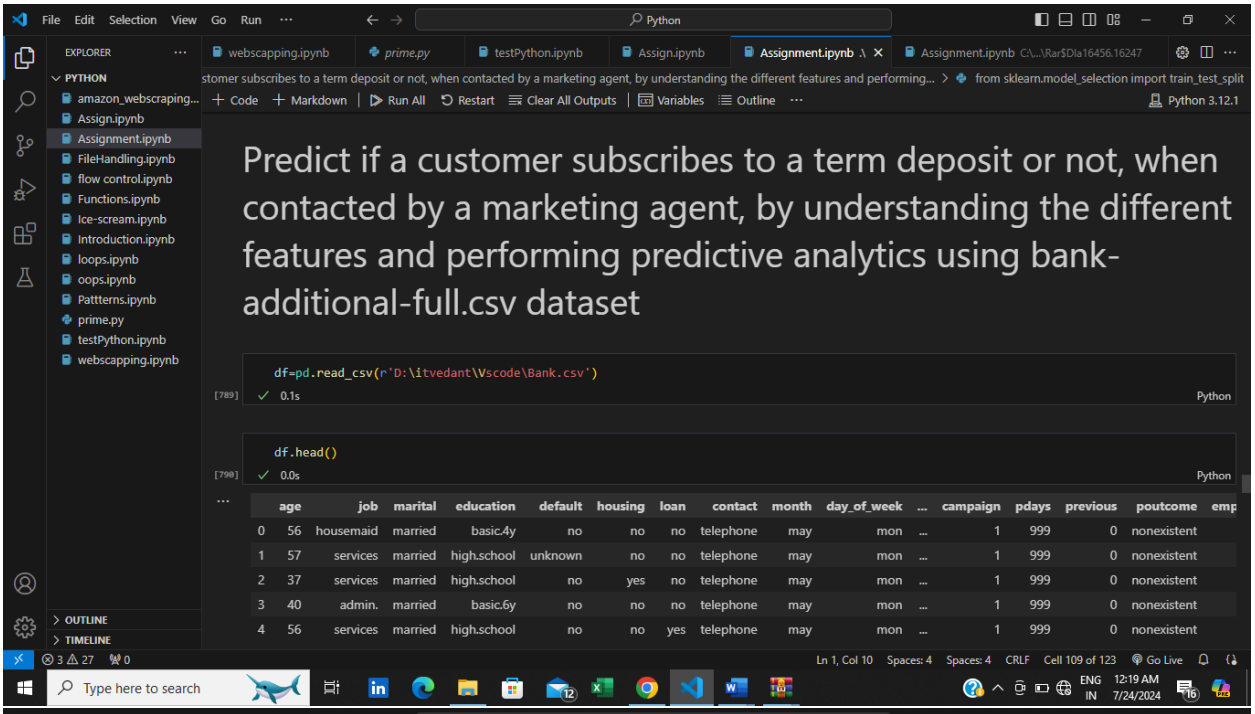
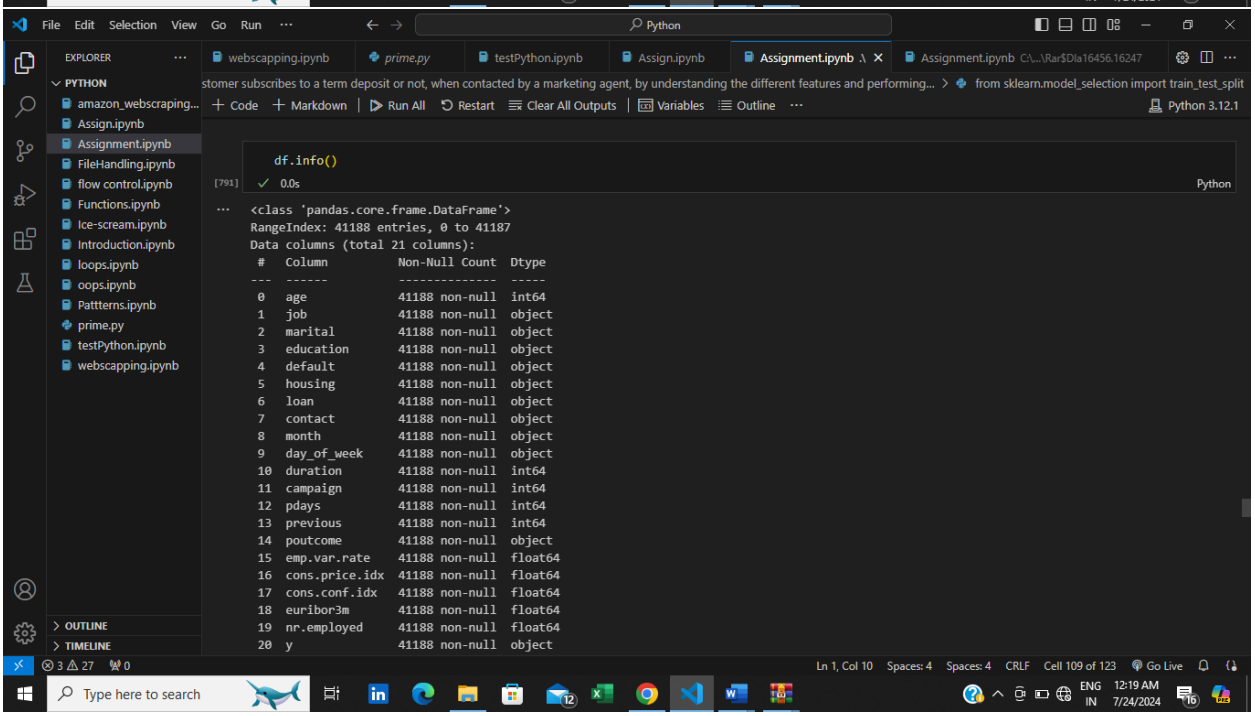
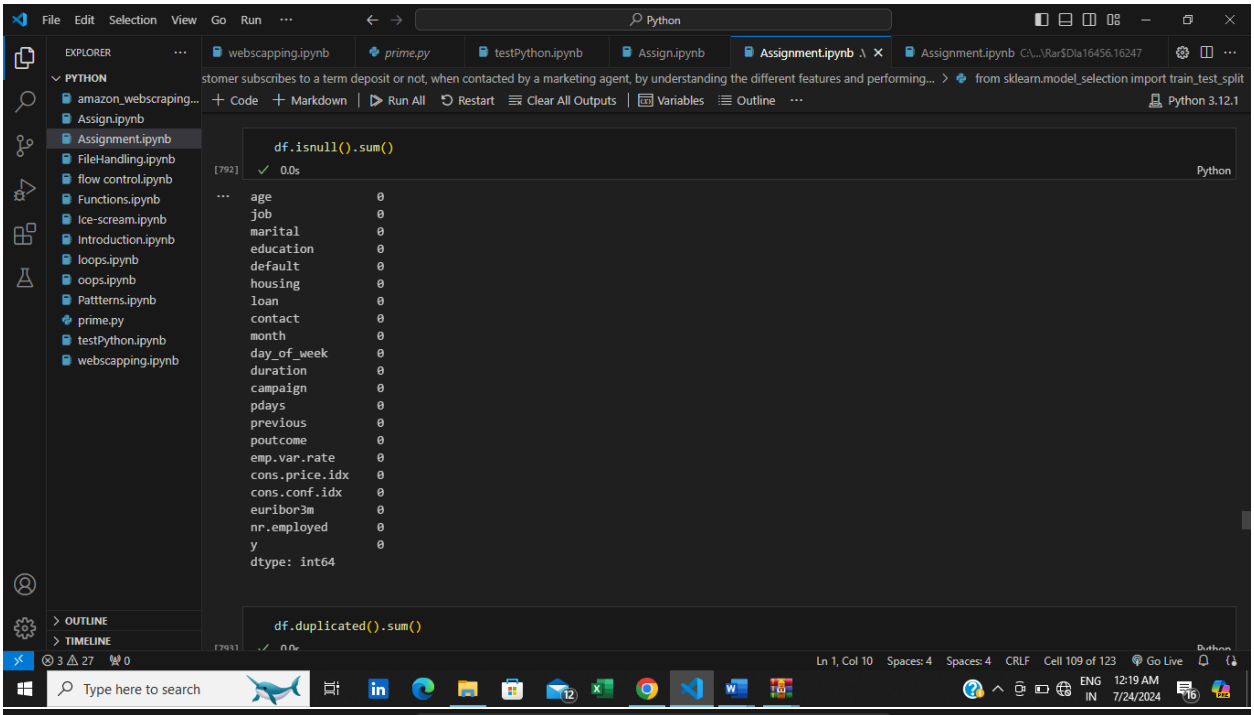
Predict if a customer subscribes to a term deposit or not, when contacted by a marketing agent, by understanding the different features and performing predictive analytics using bank-additional-full.csv dataset



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stomer subscribes to a term deposit or not, when contacted by a marketing agent, by understanding the different features and performing... > from sklearn.model_selection import train_test_split
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FileHandling.ipynb
flow control.ipynb
Functions.ipynb
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Introduction.ipynb
loops.ipynb
oops.ipynb
Pattterns.ipynb
prime.py
testPython.ipynb
webscapping.ipynb
df.isnull().sum()
[792] 0.0s
Python
age 0
job 0
marital 0
education 0
default 0
housing 0
loan 0
contact 0
month 0
day_of_week 0
duration 0
campaign 0
pdays 0
previous 0
poutcome 0
emp.var.rate 0
cons.price.idx 0
cons.conf.idx 0
euribor3m 0
nr.employed 0
y 0
dtype: int64
df.duplicated().sum()
OUTLINE
TIMELINE
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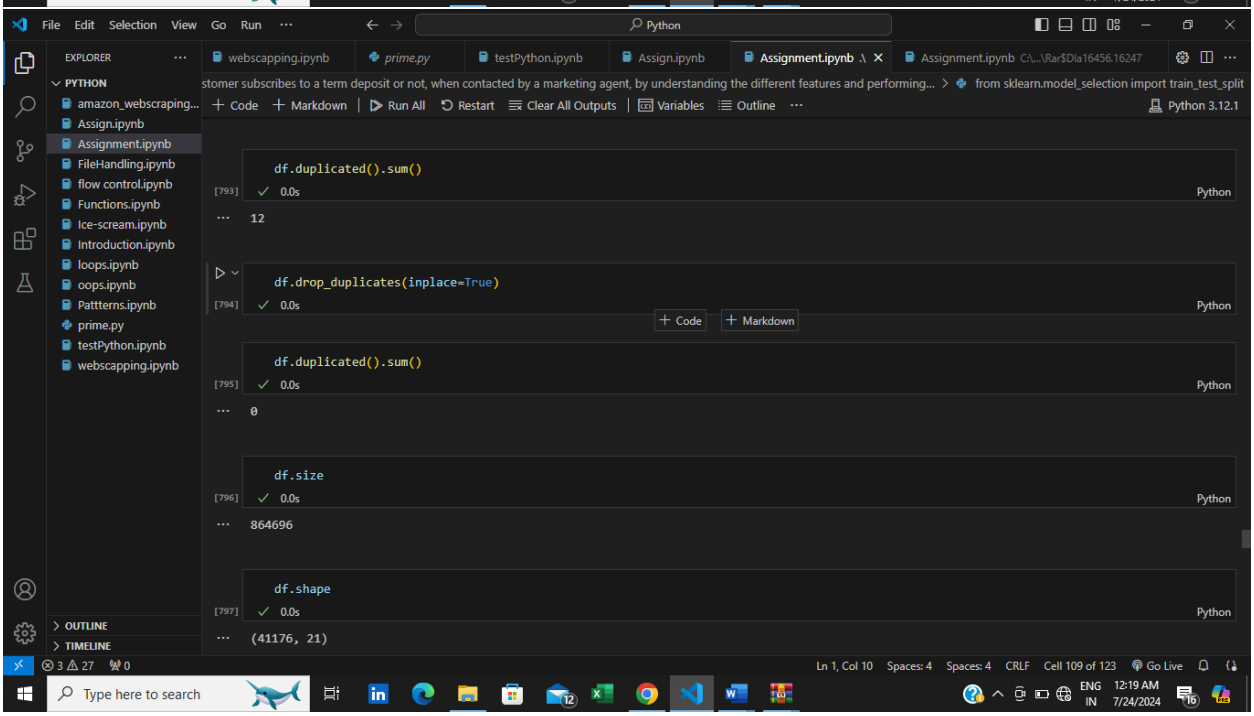
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loops.ipynb
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webscapping.ipynb
df.duplicated().sum()
[793] 0.0s
Python
12
df.drop_duplicates(inplace=True)
[794] 0.0s
Python
+ Code + Markdown
df.duplicated().sum()
[795] 0.0s
Python
0
df.size
[796] 0.0s
Python
864696
df.shape
[797] 0.0s
Python
(41176, 21)
OUTLINE
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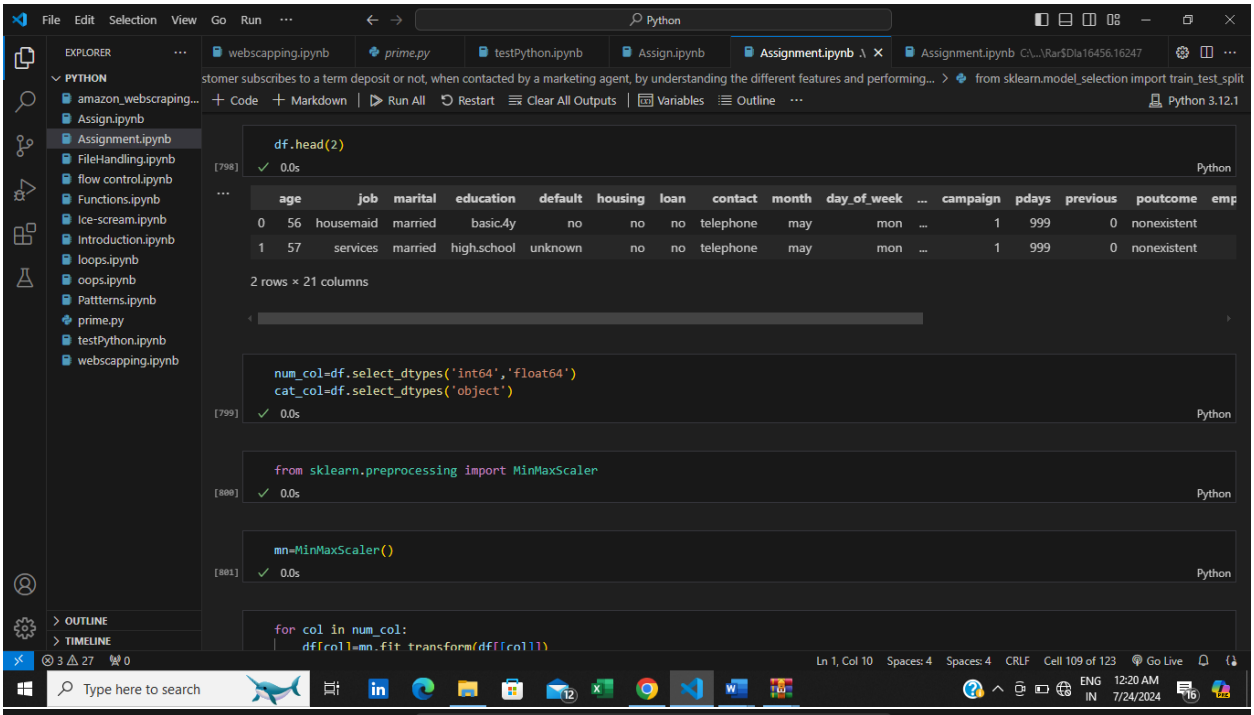
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OUTLINE
TIMELINE
df.head(2)
[798] 0.0s Python
age job marital education default housing loan contact month day_of_week ... campaign pdays previous poutcome emp
0 56 housemaid married basic.4y no no no telephone may mon ... 1 999 0 nonexistent
1 57 services married high.school unknown no no telephone may mon ... 1 999 0 nonexistent
2 rows × 21 columns
num_col=df.select_dtypes('int64','float64')
cat_col=df.select_dtypes('object')
[799] 0.0s Python
from sklearn.preprocessing import MinMaxScaler
[800] 0.0s Python
mn=MinMaxScaler()
[801] 0.0s Python
for col in num_col:
df[col]=mn.fit_transform(df[[col]])
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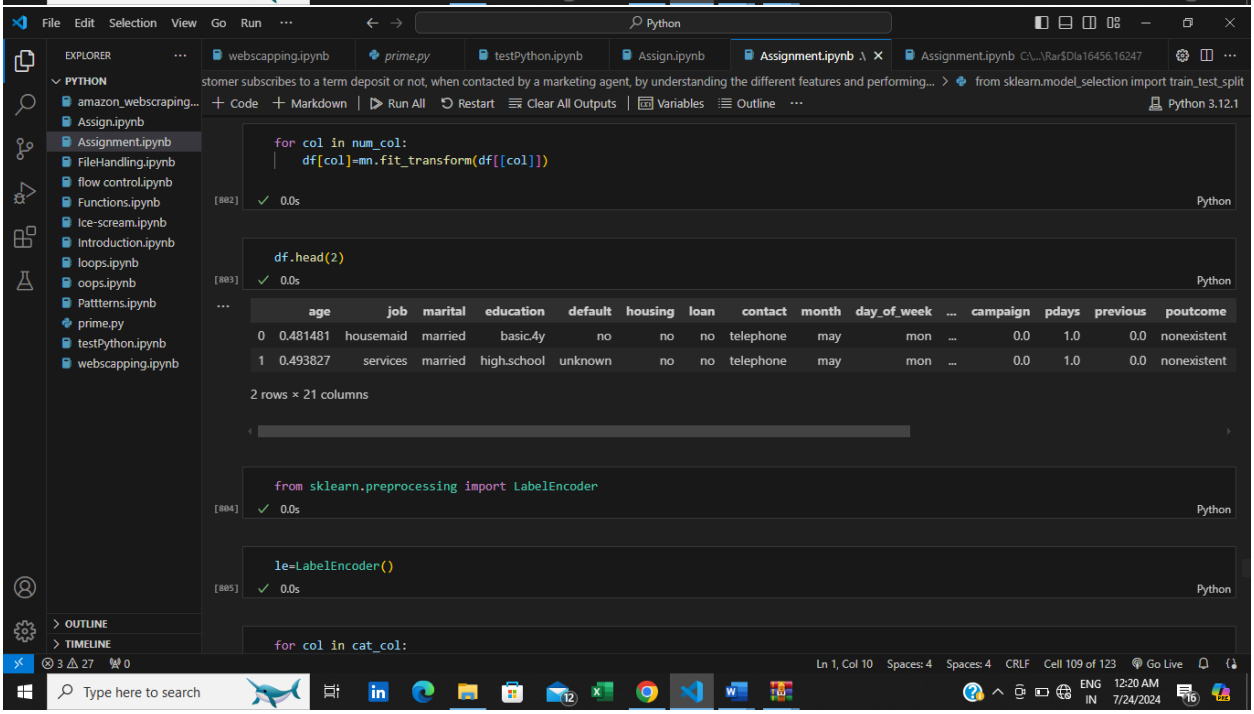
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FileHandling.ipynb
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Functions.ipynb
Ice-scream.ipynb
Introduction.ipynb
loops.ipynb
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for col in num_col:
df[col]=mn.fit_transform(df[[col]])
[802] 0.0s Python
df.head(2)
[803] 0.0s Python
age job marital education default housing loan contact month day_of_week ... campaign pdays previous poutcome
0 0.481481 housemaid married basic.4y no no no telephone may mon ... 0.0 1.0 0.0 nonexistent
1 0.493827 services married high.school unknown no no telephone may mon ... 0.0 1.0 0.0 nonexistent
2 rows × 21 columns
from sklearn.preprocessing import LabelEncoder
[804] 0.0s Python
le=LabelEncoder()
[805] 0.0s Python
for col in cat_col:
Ln 1, Col 10 Spaces: 4 Spaces: 4 CRLF Cell 109 of 123 Go Live
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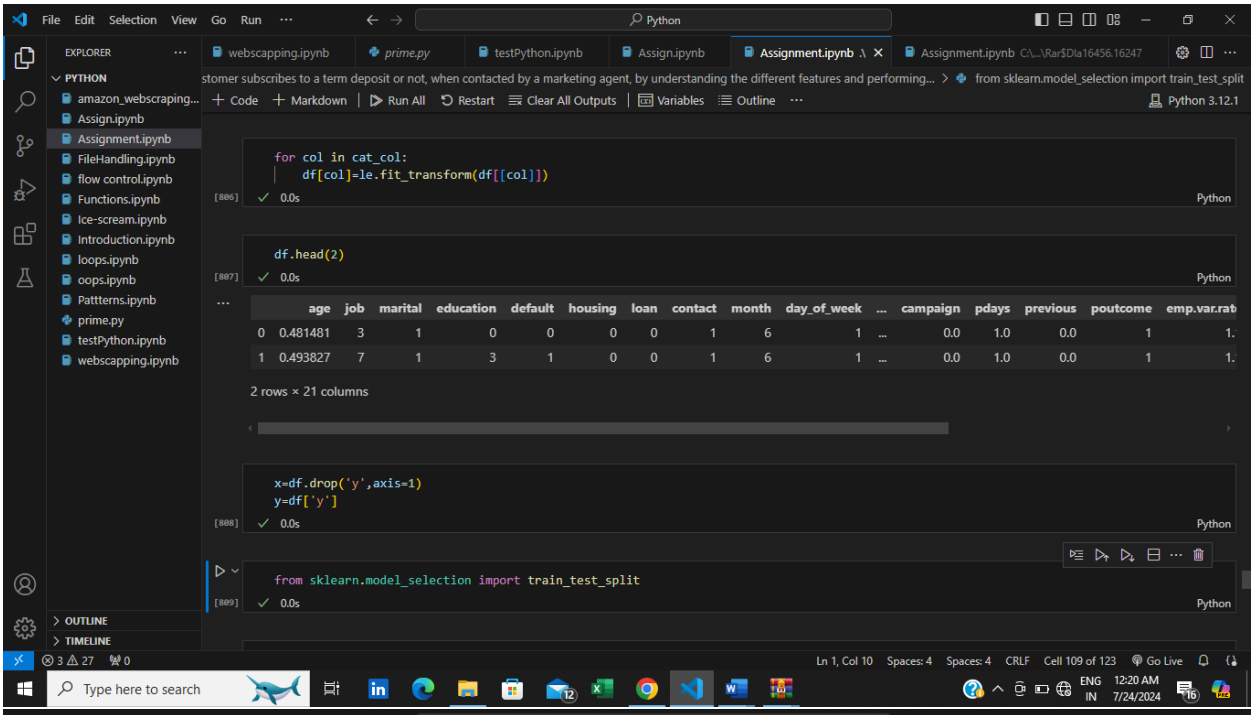
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for col in cat_col:
df[col]=le.fit_transform(df[[col]])
[806] 0.0s Python
df.head(2)
[807] 0.0s Python
age job marital education default housing loan contact month day_of_week ... campaign pdays previous poutcome emp.var.rat
0 0.481481 3 1 0 0 0 0 1 6 1 ... 0.0 1.0 0.0 1 1.
1 0.493827 7 1 3 1 0 0 1 6 1 ... 0.0 1.0 0.0 1 1.
2 rows × 21 columns
x=df.drop('y',axis=1)
y=df['y']
[808] 0.0s Python
from sklearn.model_selection import train_test_split
[809] 0.0s Python
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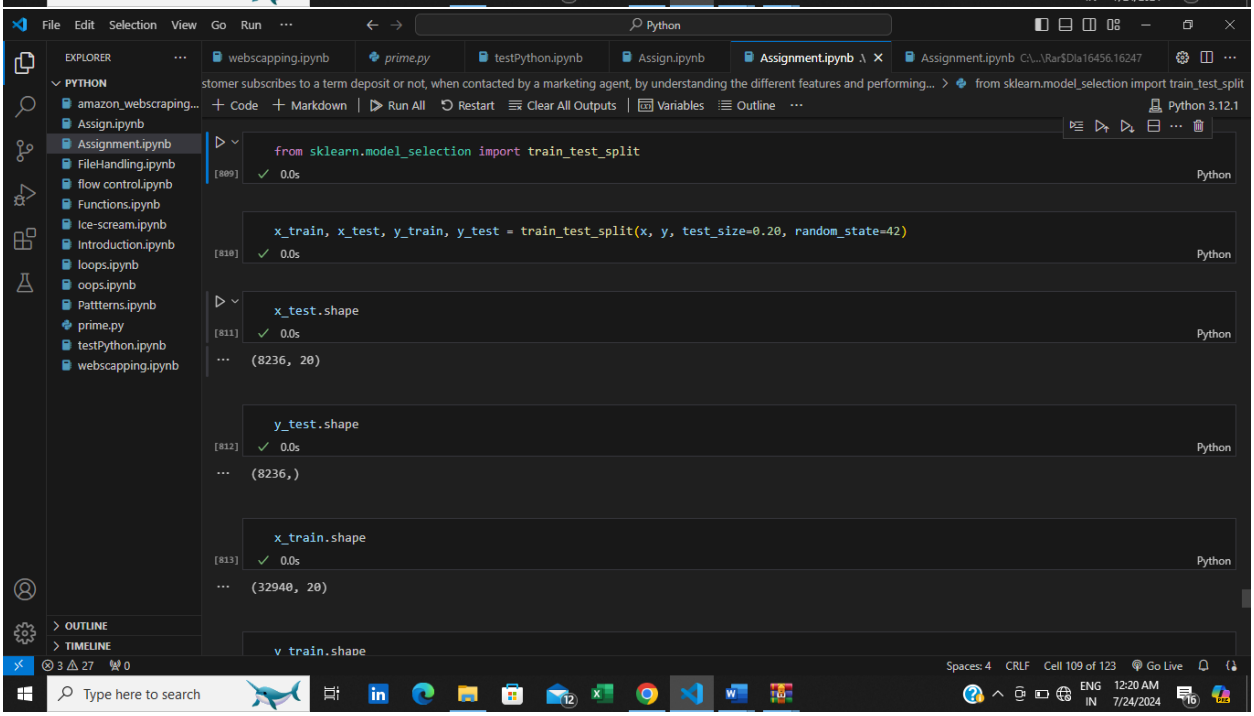
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from sklearn.model_selection import train_test_split
[809] 0.0s Python
x_train, x_test, y_train, y_test = train_test_split(x, y, test_size=0.20, random_state=42)
[810] 0.0s Python
x_test.shape
[811] 0.0s Python
(8236, 20)
y_test.shape
[812] 0.0s Python
(8236,)
x_train.shape
[813] 0.0s Python
(32940, 20)
y_train.shape
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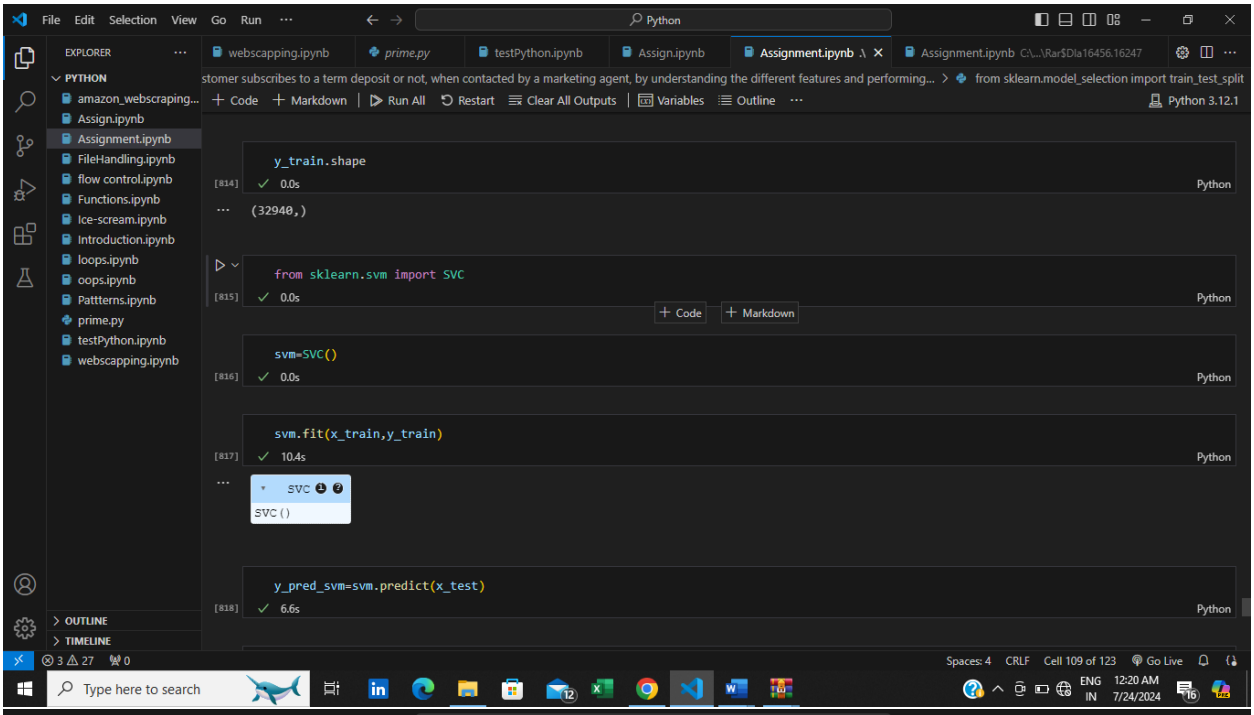
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Introduction.ipynb
loops.ipynb
oops.ipynb
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prime.py
testPython.ipynb
webscapping.ipynb
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from sklearn.model_selection import train_test_split
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Variables
Outline
Python 3.12.1
y_train.shape
[814] 0.0s
Python
(32940,)
from sklearn.svm import SVC
[815] 0.0s
Python
Code
Markdown
svm=SVC()
[816] 0.0s
Python
svm.fit(x_train,y_train)
[817] 10.4s
Python
SVC
SVC()
y_pred_svm=svm.predict(x_test)
[818] 6.6s
Python
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Cell 109 of 123
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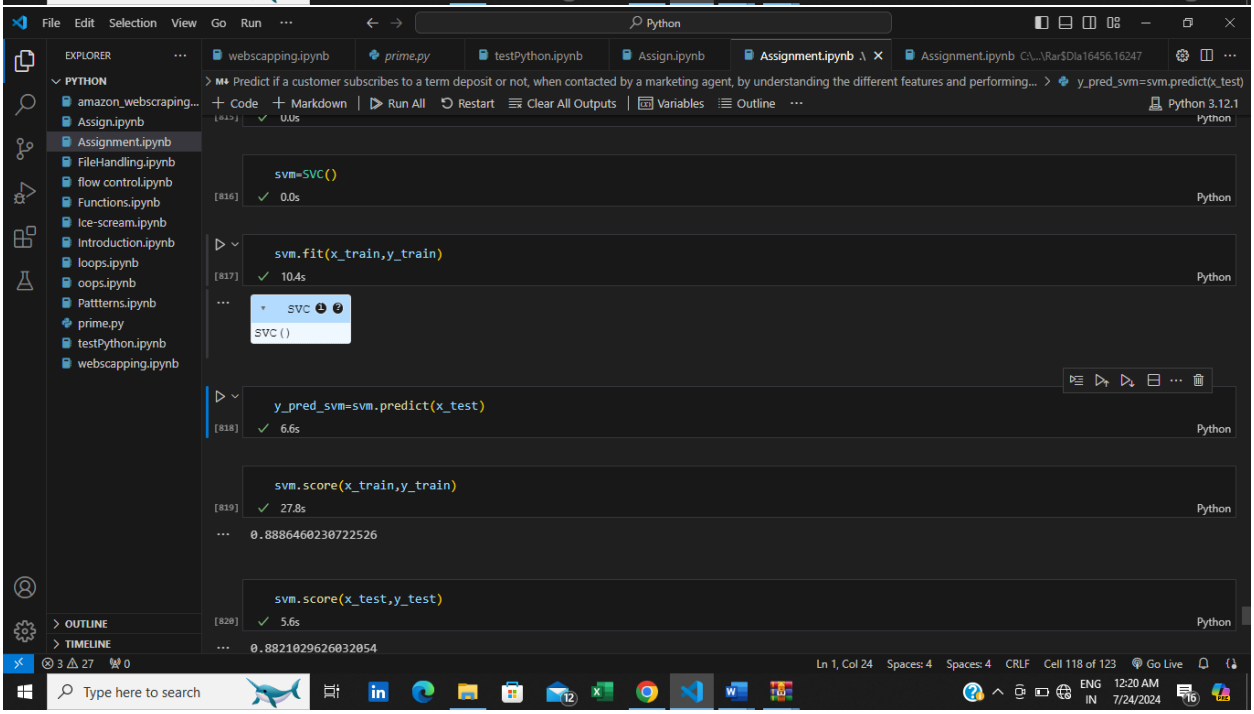
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Predict if a customer subscribes to a term deposit or not, when contacted by a marketing agent, by understanding the different features and performing...
y_pred_svm=svm.predict(x_test)
Code
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Run All
Restart
Clear All Outputs
Variables
Outline
Python 3.12.1
svm=SVC()
[816] 0.0s
Python
svm.fit(x_train,y_train)
[817] 10.4s
Python
SVC
SVC()
y_pred_svm=svm.predict(x_test)
[818] 6.6s
Python
svm.score(x_train,y_train)
[819] 27.8s
Python
0.8886460230722526
svm.score(x_test,y_test)
[820] 5.6s
Python
0.8821029626032054
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Cell 118 of 123
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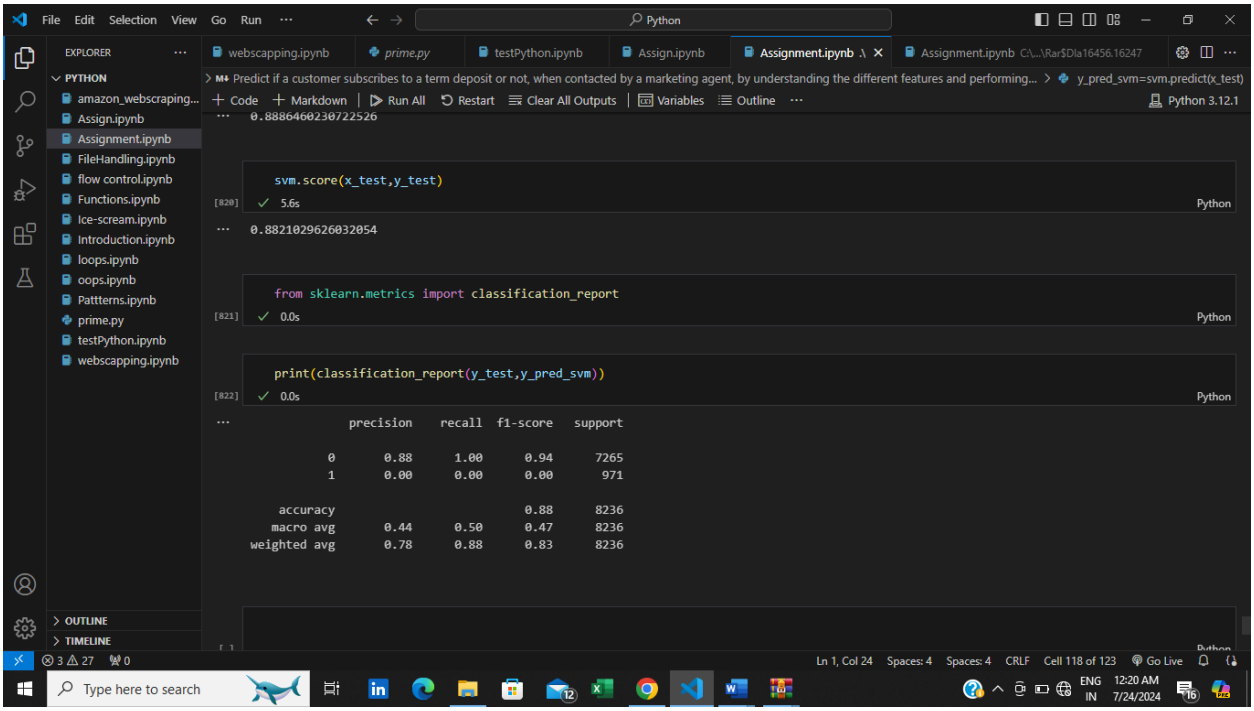
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Introduction.ipynb
loops.ipynb
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y_pred_svm=svm.predict(x_test)
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Run All
Restart
Clear All Outputs
Variables
Outline
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0.8886460230722526
svm.score(x_test,y_test)
[820]
5.6s
Python
0.8821029626032054
from sklearn.metrics import classification_report
[821]
0.0s
Python
print(classification_report(y_test,y_pred_svm))
[822]
0.0s
Python
precision recall f1-score support
0 0.88 1.00 0.94 7265
1 0.00 0.00 0.00 971
accuracy 0.88 8236
macro avg 0.44 0.50 0.47 8236
weighted avg 0.78 0.88 0.83 8236
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Cell 118 of 123
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