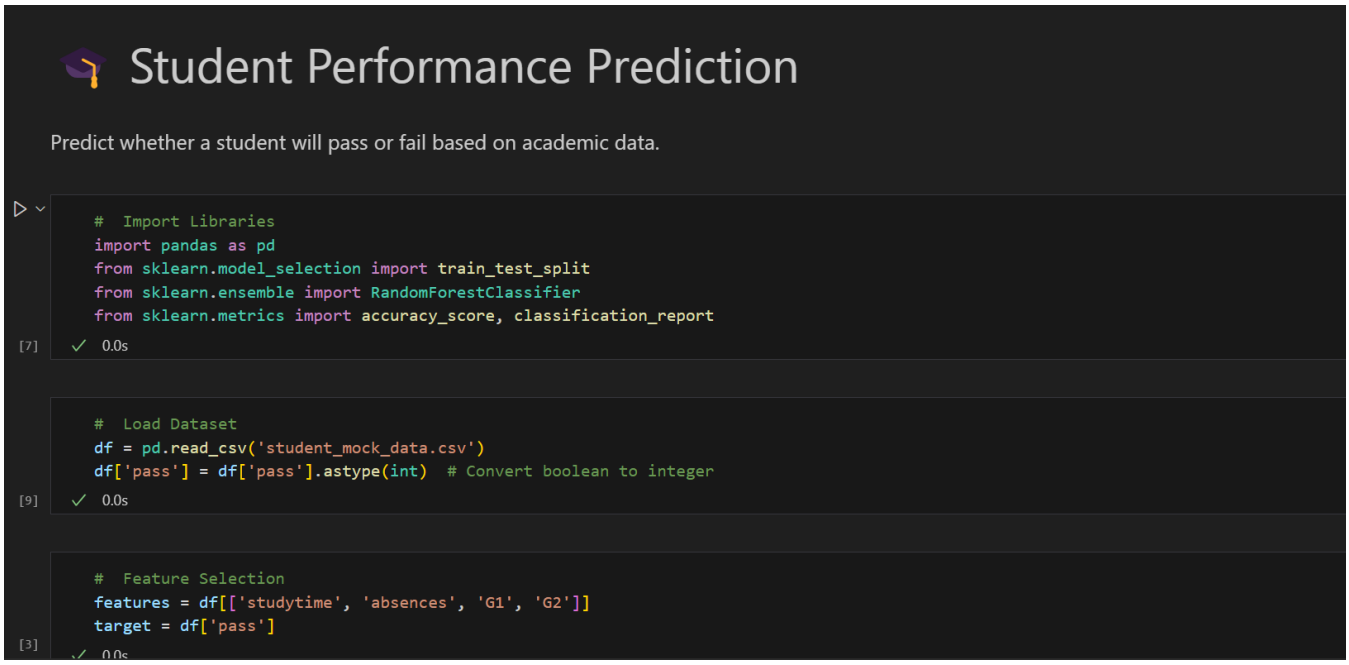
TASK -2

PREDICTIVE ANALYSIS USING MACHINE LEARNING

Data Source: **Download student_mock_data.csv**

Steps in the Jupyter Notebook:



```
    #  Evaluation
    y_pred = model.predict(X_test)
    print("Accuracy:", accuracy_score(y_test, y_pred))
    print(classification_report(y_test, y_pred))
[6]  ✓ 0.0s
...  Accuracy: 0.5166666666666667
                  precision    recall  f1-score   support

               0       0.54      0.42      0.47        31
               1       0.50      0.62      0.55        29

        accuracy                           0.52        60
       macro avg       0.52      0.52      0.51        60
    weighted avg       0.52      0.52      0.51        60
```

🎓 Student Performance Prediction – Highlights

- 📌 **Goal**: Predict if a student will **pass or fail** using their study habits and grades.
- 🧠 **Machine Learning Type**: **Classification** using **Random Forest Classifier**.
- 📊 **Features Used**: Study time, absences, and first two grade scores (G1, G2).
- 🛠️ **Steps Included**:
  - Feature selection 🔍
  - Model training 🤖
  - Evaluation with accuracy & metrics ✅
- 🏆 **Outcome**: Helps identify at-risk students for **early intervention**.