchCV, RandomizedSearchCV, cross_val_score
import xgboost

param_combinations = {
    'learning_rate': np.arange(0.0005, 1, 0.01),
    'max_depth': np.arange(3, 20),
    'min_child_weight': np.arange(1, 10, 2),
    'gamma': np.arange(0.0, 1, 0.1),
}

XGB = xgboost.XGBClassifier()
perfect_parans = RandomizedSearchCV(XGB, param_distributions=param_combinations, n_iter=6, n_jobs=-1, scoring='roc_auc')

perfect_parans.fit(X, y)
perfect_parans.best_params_
```

Out[169]:
```
{'min_child_weight': 7,
 'max_depth': 17,
 'learning_rate': 0.8504999999999999,
 'gamma': 0.7000000000000001}
```

In [173…
```
model5 = xgboost.XGBClassifier(min_child_weight=5, max_depth=8, learning_rate=0.295, gamma=0.1)
score = cross_val_score(model5, X, y, cv=10)
print(score)
print('Mean: ', score.mean())
```

```
[0.8961039  0.92207792 0.81818182 0.84415584 0.84415584 0.90909091
 0.90909091 0.8961039  0.85526316 0.90789474]
Mean:  0.8802118933697882
```

Adaboost

In [198…
```
import pandas as pd

import warnings
warnings.filterwarnings('ignore')

from sklearn.model_selection import GridSearchCV
from sklearn.ensemble import AdaBoostClassifier
```

In [212…
```
clf = AdaBoostClassifier(n_estimators=30, random_state=42)
clf.fit(X_train, y_train)
print("Train results:", clf.score(X_train, y_train))
print("Test results:", clf.score(X_test, y_test))

y_pred = clf.predict(X_test)
print("Accuracy Score =", format(metrics.accuracy_score(y_test, y_pred)))
print(confusion_matrix(y_test, y_pred))
print(classification_report(y_test,y_pred))
```

```
Train results: 0.8957654723127035
Test results: 0.8961038961038961
Accuracy Score = 0.8961038961038961
[[98  9]
 [ 7 40]]
              precision    recall  f1-score   support

           0       0.93      0.92      0.92       107
           1       0.82      0.85      0.83        47

    accuracy                           0.90       154
   macro avg       0.87      0.88      0.88       154
weighted avg       0.90      0.90      0.90       154
```

In [204…
```
clf = AdaBoostClassifier()
parameters = {
    'n_estimators': range(1,100)
}
clf = GridSearchCV(ab_clf, parameters, cv=10)
clf.fit(X_train, y_train)
```

Out[204]:
```
GridSearchCV
 estimator: AdaBoostClassifier
      AdaBoostClassifier
```

In [205…
```
# print best parameter after tuning
print(clf.best_params_)
# print how our model looks after hyper-parameter tuning
print(clf.best_estimator_)
```

```
{'n_estimators': 77}
AdaBoostClassifier(n_estimators=77, random_state=42)
```

Logitboost

In [216…
```
#!pip install logitboost
```

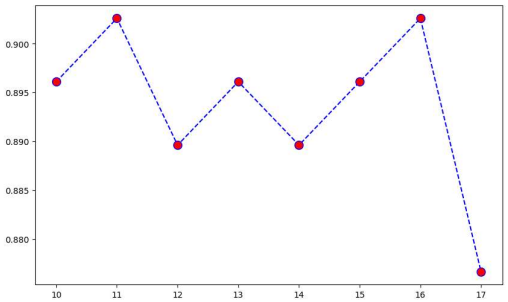
```
Collecting logitboost
  Downloading logitboost-0.7-py3-none-any.whl (9.1 kB)
Requirement already satisfied: scikit-learn in c:\users\hp\anaconda3\lib\site-packages (from logitboost) (1.1.2)
Requirement already satisfied: scipy in c:\users\hp\anaconda3\lib\site-packages (from logitboost) (1.7.3)
Requirement already satisfied: numpy in c:\users\hp\anaconda3\lib\site-packages (from logitboost) (1.21.5)
Requirement already satisfied: joblib>=1.0.0 in c:\users\hp\anaconda3\lib\site-packages (from scikit-learn->logitboost) (1.1.0)
Requirement already satisfied: threadpoolctl>=2.0.0 in c:\users\hp\anaconda3\lib\site-packages (from scikit-learn->logitboost) (2.2.0)
Installing collected packages: logitboost
Successfully installed logitboost-0.7
```

In [237…
```
from logitboost import LogitBoost
lboost = LogitBoost(n_estimators=16, random_state=0)
lboost.fit(X_train, y_train)

print("Train results:", lboost.score(X_train, y_train))
print("Test results:", lboost.score(X_test, y_test))

y_pred_ann = lboost.predict(X_test)
print("Test Accuracy Score =", format(metrics.accuracy_score(y_test, y_pred_ann)))

# print classification metrics
print(metrics.classification_report(y_test, y_pred_ann, target_names=['Positive', 'Negative']))

# print confusion matrix
print("Confusion matrix:")
print(metrics.confusion_matrix(y_test, y_pred_ann))
```

```
Train results: 0.8941368078175895
Test results: 0.9025974025974026
Test Accuracy Score = 0.9025974025974026
              precision    recall  f1-score   support

    Positive       0.95      0.91      0.93       107
    Negative       0.81      0.89      0.85        47

    accuracy                           0.90       154
   macro avg       0.88      0.90      0.89       154
weighted avg       0.91      0.90      0.90       154

Confusion matrix:
[[97 10]
 [ 5 42]]
```

In [238…
```
rate = []
xxx = range(10,18)
for i in xxx:
    lboost = LogitBoost(n_estimators=i, random_state=0)
    lboost.fit(X_train, y_train)

    y_pred = lboost.predict(X_test)
    rate.append(metrics.accuracy_score(y_test, y_pred))

plt.figure(figsize=(10,6))
plt.plot(xxx, rate, color='blue', linestyle='dashed',marker='o', markerfacecolor='red', markersize=10)

"""
"""
```

Out[238]:
```
'\n\n'
```



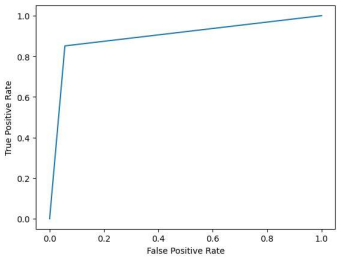
Gradient Boosting

In [25]:
```
from sklearn.ensemble import GradientBoostingClassifier
from sklearn.model_selection import GridSearchCV
from sklearn.metrics import accuracy_score
from sklearn.metrics import precision_score
from sklearn.metrics import recall_score
from sklearn.metrics import make_scorer
```

In [26]:
```
clf = GradientBoostingClassifier(n_estimators=55, learning_rate=0.25, max_depth=1, loss='log_loss',random_state=42).fit(X_train, y_train)
y_pred = clf.predict(X_test)
print("Accuracy Score =", format(metrics.accuracy_score(y_test, y_pred)))
print(confusion_matrix(y_test, y_pred))
print(classification_report(y_test,y_pred))
```

```
Accuracy Score = 0.9155844155844156
[[101   6]
 [  7  40]]
              precision    recall  f1-score   support

           0       0.94      0.94      0.94       107
           1       0.87      0.85      0.86        47

    accuracy                           0.92       154
   macro avg       0.90      0.90      0.90       154
weighted avg       0.92      0.92      0.92       154
```

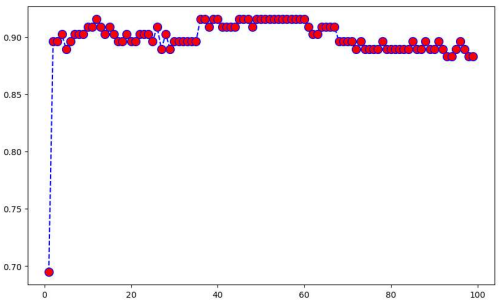
In [27]:
```
# get roc curve points
fpr, tpr, _ = metrics.roc_curve(y_test,  y_pred)

# create ROC curve
plt.plot(fpr,tpr)
plt.ylabel('True Positive Rate')
plt.xlabel('False Positive Rate')
plt.show()

# calculate AUC
auc = metrics.roc_auc_score(y_test, y_pred)
print('AUC: %.3f' % auc)
```




```
AUC: 0.897
```

In [28]:
```
rate = []
xxx = range(1,100)
for i in xxx:
    clf = GradientBoostingClassifier(n_estimators=i, learning_rate=0.25, max_depth=1, loss='log_loss',random_state=42).fit(X_train, y_train)
    y_pred = clf.predict(X_test)
    rate.append(metrics.accuracy_score(y_test, y_pred))

plt.figure(figsize=(10,6))
plt.plot(xxx, rate, color='blue', linestyle='dashed',marker='o', markerfacecolor='red', markersize=10)
```

Out[28]: [<matplotlib.lines.Line2D at 0x2268afeb610>]



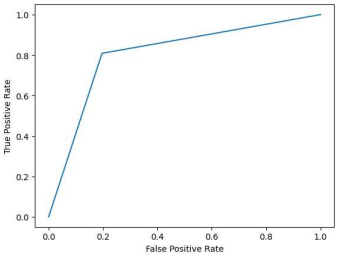
Naive Bayes

Referred to this link https://hub.packtpub.com/implementing-3-naive-bayes-classifiers-in-scikit-learn/ for selecting whether to choose Gaussian Bernoulli Naive Bayes or Naive Bayes or Multinomial Naive Bayes

In [29]:
```
from sklearn.naive_bayes import GaussianNB
from sklearn.metrics import confusion_matrix, accuracy_score
from sklearn.metrics import classification_report
from sklearn.model_selection import GridSearchCV
from sklearn import metrics
from sklearn.model_selection import KFold


nb_classifier = GaussianNB()
params_NB = {
    'var_smoothing': [1, 1e-1, 1e-2, 1e-3, 1e-4, 1e-5, 1e-6, 1e-7, 1e-8, 1e-9, 1e-10, 1e-11, 1e-12, 1e-13, 1e-14, 1e-15]
}
gs_NB = GridSearchCV(estimator=nb_classifier, param_grid=params_NB, cv=KFold(n_splits=10), verbose=1, scoring='accuracy')


# fitting the model for grid search
gs_NB.fit(X_train, y_train)
# print best parameter after tuning
print(gs_NB.best_params_)
# print how our model looks after hyper-parameter tuning
print(gs_NB.best_estimator_)

y_pred = gs_NB.predict(X_test)
print("Accuracy Score =", format(metrics.accuracy_score(y_test, y_pred)))
print(confusion_matrix(y_test, y_pred))
print(classification_report(y_test,y_pred))



from sklearn.naive_bayes import MultinomialNB
mnb = MultinomialNB()
mnb.fit(X_train, y_train)
y_pred = mnb.predict(X_test)
print("Accuracy Score =", format(metrics.accuracy_score(y_test, y_pred)))
print(confusion_matrix(y_test, y_pred))
print(classification_report(y_test,y_pred))



#-------------------------------------------------------------------------------
from sklearn.naive_bayes import ComplementNB
cnb = ComplementNB()
cnb.fit(X_train, y_train)
y_pred = cnb.predict(X_test)
print("Accuracy Score =", format(metrics.accuracy_score(y_test, y_pred)))
print(confusion_matrix(y_test, y_pred))
print(classification_report(y_test,y_pred))
#-------------------------------------------------------------------------------
```

```
Fitting 10 folds for each of 16 candidates, totalling 160 fits
{'var_smoothing': 0.01}
GaussianNB(var_smoothing=0.01)
Accuracy Score = 0.8766233766233766
[[94 13]
 [ 6 41]]
              precision    recall  f1-score   support

           0       0.94      0.88      0.91       107
           1       0.76      0.87      0.81        47

    accuracy                           0.88       154
   macro avg       0.85      0.88      0.86       154
weighted avg       0.88      0.88      0.88       154

Accuracy Score = 0.8246753246753247
[[90 17]
 [10 37]]
              precision    recall  f1-score   support

           0       0.90      0.84      0.87       107
           1       0.69      0.79      0.73        47

    accuracy                           0.82       154
   macro avg       0.79      0.81      0.80       154
weighted avg       0.83      0.82      0.83       154

Accuracy Score = 0.8051948051948052
[[86 21]
 [ 9 38]]
              precision    recall  f1-score   support

           0       0.91      0.80      0.85       107
           1       0.64      0.81      0.72        47

    accuracy                           0.81       154
   macro avg       0.77      0.81      0.78       154
weighted avg       0.83      0.81      0.81       154
```

In [30]:
```
# get roc curve points
fpr, tpr, _ = metrics.roc_curve(y_test,  y_pred)

# create ROC curve
plt.plot(fpr,tpr)
plt.ylabel('True Positive Rate')
plt.xlabel('False Positive Rate')
plt.show()

# calculate AUC
auc = metrics.roc_auc_score(y_test, y_pred)
print('AUC: %.3f' % auc)
```




```
AUC: 0.806
```

Logistic Regression

In [31]:
```
from sklearn.linear_model import LogisticRegression
from sklearn.model_selection import KFold

parameters = {
    'max_iter':[25, 50, 100, 150],
    'penalty' : ['l1', 'l2'],
    'C' : [0.001, 0.01, 0.1, 0.4, 0.5, 0.10, 0.30, 0.50, 1, 5,10, 20, 100]
    }
lg = LogisticRegression()

# perform cross validation of 10 folds
cv = KFold(n_splits=10)

clf_lg = GridSearchCV(lg, param_grid = parameters, cv = cv, verbose=True)

clf_lg.fit(X_train, y_train)

# print best accuracy scores and hyperparameters
print(clf_lg.best_params_)
print("Train results:", clf_lg.score(X_train, y_train))
print("Test results:", clf_lg.score(X_test, y_test))

y_pred_ann = clf_lg.predict(X_test)
print("Test Accuracy Score =", format(metrics.accuracy_score(y_test, y_pred_ann)))

# print classification metrics
print(metrics.classification_report(y_test, y_pred_ann, target_names=['Positive', 'Negative']))

# print confusion matrix
print("Confusion matrix:")
print(metrics.confusion_matrix(y_test, y_pred_ann))
```

```
Fitting 10 folds for each of 104 candidates, totalling 1040 fits
```

```
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
```

```
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
```

```
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
```

```
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
```

```
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
```

```
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
```

```
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
```

```
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
```

```
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
```

```
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
```

```
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
```

```
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
```

```
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
```

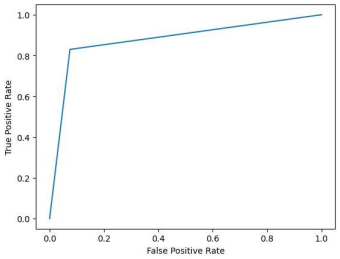
```
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
```

```
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
```

```
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py:444: ConvergenceWarning: lbfgs failed to converge (status=1):
STOP: TOTAL NO. of ITERATIONS REACHED LIMIT.

Increase the number of iterations (max_iter) or scale the data as shown in:
    https://scikit-learn.org/stable/modules/preprocessing.html
Please also refer to the documentation for alternative solver options:
    https://scikit-learn.org/stable/modules/linear_model.html#logistic-regression
  n_iter_i = _check_optimize_result(
C:\Users\hp\anaconda3\lib\site-packages\sklearn\model_selection\_validation.py:378: FitFailedWarning:
520 fits failed out of a total of 1040.
The score on these train-test partitions for these parameters will be set to nan.
If these failures are not expected, you can try to debug them by setting error_score='raise'.

Below are more details about the failures:
--------------------------------------------------------------------------------
520 fits failed with the following error:
Traceback (most recent call last):
  File "C:\Users\hp\anaconda3\lib\site-packages\sklearn\model_selection\_validation.py", line 686, in _fit_and_score
    estimator.fit(X_train, y_train, **fit_params)
  File "C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py", line 1091, in fit
    solver = _check_solver(self.solver, self.penalty, self.dual)
  File "C:\Users\hp\anaconda3\lib\site-packages\sklearn\linear_model\_logistic.py", line 61, in _check_solver
    raise ValueError(
ValueError: Solver lbfgs supports only 'l2' or 'none' penalties, got l1 penalty.

  warnings.warn(some_fits_failed_message, FitFailedWarning)
C:\Users\hp\anaconda3\lib\site-packages\sklearn\model_selection\_search.py:953: UserWarning: One or more of the test scores are non-finite: [       nan 0.73455843        nan 0.74111581        nan 0.81099947
        nan 0.80774722        nan 0.74436806        nan 0.74923321
        nan 0.80769434        nan 0.81094659        nan 0.74108937
        nan 0.74428874        nan 0.80610788        nan 0.80444209
        nan 0.74272871        nan 0.75081967        nan 0.80124273
        nan 0.80288207        nan 0.74272871        nan 0.74108937
        nan 0.80118985        nan 0.80452142        nan 0.74108937
        nan 0.74428874        nan 0.80610788        nan 0.80444209
        nan 0.74272871        nan 0.75904283        nan 0.79957694
        nan 0.80285563        nan 0.74272871        nan 0.74108937
        nan 0.80118985        nan 0.80452142        nan 0.74272871
        nan 0.73463776        nan 0.80613432        nan 0.80616076
        nan 0.74108937        nan 0.74275516        nan 0.80613432
        nan 0.80941301        nan 0.74108937        nan 0.7460074
        nan 0.80936013        nan 0.80613432        nan 0.73945003
        nan 0.74767319        nan 0.80452142        nan 0.80613432
        nan 0.73945003        nan 0.74920677        nan 0.80941301
        nan 0.80616076]
  warnings.warn(
```

```
{'C': 0.001, 'max_iter': 100, 'penalty': 'l2'}
Train results: 0.8127035830618893
Test results: 0.8961038961038961
Test Accuracy Score = 0.8961038961038961
              precision    recall  f1-score   support

    Positive       0.93      0.93      0.93       107
    Negative       0.83      0.83      0.83        47

    accuracy                           0.90       154
   macro avg       0.88      0.88      0.88       154
weighted avg       0.90      0.90      0.90       154

Confusion matrix:
[[99  8]
 [ 8 39]]
```

In [32]:
```
# get roc curve points
fpr, tpr, _ = metrics.roc_curve(y_test,  y_pred_ann)

# create ROC curve
plt.plot(fpr,tpr)
plt.ylabel('True Positive Rate')
plt.xlabel('False Positive Rate')
plt.show()

# calculate AUC
auc = metrics.roc_auc_score(y_test, y_pred_ann)
print('AUC: %.3f' % auc)
```




```
AUC: 0.878
```

Support Vector Machine

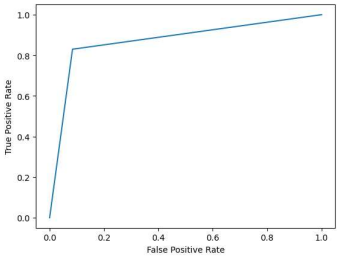
In [33]:
```
from sklearn.model_selection import GridSearchCV
from sklearn.svm import SVC

# defining parameter range
param_grid = {'C': [0.1, 1, 10, 100, 1000, 10000],
              'gamma': [1, 0.1, 0.01, 0.001, 0.0001, 0.00001, 0.000001, 0.0000001],
              'kernel': ['rbf','sigmoid']}

grid = GridSearchCV(SVC(), param_grid, refit = True, verbose = 3)

# fitting the model for grid search
grid.fit(X_train, y_train)


# print best parameter after tuning
print(grid.best_params_)

# print how our model looks after hyper-parameter tuning
print(grid.best_estimator_)

svc_pred = grid.predict(X_test)

print("Train results:", grid.score(X_train, y_train))
print("Test results:", grid.score(X_test, y_test))
print("Test Accuracy Score =", format(metrics.accuracy_score(y_test, svc_pred)))

print(confusion_matrix(y_test, svc_pred))
print(classification_report(y_test,svc_pred))
```

```
Fitting 5 folds for each of 96 candidates, totalling 480 fits
[CV 1/5] END ........C=0.1, gamma=1, kernel=rbf;, score=0.634 total time=   0.0s
[CV 2/5] END ........C=0.1, gamma=1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 3/5] END ........C=0.1, gamma=1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 4/5] END ........C=0.1, gamma=1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 5/5] END ........C=0.1, gamma=1, kernel=rbf;, score=0.639 total time=   0.0s
[CV 1/5] END ....C=0.1, gamma=1, kernel=sigmoid;, score=0.634 total time=   0.0s
[CV 2/5] END ....C=0.1, gamma=1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 3/5] END ....C=0.1, gamma=1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 4/5] END ....C=0.1, gamma=1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 5/5] END ....C=0.1, gamma=1, kernel=sigmoid;, score=0.639 total time=   0.0s
[CV 1/5] END ......C=0.1, gamma=0.1, kernel=rbf;, score=0.634 total time=   0.0s
[CV 2/5] END ......C=0.1, gamma=0.1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 3/5] END ......C=0.1, gamma=0.1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 4/5] END ......C=0.1, gamma=0.1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 5/5] END ......C=0.1, gamma=0.1, kernel=rbf;, score=0.639 total time=   0.0s
[CV 1/5] END ..C=0.1, gamma=0.1, kernel=sigmoid;, score=0.634 total time=   0.0s
[CV 2/5] END ..C=0.1, gamma=0.1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 3/5] END ..C=0.1, gamma=0.1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 4/5] END ..C=0.1, gamma=0.1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 5/5] END ..C=0.1, gamma=0.1, kernel=sigmoid;, score=0.639 total time=   0.0s
[CV 1/5] END .....C=0.1, gamma=0.01, kernel=rbf;, score=0.634 total time=   0.0s
[CV 2/5] END .....C=0.1, gamma=0.01, kernel=rbf;, score=0.642 total time=   0.0s
[CV 3/5] END .....C=0.1, gamma=0.01, kernel=rbf;, score=0.642 total time=   0.0s
[CV 4/5] END .....C=0.1, gamma=0.01, kernel=rbf;, score=0.642 total time=   0.0s
[CV 5/5] END .....C=0.1, gamma=0.01, kernel=rbf;, score=0.639 total time=   0.0s
[CV 1/5] END ...C=0.1, gamma=0.01, kernel=sigmoid;, score=0.634 total time=   0.0s
[CV 2/5] END ...C=0.1, gamma=0.01, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 3/5] END ...C=0.1, gamma=0.01, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 4/5] END ...C=0.1, gamma=0.01, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 5/5] END ...C=0.1, gamma=0.01, kernel=sigmoid;, score=0.639 total time=   0.0s
[CV 1/5] END .....C=0.1, gamma=0.001, kernel=rbf;, score=0.846 total time=   0.0s
[CV 2/5] END .....C=0.1, gamma=0.001, kernel=rbf;, score=0.846 total time=   0.0s
[CV 3/5] END .....C=0.1, gamma=0.001, kernel=rbf;, score=0.829 total time=   0.0s
[CV 4/5] END .....C=0.1, gamma=0.001, kernel=rbf;, score=0.772 total time=   0.0s
[CV 5/5] END .....C=0.1, gamma=0.001, kernel=rbf;, score=0.820 total time=   0.0s
[CV 1/5] END C=0.1, gamma=0.001, kernel=sigmoid;, score=0.634 total time=   0.0s
[CV 2/5] END C=0.1, gamma=0.001, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 3/5] END C=0.1, gamma=0.001, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 4/5] END C=0.1, gamma=0.001, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 5/5] END C=0.1, gamma=0.001, kernel=sigmoid;, score=0.639 total time=   0.0s
[CV 1/5] END .....C=0.1, gamma=0.0001, kernel=rbf;, score=0.862 total time=   0.0s
[CV 2/5] END .....C=0.1, gamma=0.0001, kernel=rbf;, score=0.837 total time=   0.0s
[CV 3/5] END .....C=0.1, gamma=0.0001, kernel=rbf;, score=0.813 total time=   0.0s
[CV 4/5] END .....C=0.1, gamma=0.0001, kernel=rbf;, score=0.772 total time=   0.0s
[CV 5/5] END .....C=0.1, gamma=0.0001, kernel=rbf;, score=0.811 total time=   0.0s
[CV 1/5] END C=0.1, gamma=0.0001, kernel=sigmoid;, score=0.626 total time=   0.0s
[CV 2/5] END C=0.1, gamma=0.0001, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 3/5] END C=0.1, gamma=0.0001, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 4/5] END C=0.1, gamma=0.0001, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 5/5] END C=0.1, gamma=0.0001, kernel=sigmoid;, score=0.631 total time=   0.0s
[CV 1/5] END .....C=0.1, gamma=1e-05, kernel=rbf;, score=0.659 total time=   0.0s
[CV 2/5] END .....C=0.1, gamma=1e-05, kernel=rbf;, score=0.691 total time=   0.0s
[CV 3/5] END .....C=0.1, gamma=1e-05, kernel=rbf;, score=0.724 total time=   0.0s
[CV 4/5] END .....C=0.1, gamma=1e-05, kernel=rbf;, score=0.699 total time=   0.0s
[CV 5/5] END .....C=0.1, gamma=1e-05, kernel=rbf;, score=0.689 total time=   0.0s
[CV 1/5] END C=0.1, gamma=1e-05, kernel=sigmoid;, score=0.634 total time=   0.0s
[CV 2/5] END C=0.1, gamma=1e-05, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 3/5] END C=0.1, gamma=1e-05, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 4/5] END C=0.1, gamma=1e-05, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 5/5] END C=0.1, gamma=1e-05, kernel=sigmoid;, score=0.639 total time=   0.0s
[CV 1/5] END .....C=0.1, gamma=1e-06, kernel=rbf;, score=0.634 total time=   0.0s
[CV 2/5] END .....C=0.1, gamma=1e-06, kernel=rbf;, score=0.642 total time=   0.0s
[CV 3/5] END .....C=0.1, gamma=1e-06, kernel=rbf;, score=0.642 total time=   0.0s
[CV 4/5] END .....C=0.1, gamma=1e-06, kernel=rbf;, score=0.642 total time=   0.0s
[CV 5/5] END .....C=0.1, gamma=1e-06, kernel=rbf;, score=0.639 total time=   0.0s
[CV 1/5] END C=0.1, gamma=1e-06, kernel=sigmoid;, score=0.634 total time=   0.0s
[CV 2/5] END C=0.1, gamma=1e-06, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 3/5] END C=0.1, gamma=1e-06, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 4/5] END C=0.1, gamma=1e-06, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 5/5] END C=0.1, gamma=1e-06, kernel=sigmoid;, score=0.639 total time=   0.0s
[CV 1/5] END .....C=0.1, gamma=1e-07, kernel=rbf;, score=0.634 total time=   0.0s
[CV 2/5] END .....C=0.1, gamma=1e-07, kernel=rbf;, score=0.642 total time=   0.0s
[CV 3/5] END .....C=0.1, gamma=1e-07, kernel=rbf;, score=0.642 total time=   0.0s
[CV 4/5] END .....C=0.1, gamma=1e-07, kernel=rbf;, score=0.642 total time=   0.0s
[CV 5/5] END .....C=0.1, gamma=1e-07, kernel=rbf;, score=0.639 total time=   0.0s
[CV 1/5] END C=0.1, gamma=1e-07, kernel=sigmoid;, score=0.634 total time=   0.0s
[CV 2/5] END C=0.1, gamma=1e-07, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 3/5] END C=0.1, gamma=1e-07, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 4/5] END C=0.1, gamma=1e-07, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 5/5] END C=0.1, gamma=1e-07, kernel=sigmoid;, score=0.639 total time=   0.0s
[CV 1/5] END .........C=1, gamma=1, kernel=rbf;, score=0.634 total time=   0.0s
[CV 2/5] END .........C=1, gamma=1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 3/5] END .........C=1, gamma=1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 4/5] END .........C=1, gamma=1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 5/5] END .........C=1, gamma=1, kernel=rbf;, score=0.639 total time=   0.1s
[CV 1/5] END ......C=1, gamma=1, kernel=sigmoid;, score=0.634 total time=   0.0s
[CV 2/5] END ......C=1, gamma=1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 3/5] END ......C=1, gamma=1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 4/5] END ......C=1, gamma=1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 5/5] END ......C=1, gamma=1, kernel=sigmoid;, score=0.639 total time=   0.0s
[CV 1/5] END .......C=1, gamma=0.1, kernel=rbf;, score=0.634 total time=   0.0s
[CV 2/5] END .......C=1, gamma=0.1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 3/5] END .......C=1, gamma=0.1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 4/5] END .......C=1, gamma=0.1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 5/5] END .......C=1, gamma=0.1, kernel=rbf;, score=0.639 total time=   0.0s
[CV 1/5] END ....C=1, gamma=0.1, kernel=sigmoid;, score=0.634 total time=   0.0s
[CV 2/5] END ....C=1, gamma=0.1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 3/5] END ....C=1, gamma=0.1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 4/5] END ....C=1, gamma=0.1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 5/5] END ....C=1, gamma=0.1, kernel=sigmoid;, score=0.639 total time=   0.0s
[CV 1/5] END .....C=1, gamma=0.01, kernel=rbf;, score=0.797 total time=   0.0s
[CV 2/5] END .....C=1, gamma=0.01, kernel=rbf;, score=0.780 total time=   0.0s
[CV 3/5] END .....C=1, gamma=0.01, kernel=rbf;, score=0.780 total time=   0.0s
[CV 4/5] END .....C=1, gamma=0.01, kernel=rbf;, score=0.715 total time=   0.0s
[CV 5/5] END .....C=1, gamma=0.01, kernel=rbf;, score=0.803 total time=   0.0s
[CV 1/5] END ...C=1, gamma=0.01, kernel=sigmoid;, score=0.634 total time=   0.0s
[CV 2/5] END ...C=1, gamma=0.01, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 3/5] END ...C=1, gamma=0.01, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 4/5] END ...C=1, gamma=0.01, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 5/5] END ...C=1, gamma=0.01, kernel=sigmoid;, score=0.639 total time=   0.0s
[CV 1/5] END .....C=1, gamma=0.001, kernel=rbf;, score=0.894 total time=   0.0s
[CV 2/5] END .....C=1, gamma=0.001, kernel=rbf;, score=0.854 total time=   0.0s
[CV 3/5] END .....C=1, gamma=0.001, kernel=rbf;, score=0.902 total time=   0.0s
[CV 4/5] END .....C=1, gamma=0.001, kernel=rbf;, score=0.772 total time=   0.0s
[CV 5/5] END .....C=1, gamma=0.001, kernel=rbf;, score=0.877 total time=   0.0s
[CV 1/5] END ..C=1, gamma=0.001, kernel=sigmoid;, score=0.634 total time=   0.0s
[CV 2/5] END ..C=1, gamma=0.001, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 3/5] END ..C=1, gamma=0.001, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 4/5] END ..C=1, gamma=0.001, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 5/5] END ..C=1, gamma=0.001, kernel=sigmoid;, score=0.639 total time=   0.0s
[CV 1/5] END .....C=1, gamma=0.0001, kernel=rbf;, score=0.878 total time=   0.0s
[CV 2/5] END .....C=1, gamma=0.0001, kernel=rbf;, score=0.870 total time=   0.0s
[CV 3/5] END .....C=1, gamma=0.0001, kernel=rbf;, score=0.837 total time=   0.0s
[CV 4/5] END .....C=1, gamma=0.0001, kernel=rbf;, score=0.764 total time=   0.0s
[CV 5/5] END .....C=1, gamma=0.0001, kernel=rbf;, score=0.844 total time=   0.0s
[CV 1/5] END .C=1, gamma=0.0001, kernel=sigmoid;, score=0.423 total time=   0.0s
[CV 2/5] END .C=1, gamma=0.0001, kernel=sigmoid;, score=0.439 total time=   0.0s
[CV 3/5] END .C=1, gamma=0.0001, kernel=sigmoid;, score=0.512 total time=   0.0s
[CV 4/5] END .C=1, gamma=0.0001, kernel=sigmoid;, score=0.463 total time=   0.0s
[CV 5/5] END .C=1, gamma=0.0001, kernel=sigmoid;, score=0.443 total time=   0.0s
[CV 1/5] END .....C=1, gamma=1e-05, kernel=rbf;, score=0.870 total time=   0.0s
[CV 2/5] END .....C=1, gamma=1e-05, kernel=rbf;, score=0.837 total time=   0.0s
[CV 3/5] END .....C=1, gamma=1e-05, kernel=rbf;, score=0.837 total time=   0.0s
[CV 4/5] END .....C=1, gamma=1e-05, kernel=rbf;, score=0.772 total time=   0.0s
[CV 5/5] END .....C=1, gamma=1e-05, kernel=rbf;, score=0.811 total time=   0.0s
[CV 1/5] END ..C=1, gamma=1e-05, kernel=sigmoid;, score=0.862 total time=   0.0s
[CV 2/5] END ..C=1, gamma=1e-05, kernel=sigmoid;, score=0.846 total time=   0.0s
[CV 3/5] END ..C=1, gamma=1e-05, kernel=sigmoid;, score=0.854 total time=   0.0s
[CV 4/5] END ..C=1, gamma=1e-05, kernel=sigmoid;, score=0.772 total time=   0.0s
[CV 5/5] END ..C=1, gamma=1e-05, kernel=sigmoid;, score=0.811 total time=   0.0s
[CV 1/5] END .....C=1, gamma=1e-06, kernel=rbf;, score=0.675 total time=   0.0s
[CV 2/5] END .....C=1, gamma=1e-06, kernel=rbf;, score=0.707 total time=   0.0s
[CV 3/5] END .....C=1, gamma=1e-06, kernel=rbf;, score=0.732 total time=   0.0s
[CV 4/5] END .....C=1, gamma=1e-06, kernel=rbf;, score=0.707 total time=   0.0s
[CV 5/5] END .....C=1, gamma=1e-06, kernel=rbf;, score=0.713 total time=   0.0s
[CV 1/5] END ..C=1, gamma=1e-06, kernel=sigmoid;, score=0.634 total time=   0.0s
[CV 2/5] END ..C=1, gamma=1e-06, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 3/5] END ..C=1, gamma=1e-06, kernel=sigmoid;, score=0.634 total time=   0.0s
[CV 4/5] END ..C=1, gamma=1e-06, kernel=sigmoid;, score=0.634 total time=   0.0s
[CV 5/5] END ..C=1, gamma=1e-06, kernel=sigmoid;, score=0.648 total time=   0.0s
[CV 1/5] END .....C=1, gamma=1e-07, kernel=rbf;, score=0.634 total time=   0.0s
[CV 2/5] END .....C=1, gamma=1e-07, kernel=rbf;, score=0.642 total time=   0.0s
[CV 3/5] END .....C=1, gamma=1e-07, kernel=rbf;, score=0.642 total time=   0.0s
[CV 4/5] END .....C=1, gamma=1e-07, kernel=rbf;, score=0.642 total time=   0.0s
[CV 5/5] END .....C=1, gamma=1e-07, kernel=rbf;, score=0.639 total time=   0.0s
[CV 1/5] END ..C=1, gamma=1e-07, kernel=sigmoid;, score=0.634 total time=   0.0s
[CV 2/5] END ..C=1, gamma=1e-07, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 3/5] END ..C=1, gamma=1e-07, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 4/5] END ..C=1, gamma=1e-07, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 5/5] END ..C=1, gamma=1e-07, kernel=sigmoid;, score=0.639 total time=   0.0s
[CV 1/5] END .......C=10, gamma=1, kernel=rbf;, score=0.634 total time=   0.0s
[CV 2/5] END .......C=10, gamma=1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 3/5] END .......C=10, gamma=1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 4/5] END .......C=10, gamma=1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 5/5] END .......C=10, gamma=1, kernel=rbf;, score=0.639 total time=   0.0s
[CV 1/5] END .....C=10, gamma=1, kernel=sigmoid;, score=0.634 total time=   0.0s
[CV 2/5] END .....C=10, gamma=1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 3/5] END .....C=10, gamma=1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 4/5] END .....C=10, gamma=1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 5/5] END .....C=10, gamma=1, kernel=sigmoid;, score=0.639 total time=   0.0s
[CV 1/5] END .....C=10, gamma=0.1, kernel=rbf;, score=0.634 total time=   0.0s
[CV 2/5] END .....C=10, gamma=0.1, kernel=rbf;, score=0.642 total time=   0.1s
[CV 3/5] END .....C=10, gamma=0.1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 4/5] END .....C=10, gamma=0.1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 5/5] END .....C=10, gamma=0.1, kernel=rbf;, score=0.639 total time=   0.0s
[CV 1/5] END ...C=10, gamma=0.1, kernel=sigmoid;, score=0.634 total time=   0.0s
[CV 2/5] END ...C=10, gamma=0.1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 3/5] END ...C=10, gamma=0.1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 4/5] END ...C=10, gamma=0.1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 5/5] END ...C=10, gamma=0.1, kernel=sigmoid;, score=0.639 total time=   0.0s
[CV 1/5] END .....C=10, gamma=0.01, kernel=rbf;, score=0.789 total time=   0.0s
[CV 2/5] END .....C=10, gamma=0.01, kernel=rbf;, score=0.764 total time=   0.0s
[CV 3/5] END .....C=10, gamma=0.01, kernel=rbf;, score=0.813 total time=   0.0s
[CV 4/5] END .....C=10, gamma=0.01, kernel=rbf;, score=0.740 total time=   0.0s
[CV 5/5] END .....C=10, gamma=0.01, kernel=rbf;, score=0.811 total time=   0.0s
[CV 1/5] END ..C=10, gamma=0.01, kernel=sigmoid;, score=0.634 total time=   0.0s
[CV 2/5] END ..C=10, gamma=0.01, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 3/5] END ..C=10, gamma=0.01, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 4/5] END ..C=10, gamma=0.01, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 5/5] END ..C=10, gamma=0.01, kernel=sigmoid;, score=0.639 total time=   0.0s
[CV 1/5] END .....C=10, gamma=0.001, kernel=rbf;, score=0.886 total time=   0.0s
[CV 2/5] END .....C=10, gamma=0.001, kernel=rbf;, score=0.797 total time=   0.0s
[CV 3/5] END .....C=10, gamma=0.001, kernel=rbf;, score=0.894 total time=   0.0s
[CV 4/5] END .....C=10, gamma=0.001, kernel=rbf;, score=0.789 total time=   0.0s
[CV 5/5] END .....C=10, gamma=0.001, kernel=rbf;, score=0.869 total time=   0.0s
[CV 1/5] END ..C=10, gamma=0.001, kernel=sigmoid;, score=0.634 total time=   0.0s
[CV 2/5] END ..C=10, gamma=0.001, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 3/5] END ..C=10, gamma=0.001, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 4/5] END ..C=10, gamma=0.001, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 5/5] END ..C=10, gamma=0.001, kernel=sigmoid;, score=0.639 total time=   0.0s
[CV 1/5] END ....C=10, gamma=0.0001, kernel=rbf;, score=0.870 total time=   0.0s
[CV 2/5] END ....C=10, gamma=0.0001, kernel=rbf;, score=0.870 total time=   0.0s
[CV 3/5] END ....C=10, gamma=0.0001, kernel=rbf;, score=0.878 total time=   0.0s
[CV 4/5] END ....C=10, gamma=0.0001, kernel=rbf;, score=0.772 total time=   0.0s
[CV 5/5] END ....C=10, gamma=0.0001, kernel=rbf;, score=0.877 total time=   0.0s
[CV 1/5] END C=10, gamma=0.0001, kernel=sigmoid;, score=0.260 total time=   0.0s
[CV 2/5] END C=10, gamma=0.0001, kernel=sigmoid;, score=0.293 total time=   0.0s
[CV 3/5] END C=10, gamma=0.0001, kernel=sigmoid;, score=0.415 total time=   0.0s
[CV 4/5] END C=10, gamma=0.0001, kernel=sigmoid;, score=0.350 total time=   0.0s
[CV 5/5] END C=10, gamma=0.0001, kernel=sigmoid;, score=0.287 total time=   0.0s
[CV 1/5] END .....C=10, gamma=1e-05, kernel=rbf;, score=0.870 total time=   0.0s
[CV 2/5] END .....C=10, gamma=1e-05, kernel=rbf;, score=0.829 total time=   0.0s
[CV 3/5] END .....C=10, gamma=1e-05, kernel=rbf;, score=0.837 total time=   0.0s
[CV 4/5] END .....C=10, gamma=1e-05, kernel=rbf;, score=0.756 total time=   0.0s
[CV 5/5] END .....C=10, gamma=1e-05, kernel=rbf;, score=0.811 total time=   0.0s
```

```
[CV 1/5] END .C=10, gamma=1e-05, kernel=sigmoid;, score=0.878 total time=   0.0s
[CV 2/5] END .C=10, gamma=1e-05, kernel=sigmoid;, score=0.837 total time=   0.0s
[CV 3/5] END .C=10, gamma=1e-05, kernel=sigmoid;, score=0.829 total time=   0.0s
[CV 4/5] END .C=10, gamma=1e-05, kernel=sigmoid;, score=0.780 total time=   0.0s
[CV 5/5] END .C=10, gamma=1e-05, kernel=sigmoid;, score=0.811 total time=   0.0s
[CV 1/5] END .....C=10, gamma=1e-06, kernel=rbf;, score=0.854 total time=   0.0s
[CV 2/5] END .....C=10, gamma=1e-06, kernel=rbf;, score=0.837 total time=   0.0s
[CV 3/5] END .....C=10, gamma=1e-06, kernel=rbf;, score=0.846 total time=   0.0s
[CV 4/5] END .....C=10, gamma=1e-06, kernel=rbf;, score=0.772 total time=   0.0s
[CV 5/5] END .....C=10, gamma=1e-06, kernel=rbf;, score=0.811 total time=   0.0s
[CV 1/5] END .C=10, gamma=1e-06, kernel=sigmoid;, score=0.846 total time=   0.0s
[CV 2/5] END .C=10, gamma=1e-06, kernel=sigmoid;, score=0.837 total time=   0.0s
[CV 3/5] END .C=10, gamma=1e-06, kernel=sigmoid;, score=0.846 total time=   0.0s
[CV 4/5] END .C=10, gamma=1e-06, kernel=sigmoid;, score=0.772 total time=   0.0s
[CV 5/5] END .C=10, gamma=1e-06, kernel=sigmoid;, score=0.803 total time=   0.0s
[CV 1/5] END .....C=10, gamma=1e-07, kernel=rbf;, score=0.675 total time=   0.0s
[CV 2/5] END .....C=10, gamma=1e-07, kernel=rbf;, score=0.707 total time=   0.0s
[CV 3/5] END .....C=10, gamma=1e-07, kernel=rbf;, score=0.732 total time=   0.0s
[CV 4/5] END .....C=10, gamma=1e-07, kernel=rbf;, score=0.707 total time=   0.0s
[CV 5/5] END .....C=10, gamma=1e-07, kernel=rbf;, score=0.721 total time=   0.0s
[CV 1/5] END .C=10, gamma=1e-07, kernel=sigmoid;, score=0.634 total time=   0.0s
[CV 2/5] END .C=10, gamma=1e-07, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 3/5] END .C=10, gamma=1e-07, kernel=sigmoid;, score=0.634 total time=   0.0s
[CV 4/5] END .C=10, gamma=1e-07, kernel=sigmoid;, score=0.634 total time=   0.0s
[CV 5/5] END .C=10, gamma=1e-07, kernel=sigmoid;, score=0.639 total time=   0.0s
[CV 1/5] END .....C=100, gamma=1, kernel=rbf;, score=0.634 total time=   0.0s
[CV 2/5] END .....C=100, gamma=1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 3/5] END .....C=100, gamma=1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 4/5] END .....C=100, gamma=1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 5/5] END .....C=100, gamma=1, kernel=rbf;, score=0.639 total time=   0.0s
[CV 1/5] END ....C=100, gamma=1, kernel=sigmoid;, score=0.634 total time=   0.0s
[CV 2/5] END ....C=100, gamma=1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 3/5] END ....C=100, gamma=1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 4/5] END ....C=100, gamma=1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 5/5] END ....C=100, gamma=1, kernel=sigmoid;, score=0.639 total time=   0.0s
[CV 1/5] END .....C=100, gamma=0.1, kernel=rbf;, score=0.634 total time=   0.0s
[CV 2/5] END .....C=100, gamma=0.1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 3/5] END .....C=100, gamma=0.1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 4/5] END .....C=100, gamma=0.1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 5/5] END .....C=100, gamma=0.1, kernel=rbf;, score=0.639 total time=   0.0s
[CV 1/5] END ..C=100, gamma=0.1, kernel=sigmoid;, score=0.634 total time=   0.0s
[CV 2/5] END ..C=100, gamma=0.1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 3/5] END ..C=100, gamma=0.1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 4/5] END ..C=100, gamma=0.1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 5/5] END ..C=100, gamma=0.1, kernel=sigmoid;, score=0.639 total time=   0.0s
[CV 1/5] END .....C=100, gamma=0.01, kernel=rbf;, score=0.789 total time=   0.0s
[CV 2/5] END .....C=100, gamma=0.01, kernel=rbf;, score=0.764 total time=   0.0s
[CV 3/5] END .....C=100, gamma=0.01, kernel=rbf;, score=0.813 total time=   0.0s
[CV 4/5] END .....C=100, gamma=0.01, kernel=rbf;, score=0.740 total time=   0.0s
[CV 5/5] END .....C=100, gamma=0.01, kernel=rbf;, score=0.811 total time=   0.0s
[CV 1/5] END ..C=100, gamma=0.01, kernel=sigmoid;, score=0.634 total time=   0.0s
[CV 2/5] END ..C=100, gamma=0.01, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 3/5] END ..C=100, gamma=0.01, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 4/5] END ..C=100, gamma=0.01, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 5/5] END ..C=100, gamma=0.01, kernel=sigmoid;, score=0.639 total time=   0.0s
[CV 1/5] END ....C=100, gamma=0.001, kernel=rbf;, score=0.829 total time=   0.0s
[CV 2/5] END ....C=100, gamma=0.001, kernel=rbf;, score=0.885 total time=   0.0s
[CV 3/5] END ....C=100, gamma=0.001, kernel=rbf;, score=0.878 total time=   0.0s
[CV 4/5] END ....C=100, gamma=0.001, kernel=rbf;, score=0.724 total time=   0.0s
[CV 5/5] END ....C=100, gamma=0.001, kernel=rbf;, score=0.836 total time=   0.0s
[CV 1/5] END C=100, gamma=0.001, kernel=sigmoid;, score=0.634 total time=   0.0s
[CV 2/5] END C=100, gamma=0.001, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 3/5] END C=100, gamma=0.001, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 4/5] END C=100, gamma=0.001, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 5/5] END C=100, gamma=0.001, kernel=sigmoid;, score=0.639 total time=   0.0s
[CV 1/5] END ...C=100, gamma=0.0001, kernel=rbf;, score=0.870 total time=   0.0s
[CV 2/5] END ...C=100, gamma=0.0001, kernel=rbf;, score=0.862 total time=   0.0s
[CV 3/5] END ...C=100, gamma=0.0001, kernel=rbf;, score=0.870 total time=   0.0s
[CV 4/5] END ...C=100, gamma=0.0001, kernel=rbf;, score=0.797 total time=   0.0s
[CV 5/5] END ...C=100, gamma=0.0001, kernel=rbf;, score=0.869 total time=   0.0s
[CV 1/5] END C=100, gamma=0.0001, kernel=sigmoid;, score=0.228 total time=   0.0s
[CV 2/5] END C=100, gamma=0.0001, kernel=sigmoid;, score=0.276 total time=   0.0s
[CV 3/5] END C=100, gamma=0.0001, kernel=sigmoid;, score=0.407 total time=   0.0s
[CV 4/5] END C=100, gamma=0.0001, kernel=sigmoid;, score=0.333 total time=   0.0s
[CV 5/5] END C=100, gamma=0.0001, kernel=sigmoid;, score=0.811 total time=   0.0s
[CV 1/5] END ....C=100, gamma=1e-05, kernel=rbf;, score=0.886 total time=   0.0s
[CV 2/5] END ....C=100, gamma=1e-05, kernel=rbf;, score=0.862 total time=   0.0s
[CV 3/5] END ....C=100, gamma=1e-05, kernel=rbf;, score=0.854 total time=   0.0s
[CV 4/5] END ....C=100, gamma=1e-05, kernel=rbf;, score=0.756 total time=   0.0s
[CV 5/5] END ....C=100, gamma=1e-05, kernel=rbf;, score=0.869 total time=   0.0s
[CV 1/5] END C=100, gamma=1e-05, kernel=sigmoid;, score=0.748 total time=   0.0s
[CV 2/5] END C=100, gamma=1e-05, kernel=sigmoid;, score=0.829 total time=   0.0s
[CV 3/5] END C=100, gamma=1e-05, kernel=sigmoid;, score=0.813 total time=   0.0s
[CV 4/5] END C=100, gamma=1e-05, kernel=sigmoid;, score=0.772 total time=   0.0s
[CV 5/5] END C=100, gamma=1e-05, kernel=sigmoid;, score=0.795 total time=   0.0s
[CV 1/5] END ....C=100, gamma=1e-06, kernel=rbf;, score=0.854 total time=   0.0s
[CV 2/5] END ....C=100, gamma=1e-06, kernel=rbf;, score=0.837 total time=   0.0s
[CV 3/5] END ....C=100, gamma=1e-06, kernel=rbf;, score=0.846 total time=   0.0s
[CV 4/5] END ....C=100, gamma=1e-06, kernel=rbf;, score=0.772 total time=   0.0s
[CV 5/5] END ....C=100, gamma=1e-06, kernel=rbf;, score=0.820 total time=   0.0s
[CV 1/5] END C=100, gamma=1e-06, kernel=sigmoid;, score=0.846 total time=   0.0s
[CV 2/5] END C=100, gamma=1e-06, kernel=sigmoid;, score=0.837 total time=   0.0s
[CV 3/5] END C=100, gamma=1e-06, kernel=sigmoid;, score=0.837 total time=   0.0s
[CV 4/5] END C=100, gamma=1e-06, kernel=sigmoid;, score=0.772 total time=   0.0s
[CV 5/5] END C=100, gamma=1e-06, kernel=sigmoid;, score=0.811 total time=   0.0s
[CV 1/5] END ....C=100, gamma=1e-07, kernel=rbf;, score=0.862 total time=   0.0s
[CV 2/5] END ....C=100, gamma=1e-07, kernel=rbf;, score=0.837 total time=   0.0s
[CV 3/5] END ....C=100, gamma=1e-07, kernel=rbf;, score=0.846 total time=   0.0s
[CV 4/5] END ....C=100, gamma=1e-07, kernel=rbf;, score=0.772 total time=   0.0s
[CV 5/5] END ....C=100, gamma=1e-07, kernel=rbf;, score=0.811 total time=   0.0s
[CV 1/5] END C=100, gamma=1e-07, kernel=sigmoid;, score=0.846 total time=   0.0s
[CV 2/5] END C=100, gamma=1e-07, kernel=sigmoid;, score=0.837 total time=   0.0s
[CV 3/5] END C=100, gamma=1e-07, kernel=sigmoid;, score=0.846 total time=   0.0s
[CV 4/5] END C=100, gamma=1e-07, kernel=sigmoid;, score=0.772 total time=   0.0s
[CV 5/5] END C=100, gamma=1e-07, kernel=sigmoid;, score=0.803 total time=   0.0s
[CV 1/5] END .....C=1000, gamma=1, kernel=rbf;, score=0.634 total time=   0.0s
[CV 2/5] END .....C=1000, gamma=1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 3/5] END .....C=1000, gamma=1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 4/5] END .....C=1000, gamma=1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 5/5] END .....C=1000, gamma=1, kernel=rbf;, score=0.639 total time=   0.0s
[CV 1/5] END ...C=1000, gamma=1, kernel=sigmoid;, score=0.634 total time=   0.0s
[CV 2/5] END ...C=1000, gamma=1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 3/5] END ...C=1000, gamma=1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 4/5] END ...C=1000, gamma=1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 5/5] END ...C=1000, gamma=1, kernel=sigmoid;, score=0.639 total time=   0.0s
[CV 1/5] END .....C=1000, gamma=0.1, kernel=rbf;, score=0.634 total time=   0.0s
[CV 2/5] END .....C=1000, gamma=0.1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 3/5] END .....C=1000, gamma=0.1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 4/5] END .....C=1000, gamma=0.1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 5/5] END .....C=1000, gamma=0.1, kernel=rbf;, score=0.639 total time=   0.0s
[CV 1/5] END ..C=1000, gamma=0.1, kernel=sigmoid;, score=0.634 total time=   0.0s
[CV 2/5] END ..C=1000, gamma=0.1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 3/5] END ..C=1000, gamma=0.1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 4/5] END ..C=1000, gamma=0.1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 5/5] END ..C=1000, gamma=0.1, kernel=sigmoid;, score=0.639 total time=   0.0s
[CV 1/5] END ....C=1000, gamma=0.01, kernel=rbf;, score=0.789 total time=   0.0s
[CV 2/5] END ....C=1000, gamma=0.01, kernel=rbf;, score=0.764 total time=   0.0s
[CV 3/5] END ....C=1000, gamma=0.01, kernel=rbf;, score=0.813 total time=   0.0s
[CV 4/5] END ....C=1000, gamma=0.01, kernel=rbf;, score=0.740 total time=   0.0s
[CV 5/5] END ....C=1000, gamma=0.01, kernel=rbf;, score=0.811 total time=   0.0s
[CV 1/5] END C=1000, gamma=0.01, kernel=sigmoid;, score=0.634 total time=   0.0s
[CV 2/5] END C=1000, gamma=0.01, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 3/5] END C=1000, gamma=0.01, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 4/5] END C=1000, gamma=0.01, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 5/5] END C=1000, gamma=0.01, kernel=sigmoid;, score=0.639 total time=   0.0s
[CV 1/5] END ...C=1000, gamma=0.001, kernel=rbf;, score=0.821 total time=   0.0s
[CV 2/5] END ...C=1000, gamma=0.001, kernel=rbf;, score=0.821 total time=   0.0s
[CV 3/5] END ...C=1000, gamma=0.001, kernel=rbf;, score=0.870 total time=   0.0s
[CV 4/5] END ...C=1000, gamma=0.001, kernel=rbf;, score=0.748 total time=   0.0s
[CV 5/5] END ...C=1000, gamma=0.001, kernel=rbf;, score=0.836 total time=   0.0s
[CV 1/5] END C=1000, gamma=0.001, kernel=sigmoid;, score=0.634 total time=   0.0s
[CV 2/5] END C=1000, gamma=0.001, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 3/5] END C=1000, gamma=0.001, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 4/5] END C=1000, gamma=0.001, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 5/5] END C=1000, gamma=0.001, kernel=sigmoid;, score=0.639 total time=   0.0s
[CV 1/5] END ..C=1000, gamma=0.0001, kernel=rbf;, score=0.837 total time=   0.0s
[CV 2/5] END ..C=1000, gamma=0.0001, kernel=rbf;, score=0.862 total time=   0.0s
[CV 3/5] END ..C=1000, gamma=0.0001, kernel=rbf;, score=0.854 total time=   0.0s
[CV 4/5] END ..C=1000, gamma=0.0001, kernel=rbf;, score=0.789 total time=   0.0s
[CV 5/5] END ..C=1000, gamma=0.0001, kernel=rbf;, score=0.869 total time=   0.0s
[CV 1/5] END C=1000, gamma=0.0001, kernel=sigmoid;, score=0.236 total time=   0.0s
[CV 2/5] END C=1000, gamma=0.0001, kernel=sigmoid;, score=0.276 total time=   0.0s
[CV 3/5] END C=1000, gamma=0.0001, kernel=sigmoid;, score=0.407 total time=   0.0s
[CV 4/5] END C=1000, gamma=0.0001, kernel=sigmoid;, score=0.333 total time=   0.0s
[CV 5/5] END C=1000, gamma=0.0001, kernel=sigmoid;, score=0.828 total time=   0.0s
[CV 1/5] END ...C=1000, gamma=1e-05, kernel=rbf;, score=0.854 total time=   0.0s
[CV 2/5] END ...C=1000, gamma=1e-05, kernel=rbf;, score=0.862 total time=   0.0s
[CV 3/5] END ...C=1000, gamma=1e-05, kernel=rbf;, score=0.886 total time=   0.0s
[CV 4/5] END ...C=1000, gamma=1e-05, kernel=rbf;, score=0.780 total time=   0.0s
[CV 5/5] END ...C=1000, gamma=1e-05, kernel=rbf;, score=0.869 total time=   0.0s
[CV 1/5] END C=1000, gamma=1e-05, kernel=sigmoid;, score=0.724 total time=   0.0s
[CV 2/5] END C=1000, gamma=1e-05, kernel=sigmoid;, score=0.829 total time=   0.0s
[CV 3/5] END C=1000, gamma=1e-05, kernel=sigmoid;, score=0.813 total time=   0.0s
[CV 4/5] END C=1000, gamma=1e-05, kernel=sigmoid;, score=0.764 total time=   0.0s
[CV 5/5] END C=1000, gamma=1e-05, kernel=sigmoid;, score=0.787 total time=   0.0s
[CV 1/5] END ...C=1000, gamma=1e-06, kernel=rbf;, score=0.886 total time=   0.0s
[CV 2/5] END ...C=1000, gamma=1e-06, kernel=rbf;, score=0.829 total time=   0.0s
[CV 3/5] END ...C=1000, gamma=1e-06, kernel=rbf;, score=0.829 total time=   0.0s
[CV 4/5] END ...C=1000, gamma=1e-06, kernel=rbf;, score=0.780 total time=   0.0s
[CV 5/5] END ...C=1000, gamma=1e-06, kernel=rbf;, score=0.844 total time=   0.0s
[CV 1/5] END C=1000, gamma=1e-06, kernel=sigmoid;, score=0.862 total time=   0.0s
[CV 2/5] END C=1000, gamma=1e-06, kernel=sigmoid;, score=0.854 total time=   0.0s
[CV 3/5] END C=1000, gamma=1e-06, kernel=sigmoid;, score=0.821 total time=   0.0s
[CV 4/5] END C=1000, gamma=1e-06, kernel=sigmoid;, score=0.780 total time=   0.0s
[CV 5/5] END C=1000, gamma=1e-06, kernel=sigmoid;, score=0.828 total time=   0.0s
[CV 1/5] END ...C=1000, gamma=1e-07, kernel=rbf;, score=0.854 total time=   0.0s
[CV 2/5] END ...C=1000, gamma=1e-07, kernel=rbf;, score=0.837 total time=   0.0s
[CV 3/5] END ...C=1000, gamma=1e-07, kernel=rbf;, score=0.846 total time=   0.0s
[CV 4/5] END ...C=1000, gamma=1e-07, kernel=rbf;, score=0.780 total time=   0.0s
[CV 5/5] END ...C=1000, gamma=1e-07, kernel=rbf;, score=0.811 total time=   0.0s
[CV 1/5] END C=1000, gamma=1e-07, kernel=sigmoid;, score=0.846 total time=   0.0s
[CV 2/5] END C=1000, gamma=1e-07, kernel=sigmoid;, score=0.837 total time=   0.0s
[CV 3/5] END C=1000, gamma=1e-07, kernel=sigmoid;, score=0.837 total time=   0.0s
[CV 4/5] END C=1000, gamma=1e-07, kernel=sigmoid;, score=0.772 total time=   0.0s
[CV 5/5] END C=1000, gamma=1e-07, kernel=sigmoid;, score=0.811 total time=   0.0s
[CV 1/5] END ......C=10000, gamma=1, kernel=rbf;, score=0.634 total time=   0.0s
[CV 2/5] END ......C=10000, gamma=1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 3/5] END ......C=10000, gamma=1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 4/5] END ......C=10000, gamma=1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 5/5] END ......C=10000, gamma=1, kernel=rbf;, score=0.639 total time=   0.1s
[CV 1/5] END ...C=10000, gamma=1, kernel=sigmoid;, score=0.634 total time=   0.0s
[CV 2/5] END ...C=10000, gamma=1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 3/5] END ...C=10000, gamma=1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 4/5] END ...C=10000, gamma=1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 5/5] END ...C=10000, gamma=1, kernel=sigmoid;, score=0.639 total time=   0.0s
[CV 1/5] END ....C=10000, gamma=0.1, kernel=rbf;, score=0.634 total time=   0.0s
[CV 2/5] END ....C=10000, gamma=0.1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 3/5] END ....C=10000, gamma=0.1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 4/5] END ....C=10000, gamma=0.1, kernel=rbf;, score=0.642 total time=   0.0s
[CV 5/5] END ....C=10000, gamma=0.1, kernel=rbf;, score=0.639 total time=   0.0s
[CV 1/5] END ..C=10000, gamma=0.1, kernel=sigmoid;, score=0.634 total time=   0.0s
[CV 2/5] END ..C=10000, gamma=0.1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 3/5] END ..C=10000, gamma=0.1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 4/5] END ..C=10000, gamma=0.1, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 5/5] END ..C=10000, gamma=0.1, kernel=sigmoid;, score=0.639 total time=   0.0s
[CV 1/5] END ...C=10000, gamma=0.01, kernel=rbf;, score=0.789 total time=   0.0s
[CV 2/5] END ...C=10000, gamma=0.01, kernel=rbf;, score=0.764 total time=   0.0s
[CV 3/5] END ...C=10000, gamma=0.01, kernel=rbf;, score=0.813 total time=   0.0s
[CV 4/5] END ...C=10000, gamma=0.01, kernel=rbf;, score=0.740 total time=   0.0s
[CV 5/5] END ...C=10000, gamma=0.01, kernel=rbf;, score=0.811 total time=   0.0s
[CV 1/5] END C=10000, gamma=0.01, kernel=sigmoid;, score=0.634 total time=   0.0s
[CV 2/5] END C=10000, gamma=0.01, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 3/5] END C=10000, gamma=0.01, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 4/5] END C=10000, gamma=0.01, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 5/5] END C=10000, gamma=0.01, kernel=sigmoid;, score=0.639 total time=   0.0s
[CV 1/5] END ..C=10000, gamma=0.001, kernel=rbf;, score=0.821 total time=   0.0s
```

```
[CV 2/5] END ..C=10000, gamma=0.001, kernel=rbf;, score=0.821 total time=   0.0s
[CV 3/5] END ..C=10000, gamma=0.001, kernel=rbf;, score=0.870 total time=   0.0s
[CV 4/5] END ..C=10000, gamma=0.001, kernel=rbf;, score=0.748 total time=   0.0s
[CV 5/5] END ..C=10000, gamma=0.001, kernel=rbf;, score=0.836 total time=   0.0s
[CV 1/5] END C=10000, gamma=0.001, kernel=sigmoid;, score=0.634 total time=   0.0s
[CV 2/5] END C=10000, gamma=0.001, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 3/5] END C=10000, gamma=0.001, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 4/5] END C=10000, gamma=0.001, kernel=sigmoid;, score=0.642 total time=   0.0s
[CV 5/5] END C=10000, gamma=0.001, kernel=sigmoid;, score=0.639 total time=   0.0s
[CV 1/5] END .C=10000, gamma=0.0001, kernel=rbf;, score=0.829 total time=   0.5s
[CV 2/5] END .C=10000, gamma=0.0001, kernel=rbf;, score=0.821 total time=   0.6s
[CV 3/5] END .C=10000, gamma=0.0001, kernel=rbf;, score=0.870 total time=   0.8s
[CV 4/5] END .C=10000, gamma=0.0001, kernel=rbf;, score=0.724 total time=   0.5s
[CV 5/5] END .C=10000, gamma=0.0001, kernel=rbf;, score=0.869 total time=   0.4s
[CV 1/5] END C=10000, gamma=0.0001, kernel=sigmoid;, score=0.236 total time=   0.0s
[CV 2/5] END C=10000, gamma=0.0001, kernel=sigmoid;, score=0.276 total time=   0.0s
[CV 3/5] END C=10000, gamma=0.0001, kernel=sigmoid;, score=0.407 total time=   0.0s
[CV 4/5] END C=10000, gamma=0.0001, kernel=sigmoid;, score=0.333 total time=   0.0s
[CV 5/5] END C=10000, gamma=0.0001, kernel=sigmoid;, score=0.811 total time=   0.0s
[CV 1/5] END ..C=10000, gamma=1e-05, kernel=rbf;, score=0.837 total time=   0.2s
[CV 2/5] END ..C=10000, gamma=1e-05, kernel=rbf;, score=0.846 total time=   0.1s
[CV 3/5] END ..C=10000, gamma=1e-05, kernel=rbf;, score=0.878 total time=   0.1s
[CV 4/5] END ..C=10000, gamma=1e-05, kernel=rbf;, score=0.797 total time=   0.1s
[CV 5/5] END ..C=10000, gamma=1e-05, kernel=rbf;, score=0.836 total time=   0.1s
[CV 1/5] END C=10000, gamma=1e-05, kernel=sigmoid;, score=0.724 total time=   0.0s
[CV 2/5] END C=10000, gamma=1e-05, kernel=sigmoid;, score=0.829 total time=   0.0s
[CV 3/5] END C=10000, gamma=1e-05, kernel=sigmoid;, score=0.813 total time=   0.0s
[CV 4/5] END C=10000, gamma=1e-05, kernel=sigmoid;, score=0.764 total time=   0.0s
[CV 5/5] END C=10000, gamma=1e-05, kernel=sigmoid;, score=0.787 total time=   0.0s
[CV 1/5] END ..C=10000, gamma=1e-06, kernel=rbf;, score=0.862 total time=   0.0s
[CV 2/5] END ..C=10000, gamma=1e-06, kernel=rbf;, score=0.846 total time=   0.0s
[CV 3/5] END ..C=10000, gamma=1e-06, kernel=rbf;, score=0.862 total time=   0.0s
[CV 4/5] END ..C=10000, gamma=1e-06, kernel=rbf;, score=0.764 total time=   0.0s
[CV 5/5] END ..C=10000, gamma=1e-06, kernel=rbf;, score=0.877 total time=   0.0s
[CV 1/5] END C=10000, gamma=1e-06, kernel=sigmoid;, score=0.813 total time=   0.0s
[CV 2/5] END C=10000, gamma=1e-06, kernel=sigmoid;, score=0.846 total time=   0.0s
[CV 3/5] END C=10000, gamma=1e-06, kernel=sigmoid;, score=0.821 total time=   0.0s
[CV 4/5] END C=10000, gamma=1e-06, kernel=sigmoid;, score=0.797 total time=   0.0s
[CV 5/5] END C=10000, gamma=1e-06, kernel=sigmoid;, score=0.844 total time=   0.0s
[CV 1/5] END ..C=10000, gamma=1e-07, kernel=rbf;, score=0.854 total time=   0.0s
[CV 2/5] END ..C=10000, gamma=1e-07, kernel=rbf;, score=0.846 total time=   0.0s
[CV 3/5] END ..C=10000, gamma=1e-07, kernel=rbf;, score=0.829 total time=   0.0s
[CV 4/5] END ..C=10000, gamma=1e-07, kernel=rbf;, score=0.788 total time=   0.0s
[CV 5/5] END ..C=10000, gamma=1e-07, kernel=rbf;, score=0.844 total time=   0.0s
[CV 1/5] END C=10000, gamma=1e-07, kernel=sigmoid;, score=0.870 total time=   0.0s
[CV 2/5] END C=10000, gamma=1e-07, kernel=sigmoid;, score=0.846 total time=   0.0s
[CV 3/5] END C=10000, gamma=1e-07, kernel=sigmoid;, score=0.821 total time=   0.0s
[CV 4/5] END C=10000, gamma=1e-07, kernel=sigmoid;, score=0.780 total time=   0.0s
[CV 5/5] END C=10000, gamma=1e-07, kernel=sigmoid;, score=0.828 total time=   0.0s
{'C': 1, 'gamma': 0.001, 'kernel': 'rbf'}
SVC(C=1, gamma=0.001)
Train results: 0.9022801302931596
Test results: 0.8896103896103896
Test Accuracy Score = 0.8896103896103896
[[98  9]
 [ 8 39]]
              precision    recall  f1-score   support

           0       0.92      0.92      0.92       107
           1       0.81      0.83      0.82        47

    accuracy                           0.89       154
   macro avg       0.87      0.87      0.87       154
weighted avg       0.89      0.89      0.89       154
```

In [34]:
```
from sklearn import metrics
# get roc curve points
fpr, tpr, _ = metrics.roc_curve(y_test,  svc_pred)

# create ROC curve
plt.plot(fpr,tpr)
plt.ylabel('True Positive Rate')
plt.xlabel('False Positive Rate')
plt.show()

# calculate AUC
auc = metrics.roc_auc_score(y_test, svc_pred)
print('AUC: %.3f' % auc)
```



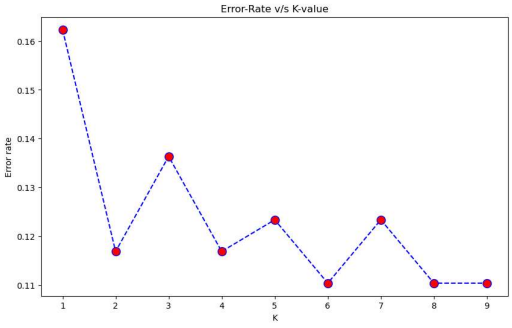

```
AUC: 0.873
```

In [ ]:

KNN

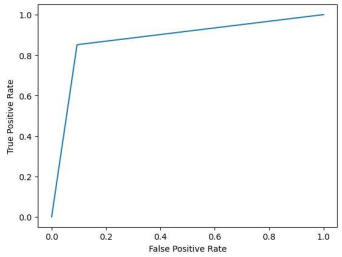
In [35]:
```
from sklearn.neighbors import KNeighborsClassifier
error_rate = []
for i in range(1,10):
    knn = KNeighborsClassifier(n_neighbors = i)
    knn.fit(X_train,y_train.ravel())
    pred_i = knn.predict(X_test)
    error_rate.append(np.mean(pred_i != y_test))

plt.figure(figsize=(10,6))
plt.plot(range(1,10), error_rate, color='blue', linestyle='dashed',marker='o', markerfacecolor='red', markersize=10)
plt.title('Error-Rate v/s K-value')
plt.xlabel('K')
plt.ylabel('Error rate')
```

Out[35]:
```
Text(0, 0.5, 'Error rate')
```



In [152...
```
knn = KNeighborsClassifier(n_neighbors = 8)
knn.fit(X_train,y_train.ravel())
y_pred = knn.predict(X_test)


print("Train results:", knn.score(X_train, y_train))
print("Test results:", knn.score(X_test, y_test))
print("Test Accuracy Score =", format(metrics.accuracy_score(y_test, y_pred)))

print(confusion_matrix(y_test, y_pred))
print(accuracy_score(y_test, y_pred))
print(classification_report(y_test,y_pred))



from sklearn import metrics
# get roc curve points
fpr, tpr, _ = metrics.roc_curve(y_test,  y_pred)

# create ROC curve
plt.plot(fpr,tpr)
plt.ylabel('True Positive Rate')
plt.xlabel('False Positive Rate')
plt.show()

# calculate AUC
auc = metrics.roc_auc_score(y_test, y_pred)
print('AUC: %.3f' % auc)
```

```
Train results: 0.8778501628664495
Test results: 0.8896103896103896
Test Accuracy Score = 0.8896103896103896
[[97 10]
 [ 7 40]]
0.8896103896103896
              precision    recall  f1-score   support

           0       0.93      0.91      0.92       107
           1       0.80      0.85      0.82        47

    accuracy                           0.89       154
   macro avg       0.87      0.88      0.87       154
weighted avg       0.89      0.89      0.89       154
```




```
AUC: 0.879
```

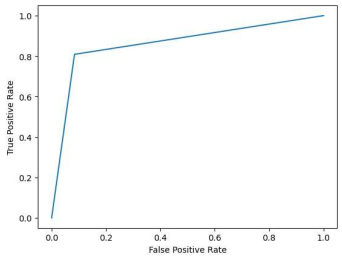
Decision Tree

In [37]:
```
from sklearn.tree import DecisionTreeClassifier
from sklearn.model_selection import GridSearchCV
classifier = DecisionTreeClassifier()

from scipy.stats import randint
from sklearn.model_selection import RandomizedSearchCV

parameters = {"max_depth":[1, 2,3, 5, 10,15, 20, None],
              "max_features":randint(1,15),
              "min_samples_leaf":randint(1,8),
              "criterion": ["gini", "entropy"]
}

tree_cv = RandomizedSearchCV(classifier, parameters, cv = 10)
tree_cv.fit(X_train, y_train)
tree_cv.best_estimator_
```

Out[37]:
```
DecisionTreeClassifier(criterion='entropy', max_depth=20, max_features=7,
                       min_samples_leaf=3)
```

In [151…
```
from sklearn import tree
classifier = DecisionTreeClassifier(criterion='entropy',max_depth=20,  max_features=6, min_samples_leaf=4)
classifier.fit(X_train, y_train)
y_pred = classifier.predict(X_test)
cm = confusion_matrix(y_test, y_pred)
print(cm)
print(accuracy_score(y_test, y_pred))
print(classification_report(y_test,y_pred))

from sklearn import metrics
# get roc curve points
fpr, tpr, _ = metrics.roc_curve(y_test,  y_pred)

# create ROC curve
plt.plot(fpr,tpr)
plt.ylabel('True Positive Rate')
plt.xlabel('False Positive Rate')
plt.show()

# calculate AUC
auc = metrics.roc_auc_score(y_test, y_pred)
print('AUC: %.3f' % auc)
```

```
[[98  9]
 [ 9 38]]
0.8831168831168831
              precision    recall  f1-score   support

           0       0.92      0.92      0.92       107
           1       0.81      0.81      0.81        47

    accuracy                           0.88       154
   macro avg       0.86      0.86      0.86       154
weighted avg       0.88      0.88      0.88       154
```




```
AUC: 0.862
```

Random Forest

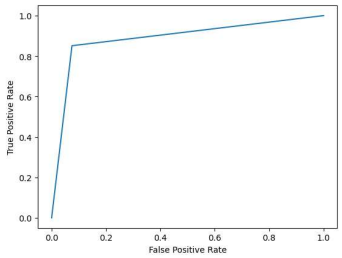
In [39]:
```
"""
from sklearn.ensemble import RandomForestClassifier
from sklearn.model_selection import GridSearchCV
classifier = RandomForestClassifier()

parameters = {"max_depth":[1, 2,3, 5, 10,15, 20, None],
              "n_estimators":[10,20,30,40,50],
              "max_features":range(1,8),
              "min_samples_leaf":range(1,10),
              "criterion": ["gini", "entropy"]
}


grid_search = GridSearchCV(estimator=classifier, param_grid=parameters, cv=10, verbose=3)
grid_search.fit(X_train, y_train) # fitting the model for grid search
print(grid_search.best_params_) # print best parameter after tuning

# print how our model looks after hyper-parameter tuning
print(grid_search.best_estimator_)
"""
```

Out[39]:
```
'\nfrom sklearn.ensemble import RandomForestClassifier\nfrom sklearn.model_selection import GridSearchCV\nclassifier = RandomForestClassifier()\n\nparameters = {"max_depth":[1, 2,3, 5, 10,15, 20, None],\n              "n_estimators":[10,20,30,40,50],\n              "max_features":range(1,8),\n              "min_samples_leaf":range(1,10),\n              "criterion": ["gini", "entropy"]\n}\n\n\ngrid_search = GridSearchCV(estimator=classifier, param_grid=parameters, cv=10, verbose=3)\ngrid_search.fit(X_train, y_train) # fitting the model for grid search\nprint(grid_search.best_params_) # print best parameter after tuning\n  \n# print how our model looks after hyper-parameter tuning\nprint(grid_search.best_estimator_)\n\n'
```

In [62]:
```
from sklearn.ensemble import RandomForestClassifier
classifier = RandomForestClassifier(criterion='entropy', max_depth=60, max_features=8, min_samples_leaf=2, n_estimators=40)
classifier.fit(X_train, y_train)
y_pred = classifier.predict(X_test)

cm = confusion_matrix(y_test, y_pred)
print(cm)
print(accuracy_score(y_test, y_pred))
print(classification_report(y_test,y_pred))
```

```
[[101   6]
 [  8  39]]
0.9090909090909091
              precision    recall  f1-score   support

           0       0.93      0.94      0.94       107
           1       0.87      0.83      0.85        47

    accuracy                           0.91       154
   macro avg       0.90      0.89      0.89       154
weighted avg       0.91      0.91      0.91       154
```

In [41]:
```
from sklearn import metrics
# get roc curve points
fpr, tpr, _ = metrics.roc_curve(y_test,  y_pred)

# create ROC curve
plt.plot(fpr,tpr)
plt.ylabel('True Positive Rate')
plt.xlabel('False Positive Rate')
plt.show()

# calculate AUC
auc = metrics.roc_auc_score(y_test, y_pred)
print('AUC: %.3f' % auc)
```




```
AUC: 0.888
```

In [ ]:
```
```

In [ ]:

Neural Network

In [42]:
```
import tensorflow as tf
from tensorflow import keras

class myCallback(tf.keras.callbacks.Callback):
    def on_epoch_end(self, epoch, logs={}):
        if(logs.get('accuracy')>0.99):
            print("\nReached 99% accuracy so cancelling training!")
            self.model.stop_training = True
```

In [43]:
```
callbacks = myCallback()
```

In [44]:
```
model = tf.keras.models.Sequential([tf.keras.layers.Flatten(input_shape=(8,)),

                                    tf.keras.layers.Dense(20, activation=tf.nn.relu),
                                    tf.keras.layers.Dense(11, activation=tf.nn.relu),
                                    tf.keras.layers.Dense(11, activation=tf.nn.relu),

                                    #tf.keras.layers.Dropout(0.5),

                                     #tf.keras.layers.Dense(8, activation=tf.nn.relu),
                                    tf.keras.layers.Dense(1, activation=tf.nn.sigmoid)])



model.compile(optimizer = tf.optimizers.Adam(lr=0.001),
              loss='binary_crossentropy',
              metrics=['accuracy'])


model.fit(X_train, y_train, epochs=40,batch_size=30,callbacks=[callbacks],validation_data=(X_test, y_test))
```

```
C:\Users\hp\anaconda3\lib\site-packages\keras\optimizer_v2\adam.py:105: UserWarning: The `lr` argument is deprecated, use `learning_rate` instead.
  super(Adam, self).__init__(name, **kwargs)
Epoch 1/40
21/21 [==============================] - 6s 66ms/step - loss: 3.6313 - accuracy: 0.4919 - val_loss: 1.4720 - val_accuracy: 0.4156
Epoch 2/40
21/21 [==============================] - 0s 22ms/step - loss: 1.1697 - accuracy: 0.5603 - val_loss: 0.9270 - val_accuracy: 0.5714
Epoch 3/40
21/21 [==============================] - 1s 25ms/step - loss: 0.7611 - accuracy: 0.6629 - val_loss: 0.7329 - val_accuracy: 0.7078
Epoch 4/40
21/21 [==============================] - 0s 17ms/step - loss: 0.6889 - accuracy: 0.6922 - val_loss: 0.6515 - val_accuracy: 0.7273
Epoch 5/40
21/21 [==============================] - 0s 19ms/step - loss: 0.6303 - accuracy: 0.7231 - val_loss: 0.5860 - val_accuracy: 0.7403
Epoch 6/40
21/21 [==============================] - 0s 23ms/step - loss: 0.5831 - accuracy: 0.7590 - val_loss: 0.5395 - val_accuracy: 0.7727
Epoch 7/40
21/21 [==============================] - 0s 18ms/step - loss: 0.5610 - accuracy: 0.7671 - val_loss: 0.5526 - val_accuracy: 0.7727
Epoch 8/40
21/21 [==============================] - 0s 17ms/step - loss: 0.5516 - accuracy: 0.7508 - val_loss: 0.5211 - val_accuracy: 0.7922
Epoch 9/40
21/21 [==============================] - 0s 19ms/step - loss: 0.5331 - accuracy: 0.7573 - val_loss: 0.5036 - val_accuracy: 0.7857
Epoch 10/40
21/21 [==============================] - 0s 20ms/step - loss: 0.5313 - accuracy: 0.7590 - val_loss: 0.5176 - val_accuracy: 0.7727
Epoch 11/40
21/21 [==============================] - 0s 22ms/step - loss: 0.5174 - accuracy: 0.7622 - val_loss: 0.5016 - val_accuracy: 0.7857
Epoch 12/40
21/21 [==============================] - 1s 28ms/step - loss: 0.5102 - accuracy: 0.7769 - val_loss: 0.4843 - val_accuracy: 0.8117
Epoch 13/40
21/21 [==============================] - 1s 25ms/step - loss: 0.5075 - accuracy: 0.7687 - val_loss: 0.4798 - val_accuracy: 0.7987
Epoch 14/40
21/21 [==============================] - 0s 21ms/step - loss: 0.5190 - accuracy: 0.7655 - val_loss: 0.4818 - val_accuracy: 0.8052
Epoch 15/40
21/21 [==============================] - 0s 21ms/step - loss: 0.5040 - accuracy: 0.7785 - val_loss: 0.5077 - val_accuracy: 0.7792
Epoch 16/40
21/21 [==============================] - 0s 19ms/step - loss: 0.4974 - accuracy: 0.7834 - val_loss: 0.4660 - val_accuracy: 0.8052
Epoch 17/40
21/21 [==============================] - 0s 20ms/step - loss: 0.4825 - accuracy: 0.7964 - val_loss: 0.4803 - val_accuracy: 0.8117
Epoch 18/40
21/21 [==============================] - 1s 25ms/step - loss: 0.4800 - accuracy: 0.7997 - val_loss: 0.4684 - val_accuracy: 0.8312
Epoch 19/40
21/21 [==============================] - 1s 28ms/step - loss: 0.4762 - accuracy: 0.7997 - val_loss: 0.4817 - val_accuracy: 0.8052
Epoch 20/40
21/21 [==============================] - 0s 19ms/step - loss: 0.4768 - accuracy: 0.7948 - val_loss: 0.4579 - val_accuracy: 0.8377
Epoch 21/40
21/21 [==============================] - 0s 21ms/step - loss: 0.4931 - accuracy: 0.7850 - val_loss: 0.4654 - val_accuracy: 0.8312
Epoch 22/40
21/21 [==============================] - 1s 27ms/step - loss: 0.4697 - accuracy: 0.7948 - val_loss: 0.4563 - val_accuracy: 0.8442
Epoch 23/40
21/21 [==============================] - 0s 21ms/step - loss: 0.4705 - accuracy: 0.7997 - val_loss: 0.4580 - val_accuracy: 0.8312
Epoch 24/40
21/21 [==============================] - 0s 17ms/step - loss: 0.4784 - accuracy: 0.7948 - val_loss: 0.5014 - val_accuracy: 0.7922
Epoch 25/40
21/21 [==============================] - 0s 21ms/step - loss: 0.4823 - accuracy: 0.7752 - val_loss: 0.4572 - val_accuracy: 0.8312
Epoch 26/40
21/21 [==============================] - 0s 18ms/step - loss: 0.4615 - accuracy: 0.7932 - val_loss: 0.4620 - val_accuracy: 0.8312
Epoch 27/40
21/21 [==============================] - 0s 20ms/step - loss: 0.4529 - accuracy: 0.8094 - val_loss: 0.4487 - val_accuracy: 0.8377
Epoch 28/40
21/21 [==============================] - 0s 22ms/step - loss: 0.4575 - accuracy: 0.8111 - val_loss: 0.4470 - val_accuracy: 0.8312
Epoch 29/40
21/21 [==============================] - 1s 27ms/step - loss: 0.4557 - accuracy: 0.8046 - val_loss: 0.4919 - val_accuracy: 0.7792
Epoch 30/40
21/21 [==============================] - 0s 20ms/step - loss: 0.4475 - accuracy: 0.8241 - val_loss: 0.4499 - val_accuracy: 0.8312
Epoch 31/40
21/21 [==============================] - 0s 21ms/step - loss: 0.4483 - accuracy: 0.8046 - val_loss: 0.4403 - val_accuracy: 0.8312
Epoch 32/40
21/21 [==============================] - 0s 24ms/step - loss: 0.4492 - accuracy: 0.8127 - val_loss: 0.4471 - val_accuracy: 0.8312
Epoch 33/40
21/21 [==============================] - 1s 31ms/step - loss: 0.4465 - accuracy: 0.8160 - val_loss: 0.4410 - val_accuracy: 0.8506
Epoch 34/40
21/21 [==============================] - 1s 31ms/step - loss: 0.4459 - accuracy: 0.8176 - val_loss: 0.4431 - val_accuracy: 0.8247
Epoch 35/40
21/21 [==============================] - 1s 27ms/step - loss: 0.4458 - accuracy: 0.8290 - val_loss: 0.4386 - val_accuracy: 0.8312
Epoch 36/40
21/21 [==============================] - 0s 22ms/step - loss: 0.4385 - accuracy: 0.8225 - val_loss: 0.4389 - val_accuracy: 0.8247
Epoch 37/40
21/21 [==============================] - 0s 23ms/step - loss: 0.4374 - accuracy: 0.8274 - val_loss: 0.4993 - val_accuracy: 0.7922
Epoch 38/40
21/21 [==============================] - 1s 31ms/step - loss: 0.4644 - accuracy: 0.7980 - val_loss: 0.4512 - val_accuracy: 0.8182
Epoch 39/40
21/21 [==============================] - 1s 26ms/step - loss: 0.4353 - accuracy: 0.8225 - val_loss: 0.4275 - val_accuracy: 0.8571
Epoch 40/40
21/21 [==============================] - 0s 22ms/step - loss: 0.4338 - accuracy: 0.8274 - val_loss: 0.4317 - val_accuracy: 0.8312
```

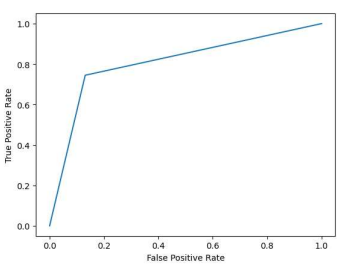
Out[44]:
```
<keras.callbacks.History at 0x2269b151fd0>
```

In [45]:
```
# Evaluate the model on the test data using `evaluate`
print("Evaluate on test data")
results = model.evaluate(X_test, y_test, batch_size=30)
print("test loss, test acc:", results)
```

```
Evaluate on test data
6/6 [==============================] - 0s 13ms/step - loss: 0.4317 - accuracy: 0.8312
test loss, test acc: [0.4317067563533783, 0.8311688303947449]
```

In [46]:
```
y_predan = model.predict(X_test)
y_predan = (y_predan >= 0.5)
print("Confusion Matrix")
print(confusion_matrix(y_test, y_predan))
print("Accuracy = " , accuracy_score(y_test, y_predan))
print(classification_report(y_test,y_predan))

from sklearn import metrics
# get roc curve points
fpr, tpr, _ = metrics.roc_curve(y_test,  y_predan)
# create ROC curve
plt.plot(fpr,tpr)
plt.ylabel('True Positive Rate')
plt.xlabel('False Positive Rate')
plt.show()

# calculate AUC
auc = metrics.roc_auc_score(y_test, y_predan)
print('AUC: %.3f' % auc)
```

```
Confusion Matrix
[[93 14]
 [12 35]]
Accuracy =  0.8311688311688312
              precision    recall  f1-score   support

           0       0.89      0.87      0.88       107
           1       0.71      0.74      0.73        47

    accuracy                           0.83       154
   macro avg       0.80      0.81      0.80       154
weighted avg       0.83      0.83      0.83       154
```




```
AUC: 0.807
```

In [ ]:

Forward Propagation NN

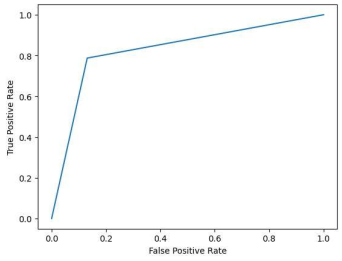
In [48]:
```
import keras
from keras.models import Sequential
from keras.layers import Dense
from keras import losses
from keras import optimizers
from keras import metrics

ann_class = Sequential()
ann_class.add(Dense(units=30, kernel_initializer="glorot_uniform", activation='relu', input_dim=8))
ann_class.add(Dense(units=10, kernel_initializer="glorot_uniform", activation='relu'))
ann_class.add(Dense(units=1,  activation='sigmoid'))
#ann_class.compile(optimizer='adam', loss='binary_crossentropy', metrics=['accuracy'])
ann_class.compile(loss = 'binary_crossentropy',  optimizer = 'adam', metrics = [metrics.accuracy])

ann_class.fit(X_train, y_train,batch_size=40, epochs=40)
```

```
print()
print()
yy_pred_ann = ann_class.predict(X_test)
yy_pred_ann = (yy_pred_ann > 0.5)
print(confusion_matrix(y_test, yy_pred_ann))
print(accuracy_score(y_test, yy_pred_ann))
print(classification_report(y_test,yy_pred_ann))
```

```
Epoch 1/40
16/16 [==============================] - 2s 11ms/step - loss: 2.8440 - accuracy: 0.0016
Epoch 2/40
16/16 [==============================] - 0s 8ms/step - loss: 1.3985 - accuracy: 0.0000e+00
Epoch 3/40
16/16 [==============================] - 0s 9ms/step - loss: 0.7559 - accuracy: 0.0000e+00
Epoch 4/40
16/16 [==============================] - 0s 10ms/step - loss: 0.5976 - accuracy: 0.0000e+00
Epoch 5/40
16/16 [==============================] - 0s 13ms/step - loss: 0.5761 - accuracy: 0.0000e+00
Epoch 6/40
16/16 [==============================] - 0s 12ms/step - loss: 0.5599 - accuracy: 0.0000e+00
Epoch 7/40
16/16 [==============================] - 0s 13ms/step - loss: 0.5479 - accuracy: 0.0000e+00
Epoch 8/40
16/16 [==============================] - 0s 12ms/step - loss: 0.5389 - accuracy: 0.0000e+00
Epoch 9/40
16/16 [==============================] - 0s 14ms/step - loss: 0.5304 - accuracy: 0.0000e+00
Epoch 10/40
16/16 [==============================] - 0s 13ms/step - loss: 0.5225 - accuracy: 0.0000e+00
Epoch 11/40
16/16 [==============================] - 0s 11ms/step - loss: 0.5171 - accuracy: 0.0000e+00
Epoch 12/40
16/16 [==============================] - 0s 13ms/step - loss: 0.5094 - accuracy: 0.0000e+00
Epoch 13/40
16/16 [==============================] - 0s 10ms/step - loss: 0.5031 - accuracy: 0.0000e+00
Epoch 14/40
16/16 [==============================] - 0s 22ms/step - loss: 0.4999 - accuracy: 0.0000e+00
Epoch 15/40
16/16 [==============================] - 0s 23ms/step - loss: 0.4926 - accuracy: 0.0000e+00
Epoch 16/40
16/16 [==============================] - 0s 21ms/step - loss: 0.4890 - accuracy: 0.0000e+00
Epoch 17/40
16/16 [==============================] - 0s 13ms/step - loss: 0.4844 - accuracy: 0.0000e+00
Epoch 18/40
16/16 [==============================] - 0s 12ms/step - loss: 0.4828 - accuracy: 0.0000e+00
Epoch 19/40
16/16 [==============================] - 0s 14ms/step - loss: 0.4784 - accuracy: 0.0000e+00
Epoch 20/40
16/16 [==============================] - 0s 14ms/step - loss: 0.4776 - accuracy: 0.0000e+00
Epoch 21/40
16/16 [==============================] - 0s 14ms/step - loss: 0.4739 - accuracy: 0.0000e+00
Epoch 22/40
16/16 [==============================] - 0s 13ms/step - loss: 0.4747 - accuracy: 0.0000e+00
Epoch 23/40
16/16 [==============================] - 0s 13ms/step - loss: 0.4711 - accuracy: 0.0000e+00
Epoch 24/40
16/16 [==============================] - 0s 14ms/step - loss: 0.4690 - accuracy: 0.0000e+00
Epoch 25/40
16/16 [==============================] - 0s 10ms/step - loss: 0.4707 - accuracy: 0.0000e+00
Epoch 26/40
16/16 [==============================] - 0s 22ms/step - loss: 0.4724 - accuracy: 0.0000e+00
Epoch 27/40
16/16 [==============================] - 0s 23ms/step - loss: 0.4704 - accuracy: 0.0000e+00
Epoch 28/40
16/16 [==============================] - 0s 23ms/step - loss: 0.4651 - accuracy: 0.0000e+00
Epoch 29/40
16/16 [==============================] - 0s 22ms/step - loss: 0.4626 - accuracy: 0.0000e+00
Epoch 30/40
16/16 [==============================] - 0s 23ms/step - loss: 0.4638 - accuracy: 0.0000e+00
Epoch 31/40
16/16 [==============================] - 0s 22ms/step - loss: 0.4599 - accuracy: 0.0000e+00
Epoch 32/40
16/16 [==============================] - 0s 14ms/step - loss: 0.4593 - accuracy: 0.0000e+00
Epoch 33/40
16/16 [==============================] - 0s 12ms/step - loss: 0.4623 - accuracy: 0.0000e+00
Epoch 34/40
16/16 [==============================] - 0s 11ms/step - loss: 0.4596 - accuracy: 0.0000e+00
Epoch 35/40
16/16 [==============================] - 0s 21ms/step - loss: 0.4601 - accuracy: 0.0000e+00
Epoch 36/40
16/16 [==============================] - 0s 22ms/step - loss: 0.4681 - accuracy: 0.0000e+00
Epoch 37/40
16/16 [==============================] - 0s 22ms/step - loss: 0.4674 - accuracy: 0.0000e+00
Epoch 38/40
16/16 [==============================] - 0s 19ms/step - loss: 0.4571 - accuracy: 0.0000e+00
Epoch 39/40
16/16 [==============================] - 0s 13ms/step - loss: 0.4552 - accuracy: 0.0000e+00
Epoch 40/40
16/16 [==============================] - 0s 14ms/step - loss: 0.4539 - accuracy: 0.0000e+00


[[93 14]
 [10 37]]
0.8441558441558441
              precision    recall  f1-score   support

           0       0.90      0.87      0.89       107
           1       0.73      0.79      0.76        47

    accuracy                           0.84       154
   macro avg       0.81      0.83      0.82       154
weighted avg       0.85      0.84      0.85       154
```

In [51]:

```
from sklearn import metrics
# get roc curve points
fpr, tpr, _ = metrics.roc_curve(y_test,  yy_pred_ann)

# create ROC curve
plt.plot(fpr,tpr)
plt.ylabel('True Positive Rate')
plt.xlabel('False Positive Rate')
plt.show()

# calculate AUC
auc = metrics.roc_auc_score(y_test, yy_pred_ann)
print('AUC: %.3f' % auc)
```




```
AUC: 0.828
```