Faculty of Computing



[Artificial intelligence]

LAB#11

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Batch: BSCS-6

Task 1:

Naive Bayes Algorithm:

Implement the naive Bayes algorithm on the dataset shared via the given link.

Dataset: https://tinyurl.com/y2r9vzde

```
import pandas as pd
from sklearn.model_selection import train_test_split
from sklearn.naive_bayes import GaussianNB
from sklearn.metrics import accuracy_score
df = pd.read_csv('Iris Dataset - Public Livelihood Data.csv')
print(df.head())
print(df.columns)

X = df.drop('Salary', axis=1)
y = df['Salary']
X = pd.get_dummies(X)
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2,
random_state=42)
model = GaussianNB()
model.fit(X_train, y_train)
y_pred = model.predict(X_test)
accuracy = accuracy_score(y_test, y_pred)
print("Accuracy:", accuracy)

print("\nPredicted labels: ", y_pred)
print("\nPredicted labels: ", y_pred)
print("Actual labels: ", y_test_values)
```

output:

```
C:\Users\MASTERCOMPUTERS\PycharmProjects\PythonProject\.venv\Scripts\python.exe C:\Users\MASTER
            Designation Education ...
                                           Country Salary
             State-gov Bachelors ... United-States <=50K
    1 Self-emp-not-inc Bachelors ... United-States <=50K
             Private HS-grad ... United-States <=50K
               Private 11th ... United-States <=50K
               Private Bachelors ...
凬
    [5 rows x 8 columns]
    Index(['Designation', 'Education', 'Marital Status', 'Field', 'Race', 'Gender',
           'Country', 'Salary'],
          dtype='object')
    Accuracy: 0.3821587594042684
    Predicted labels: ['>50K' '>50K' '>50K' ... '>50K' '>50K' '>50K']
    Actual labels: ['<=50K' '<=50K' '>50K' ... '>50K' '<=50K' '<=50K']
    Process finished with exit code 0
```