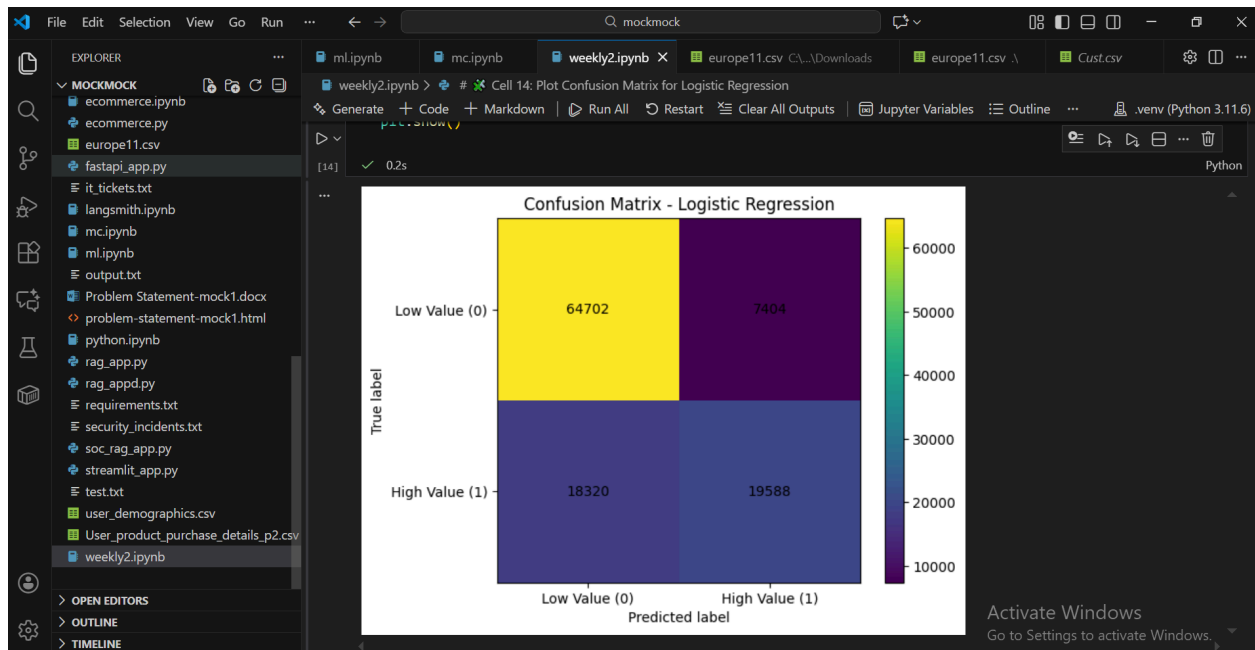


Abhishek Kumar Arya

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Weekly 2



```
print("◆ MLP ROC-AUC:", roc_auc_mlp)
print("\nConfusion Matrix (MLP):\n", cm_mlp)
print("\nClassification Report (MLP):\n", classification_report(y_test, y_pred_mlp))
```

◆ MLP Test Accuracy: 0.8915956020355225
3438/3438 2s 520us/step
◆ MLP ROC-AUC: 0.9426484602011937

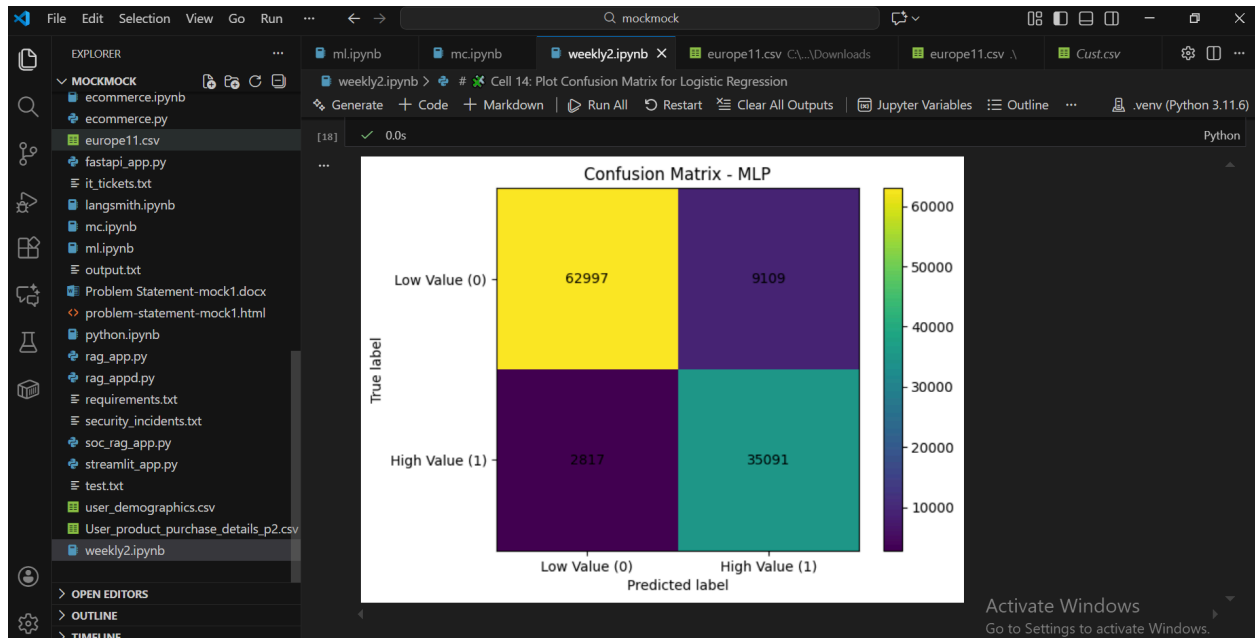
Confusion Matrix (MLP):

```
[[62997 9109]
 [ 2817 35091]]
```

Classification Report (MLP):

	precision	recall	f1-score	support
0	0.96	0.87	0.91	72106
1	0.79	0.93	0.85	37908
accuracy			0.89	110014
macro avg	0.88	0.90	0.88	110014
weighted avg	0.90	0.89	0.89	110014

Activate Windows
Go to Settings to activate Windows.



```
File Edit Selection View Go Run ... mockmock
EXPLORER
MOCKMOCK
  ecommerce.ipynb
  ecommerce.py
  europe11.csv
  fastapi_app.py
  it_tickets.txt
  langsmith.ipynb
  mc.ipynb
  ml.ipynb
  output.txt
  Problem Statement-mock1.docx
  problem-statement-mock1.html
  python.ipynb
  rag_app.py
  rag_appd.py
  requirements.txt
  security_incidents.txt
  soc_rag_app.py
  streamlit_app.py
  test.txt
  user_demographics.csv
  User_product_purchase_details_p2.csv
  weekly2.ipynb
  > OPEN EDITORS
  > OUTLINE
  > TIMELINE

weekly2.ipynb
Cell 14: Plot Confusion Matrix for Logistic Regression
Generate + Code + Markdown Run All Restart Clear All Outputs Jupyter Variables Outline .venv (Python 3.11.6)

[24] ✓ 0.5s
...
Decision Tree Accuracy: 0.8897867544130748
Decision Tree ROC-AUC: 0.9394611711716752

Confusion Matrix (Decision Tree):
[[62238 9868]
 [ 2257 35651]]

Classification Report (Decision Tree):
      precision    recall  f1-score   support

     0       0.97       0.86       0.91       72106
     1       0.78       0.94       0.85       37908

 accuracy          0.89       110014
 macro avg         0.87       0.90       0.88       110014
 weighted avg      0.90       0.89       0.89       110014

# 📌 BONUS Cell 25: Decision Tree Feature Importance
feature_importances = pd.Series(dtree.feature_importances_, index=X.columns)
feature importances = feature importances.sort values(ascending=False)
Activate Windows
Go to Settings to activate Windows.
```

Decision Tree (Top Levels)

