

Faculty of Computing



Artificial Intelligence

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LAB # 11

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Commands + Code + Text

Files

Analyze your files with code written by Gemini Upload

sample_dataIris Dataset - Public Livelihood ...

```
import pandas as pd
from sklearn.model_selection import train_test_split
from sklearn.naive_bayes import GaussianNB
from sklearn.metrics import accuracy_score
from sklearn.preprocessing import LabelEncoder

[3] df = pd.read_csv('/content/Iris Dataset - Public Livelihood Data.csv')
print(df.head())

0      Designation  Education  Marital Status  Field  Race \
1  Self-emp-not-inc  Bachelors  Married-civ-spouse  Exec-managerial  White
2      Private      HS-grad   Divorced  Handlers-cleaners  White
3      Private      11th      Married-civ-spouse  Handlers-cleaners  Black
4      Private  Bachelors  Married-civ-spouse  Prof-specialty  Black

Gender  Country  Salary
0  Male  United-States  <=50K
1  Male  United-States  <=50K
2  Male  United-States  <=50K
3  Male  United-States  <=50K
4  Female  Cuba  <=50K

[4] print(df.columns)
Index(['Designation', 'Education', 'Marital Status', 'Field', 'Race', 'Gender',
      'Country', 'Salary'],
      dtype='object')

[5] le = LabelEncoder()

[6] categorical_columns = ['Designation', 'Education', 'Marital Status', 'Field', 'Race', 'Gender', 'Country']
```

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4  Female  Cuba  <=50K

[4] print(df.columns)
Index(['Designation', 'Education', 'Marital Status', 'Field', 'Race', 'Gender',
      'Country', 'Salary'],
      dtype='object')

[5] le = LabelEncoder()

[6] categorical_columns = ['Designation', 'Education', 'Marital Status', 'Field', 'Race', 'Gender', 'Country']
for column in categorical_columns:
    df[column] = le.fit_transform(df[column])

df['Salary'] = le.fit_transform(df['Salary'])

[8] X = df.drop('Salary', axis=1)
y = df['Salary']

[9] X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)

[10] model = GaussianNB()
model.fit(X_train, y_train)

GaussianNB
GaussianNB()

[11] y_pred = model.predict(X_test)
```

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[7] df['Salary'] = le.fit_transform(df['Salary'])

[8] X = df.drop('Salary', axis=1)
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[9] X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)

[10] model = GaussianNB()
model.fit(X_train, y_train)

GaussianNB
GaussianNB()

[11] y_pred = model.predict(X_test)

[12] accuracy = accuracy_score(y_test, y_pred)
print("Accuracy:", accuracy)

Accuracy: 0.76025502844073

print("\nPredicted labels:", y_pred)
print("Actual labels: ", y_test.values)

Predicted labels: [0 0 0 ... 1 0 0]
Actual labels:    [0 0 1 ... 1 0 0]
```