APRIL 4, 2024

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ASSIGNMENT 2

AIDI 2000

GROUP ASSIGNMENT

PROFESSOR SAJEEVA SALGADOE

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INTRODUCTION:

For this assignment, we were tasked with creating four different Machine Learning models to train on a sentiment analysis dataset and evaluate their performances. Our group chose to perform the following four ML algorithms:

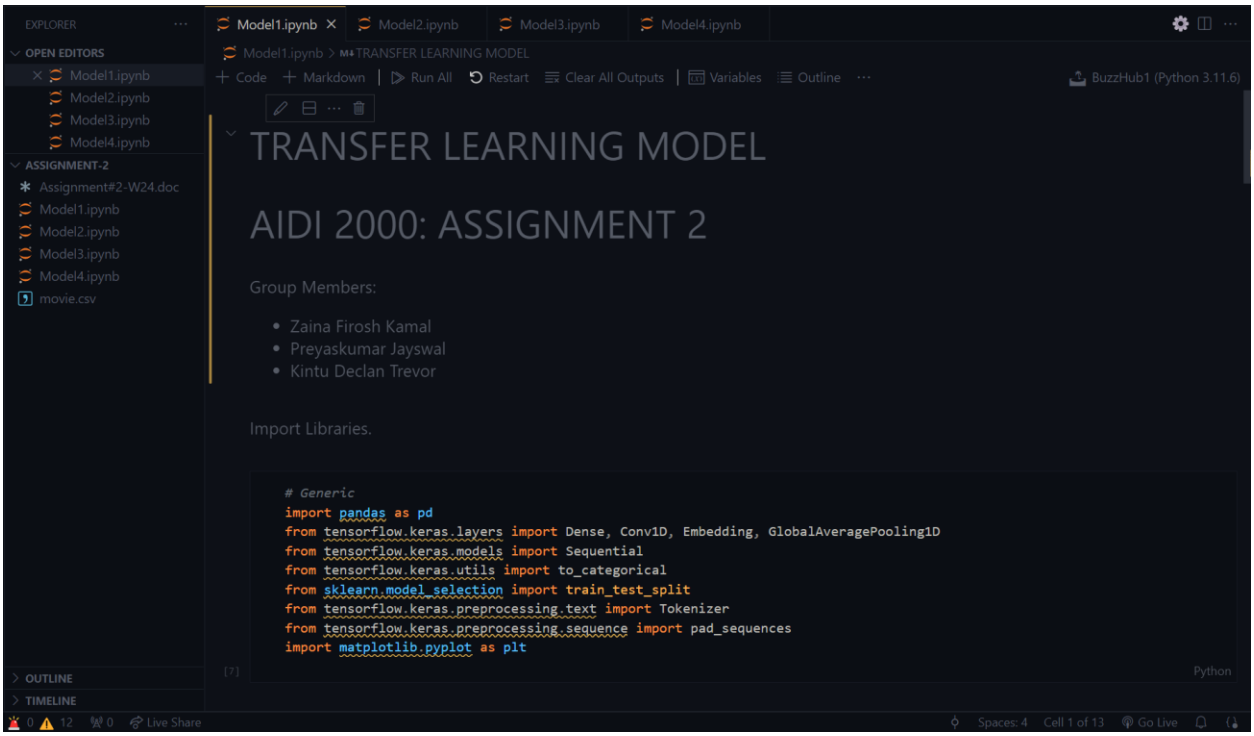
1) Transfer Learning.
2) Word Embedding.
3) Logistic Regression.
4) An Ensemble Model that combines results from Random Forest classification and Gradient-Boosted classification.

MACHINE LEARNING MODELS:

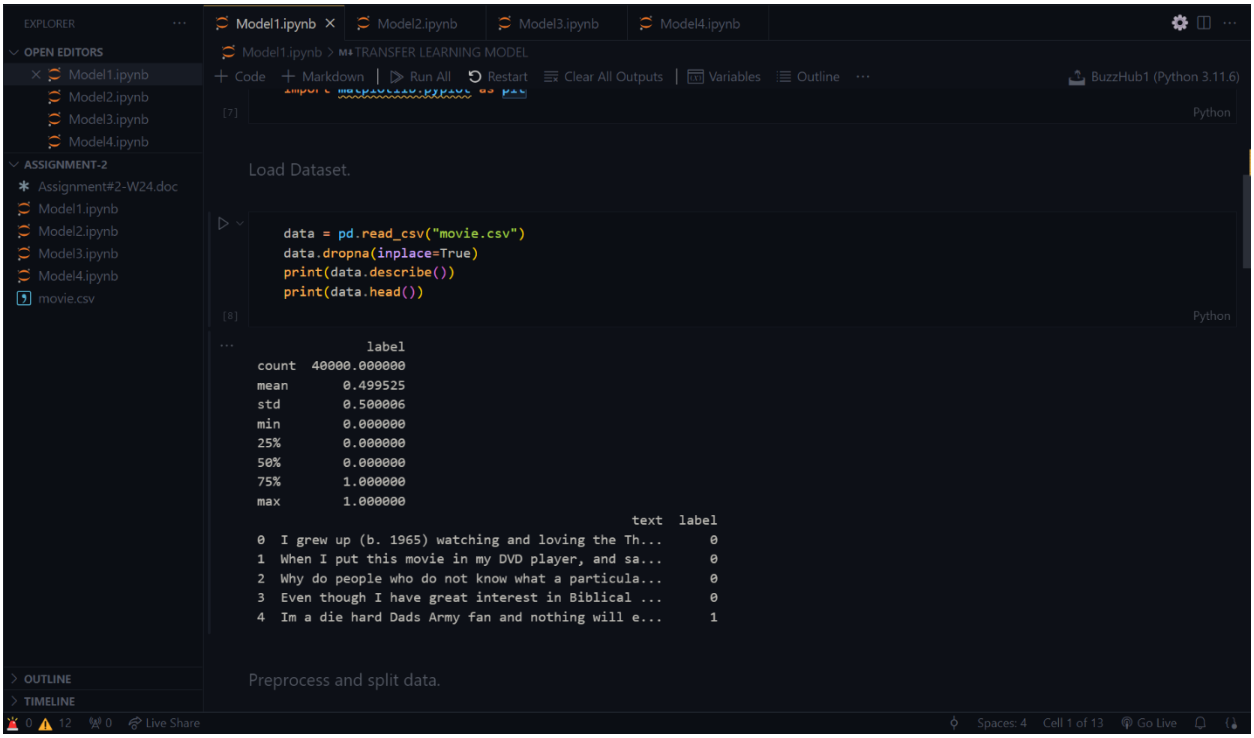
This is how we executed each model.

Model 1: Transfer Learning.

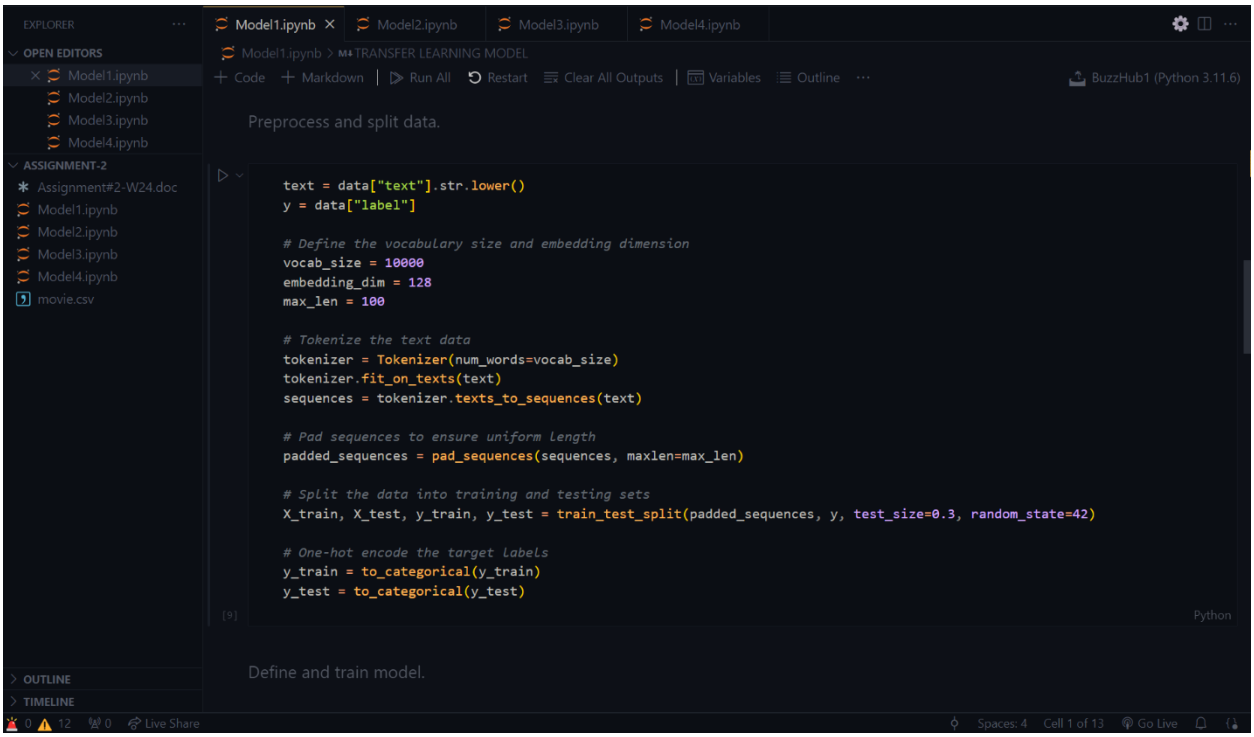
Load necessary libraries.



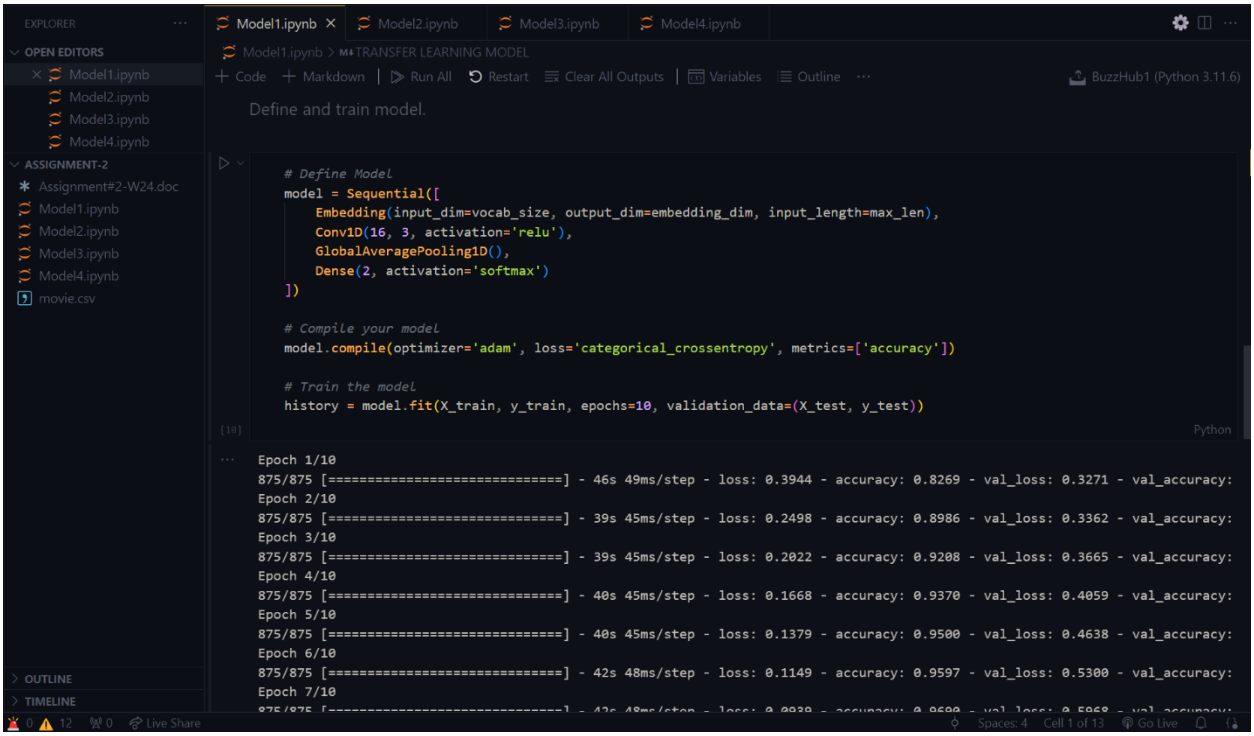
Load the dataset.



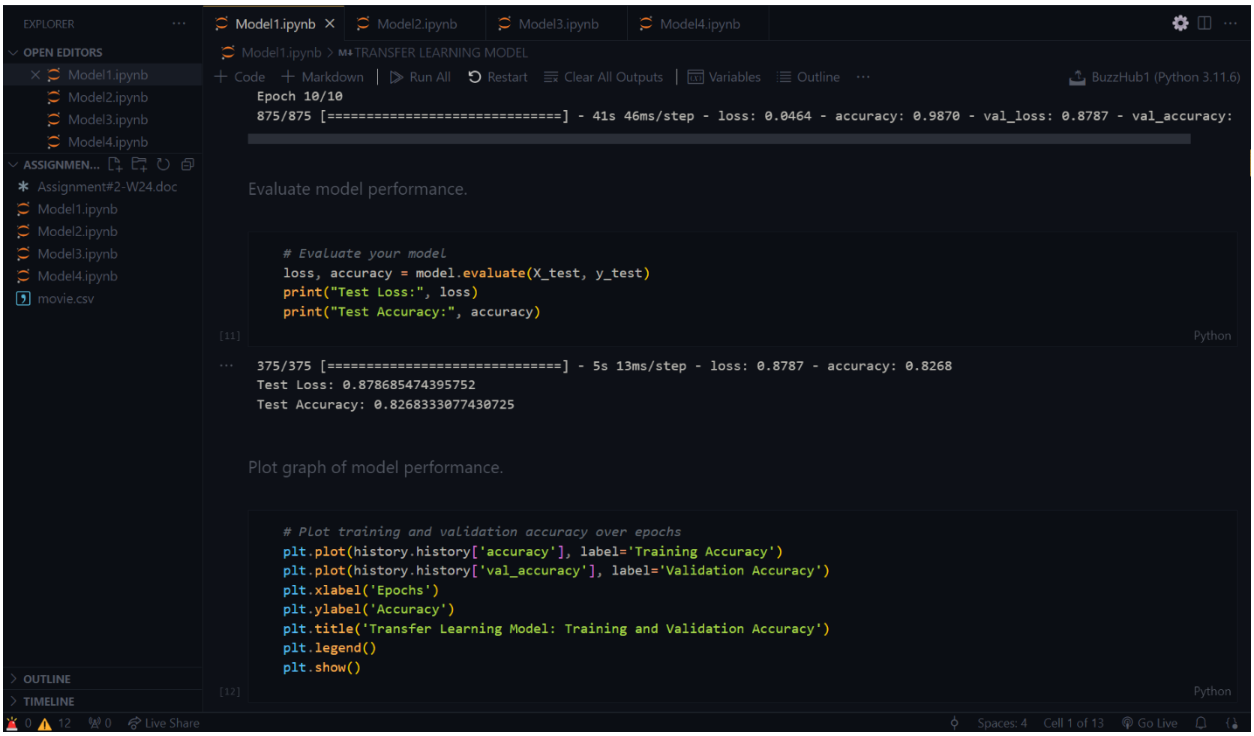
Preprocess and split the data.



Define and train the model.

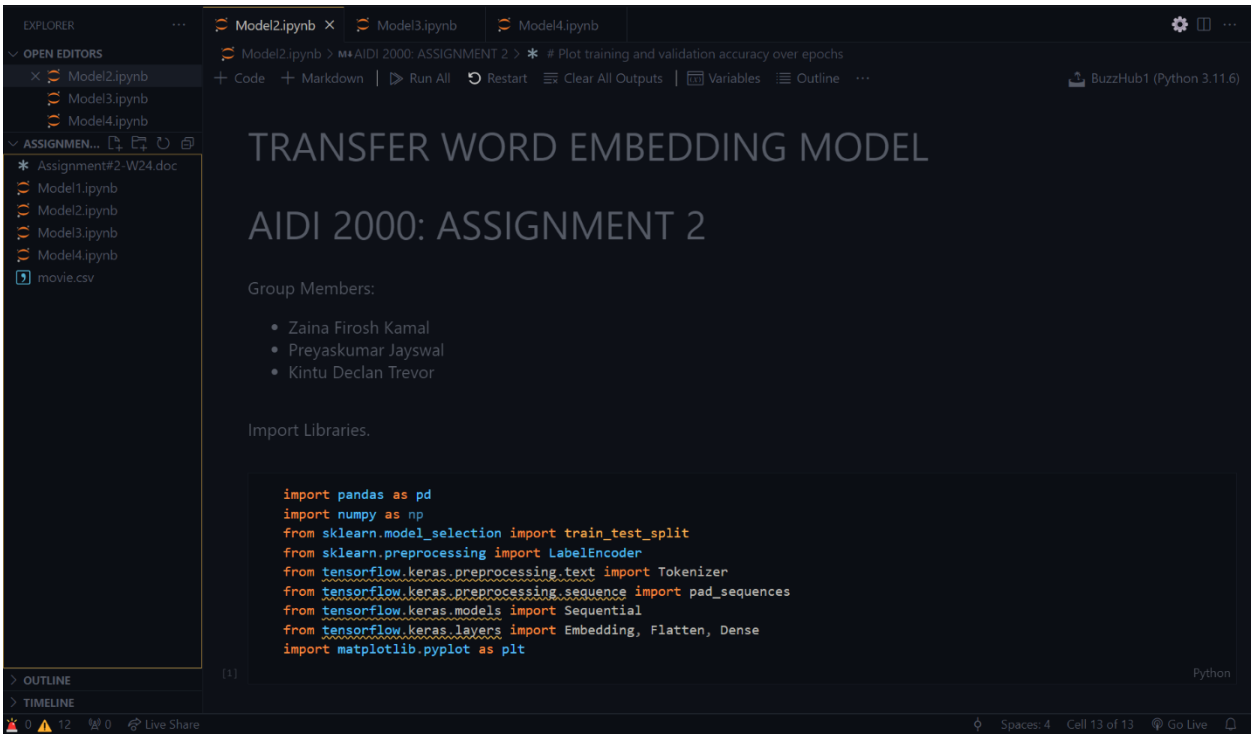


Make predictions and evaluate model performance.

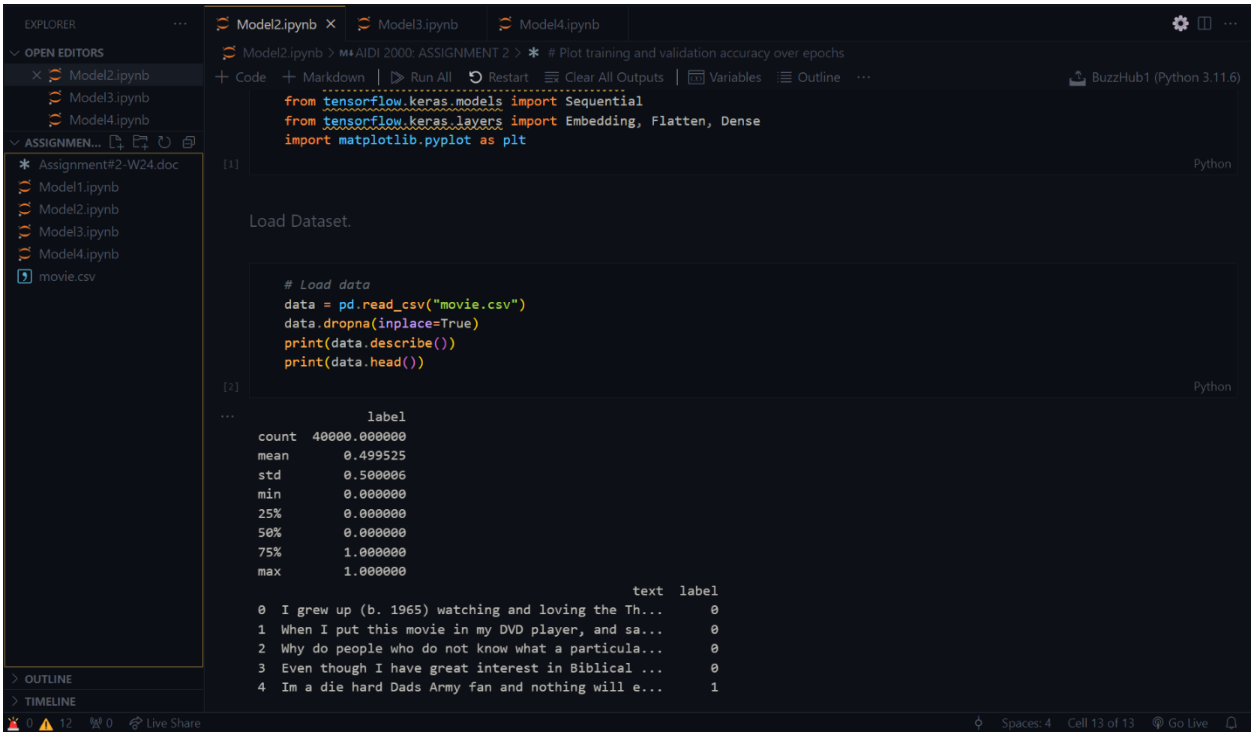


Model 2: Word Embedding.

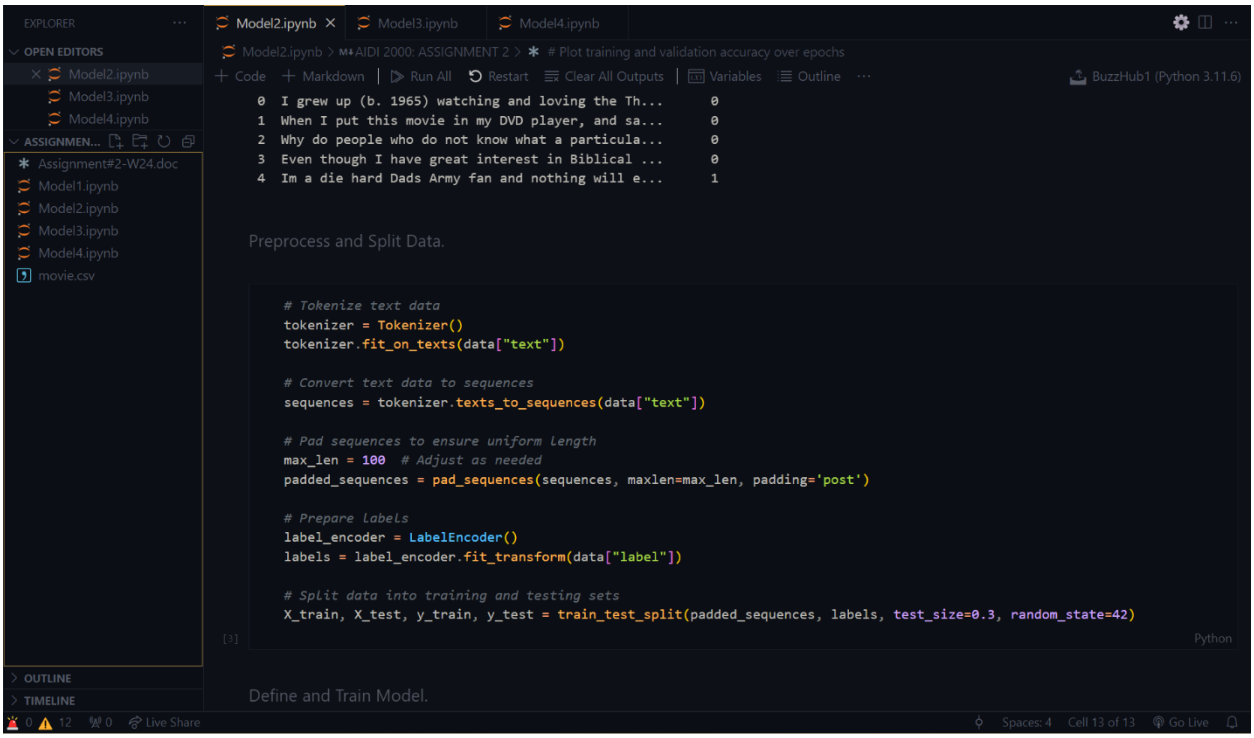
Load necessary libraries.



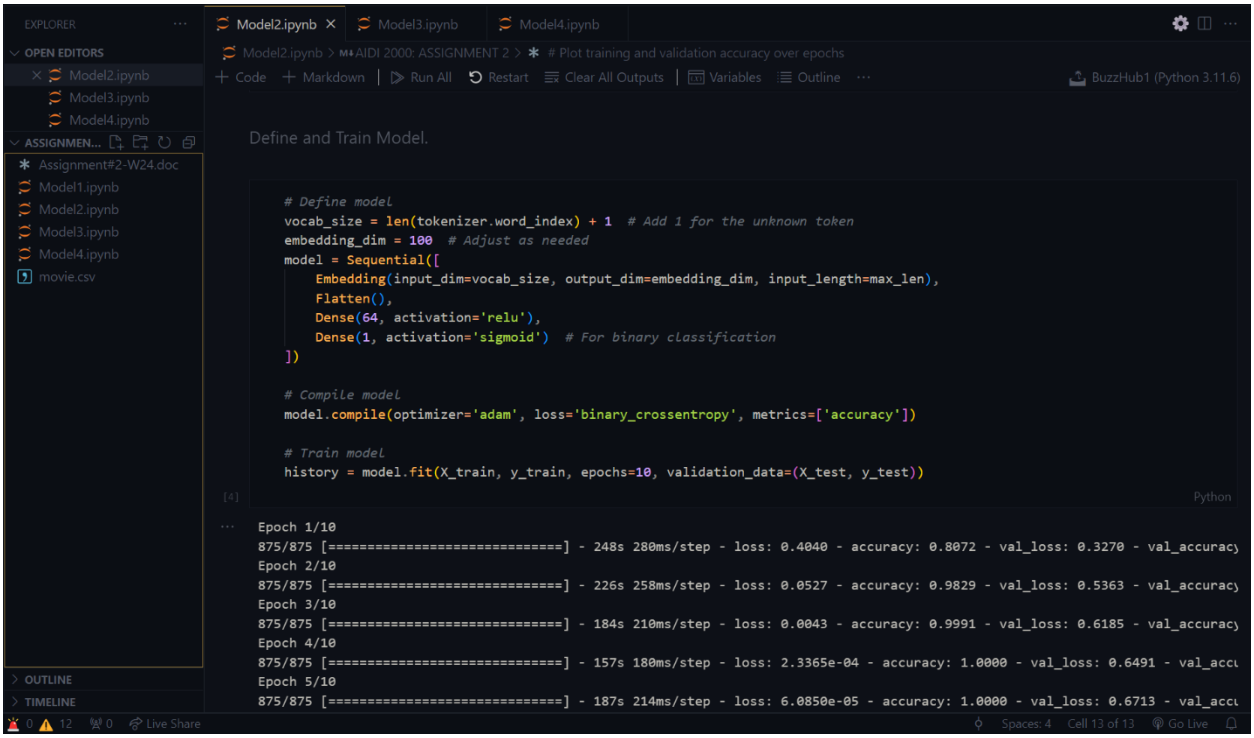
Load dataset.



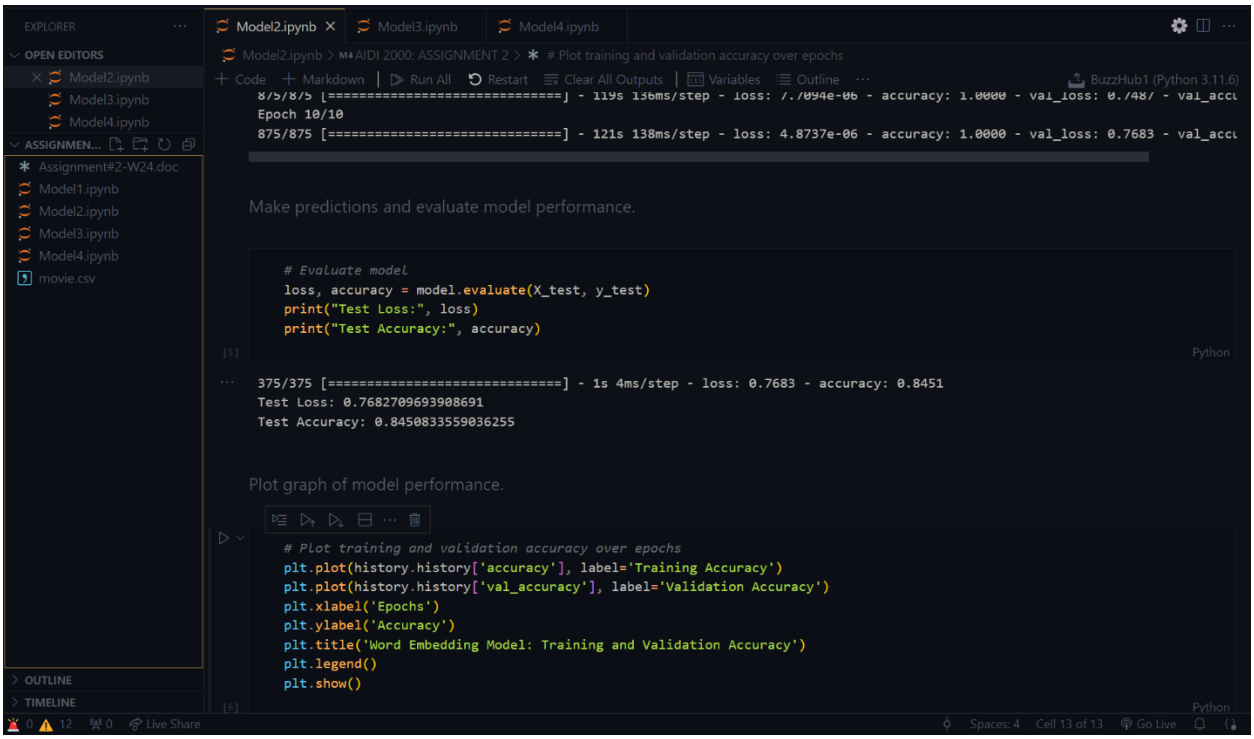
Preprocess and split data.



Define and train the model.

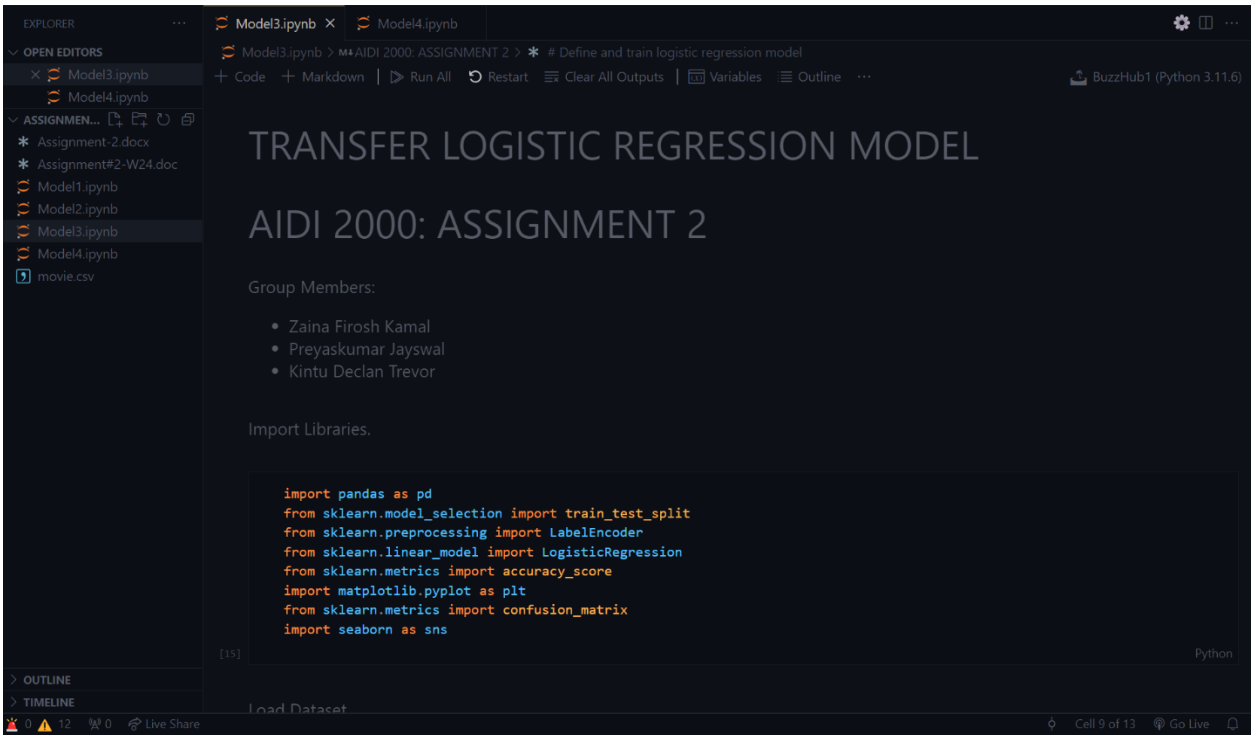


Make predictions and evaluate model performance.

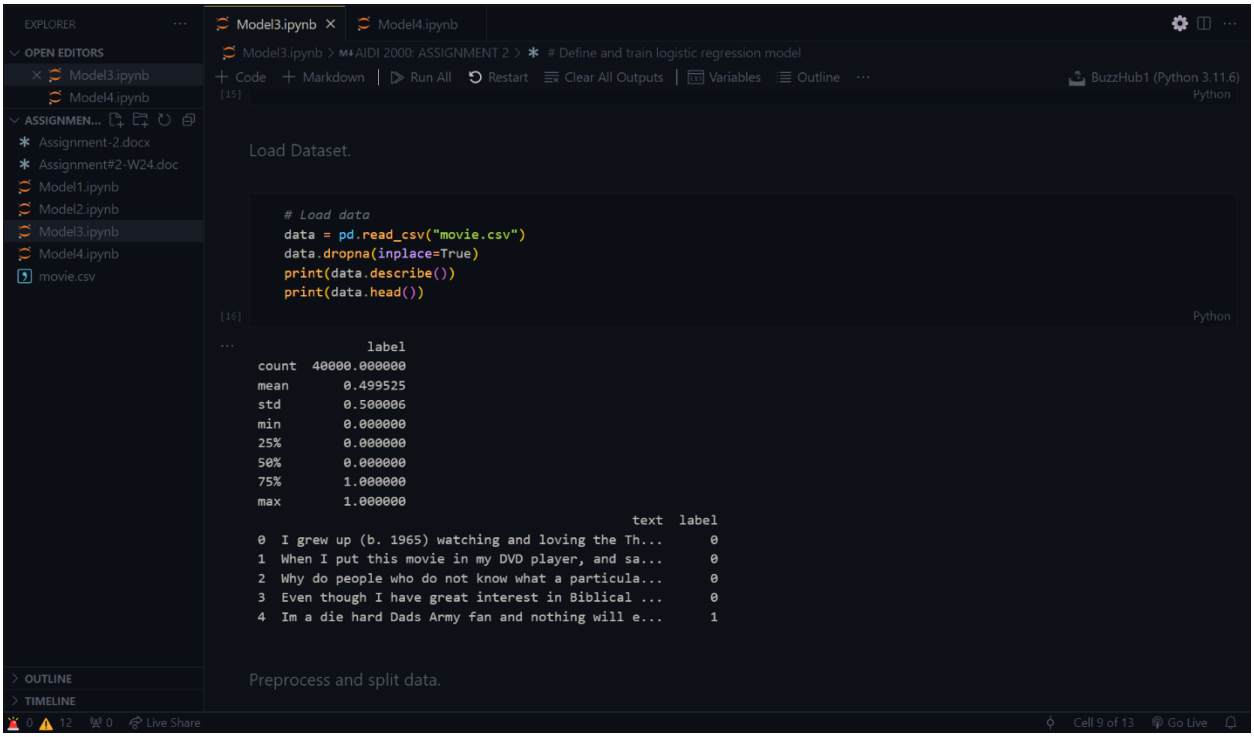


Model 3: Logistic Regression.

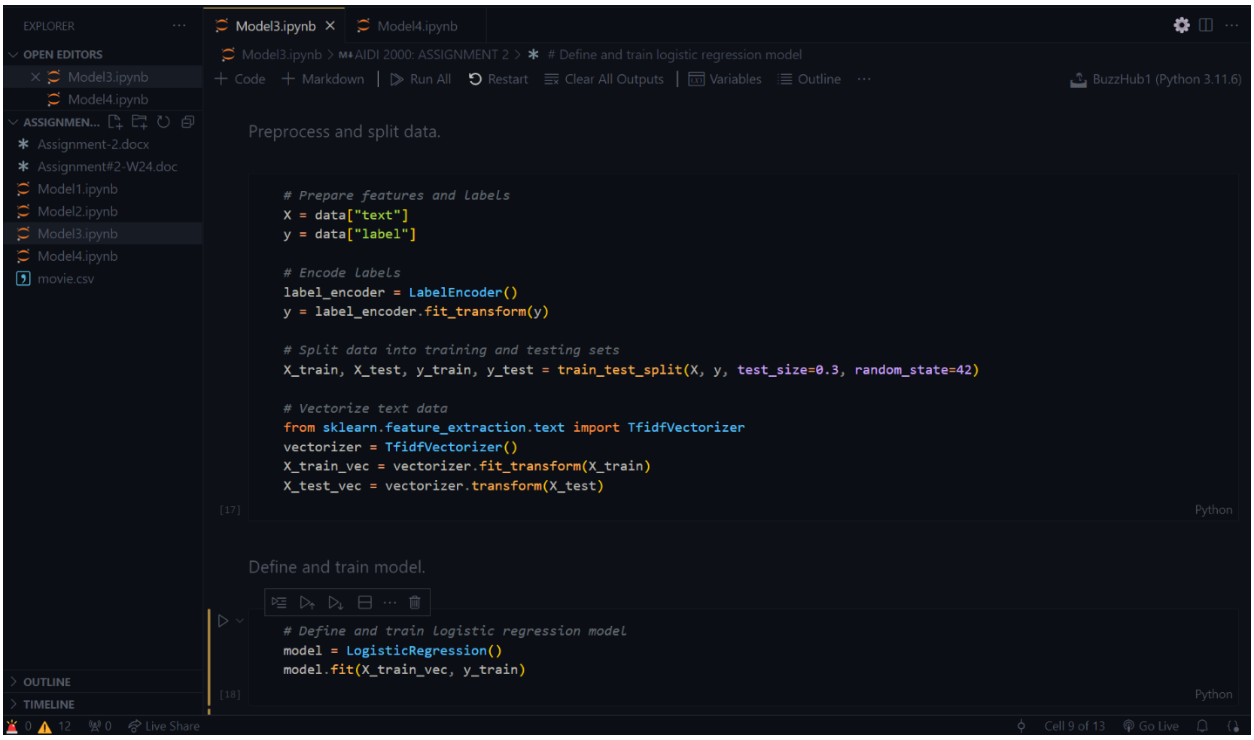
Import necessary libraries.



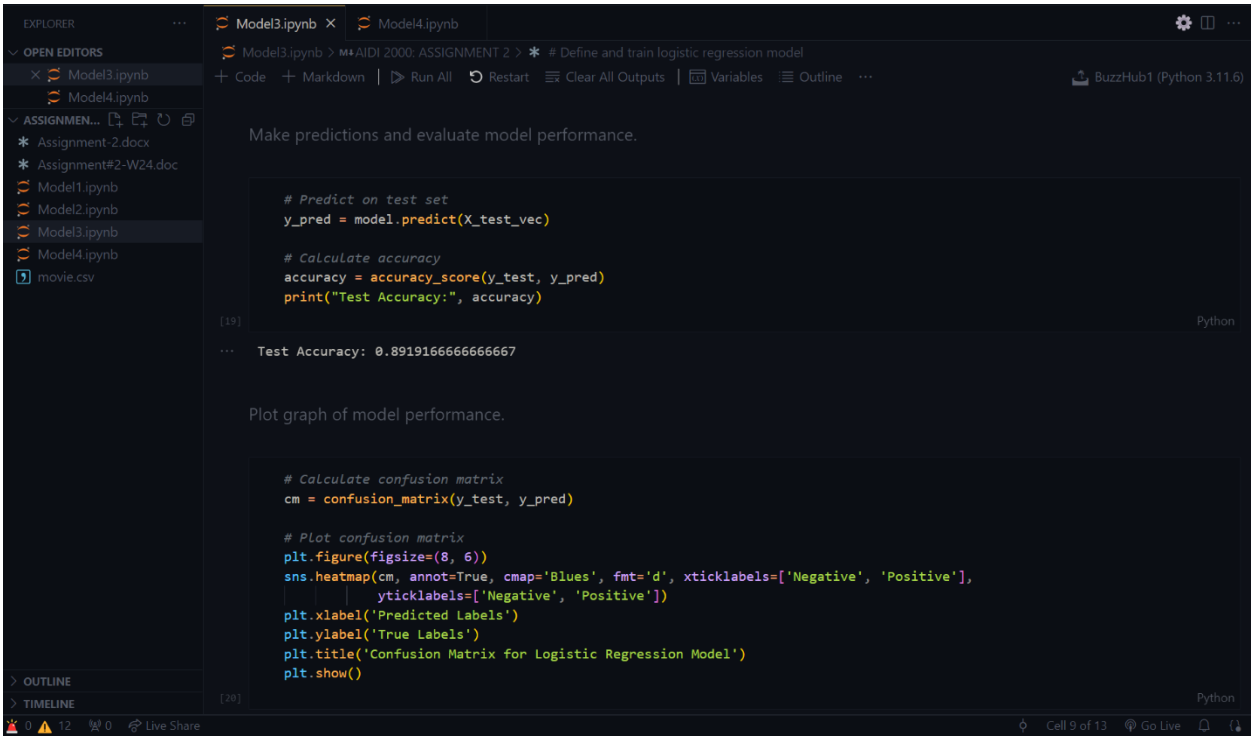
Load the dataset.

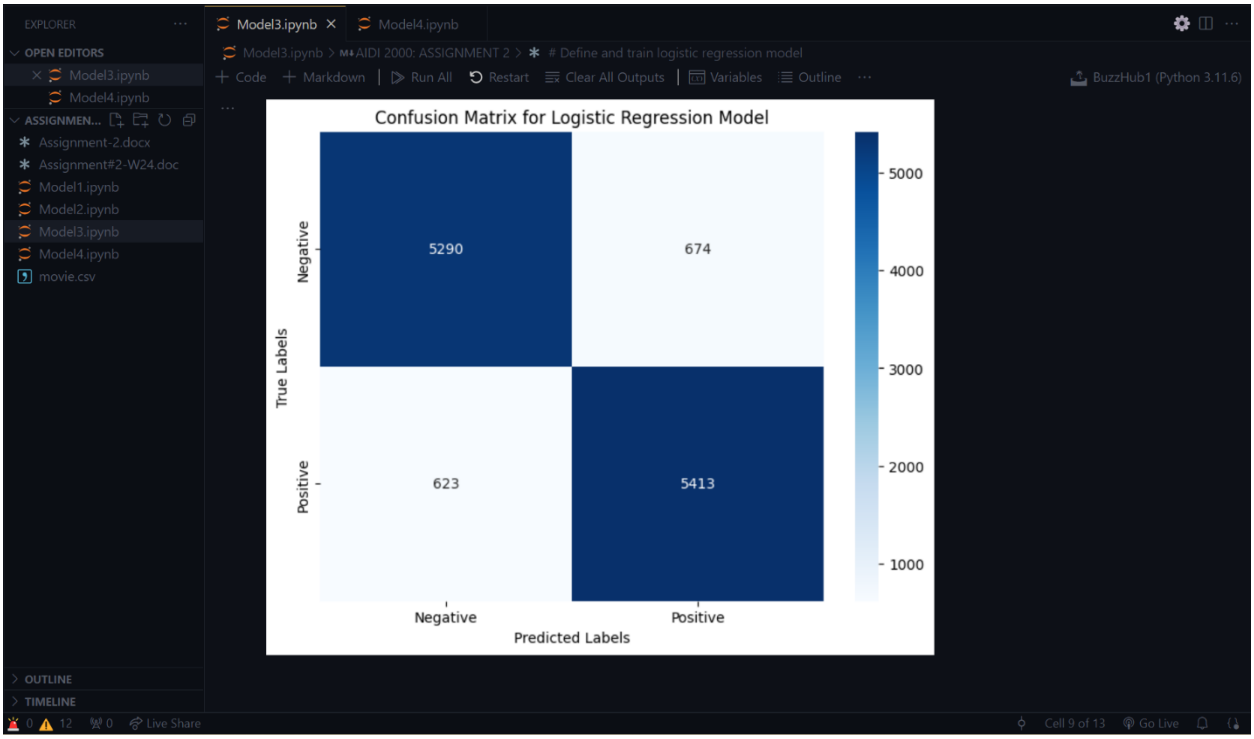


Preprocess data, split data, define the model and train the model.



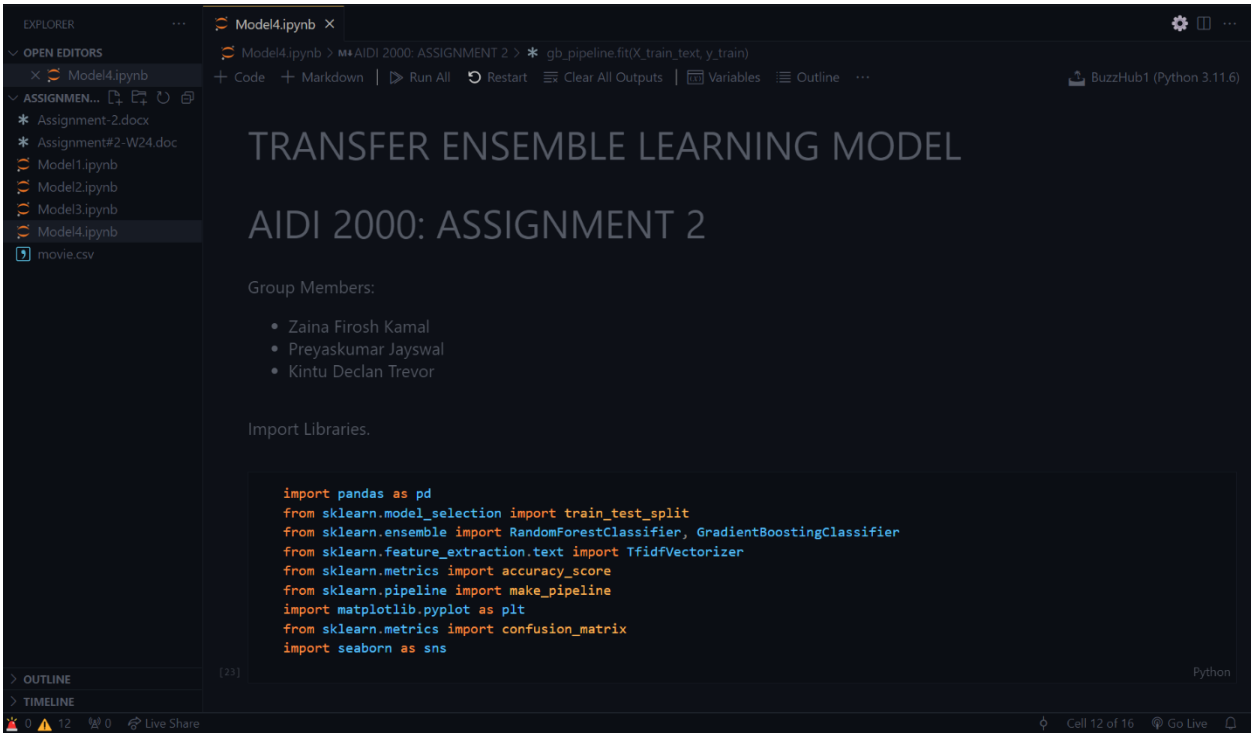
Make predictions and evaluate model performance.



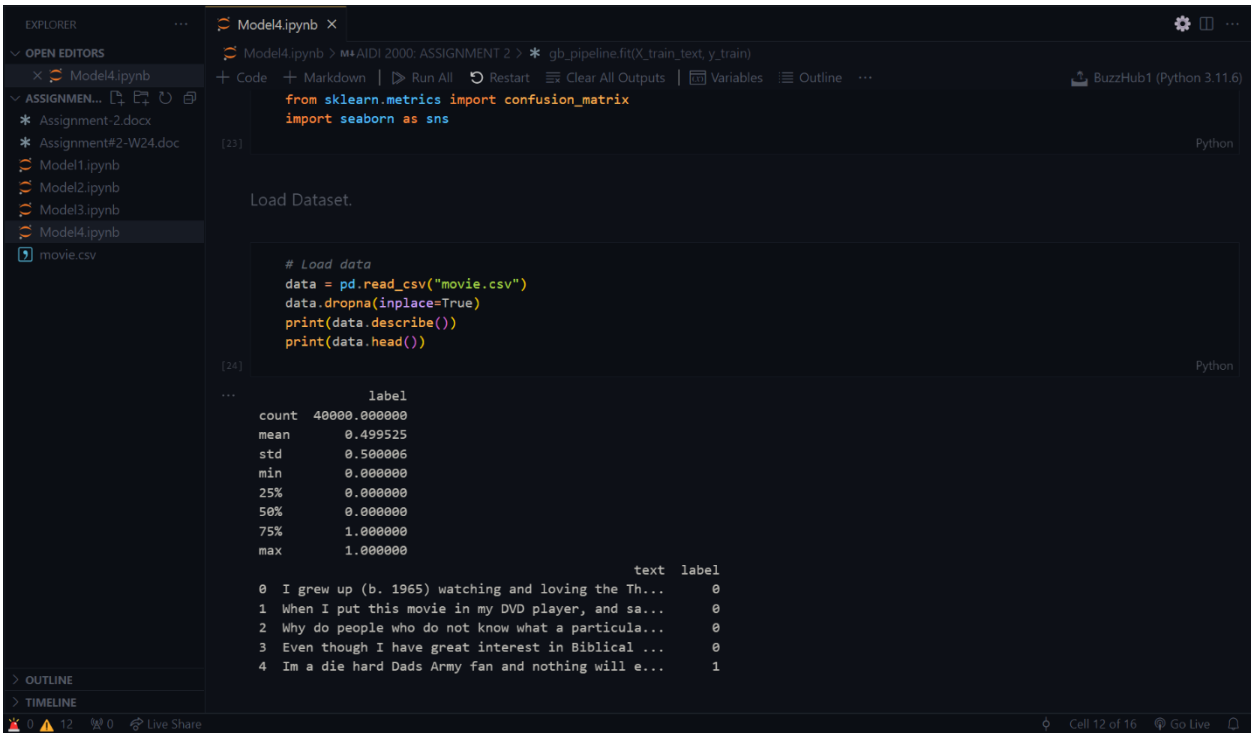


Model 4: Ensemble Learning.

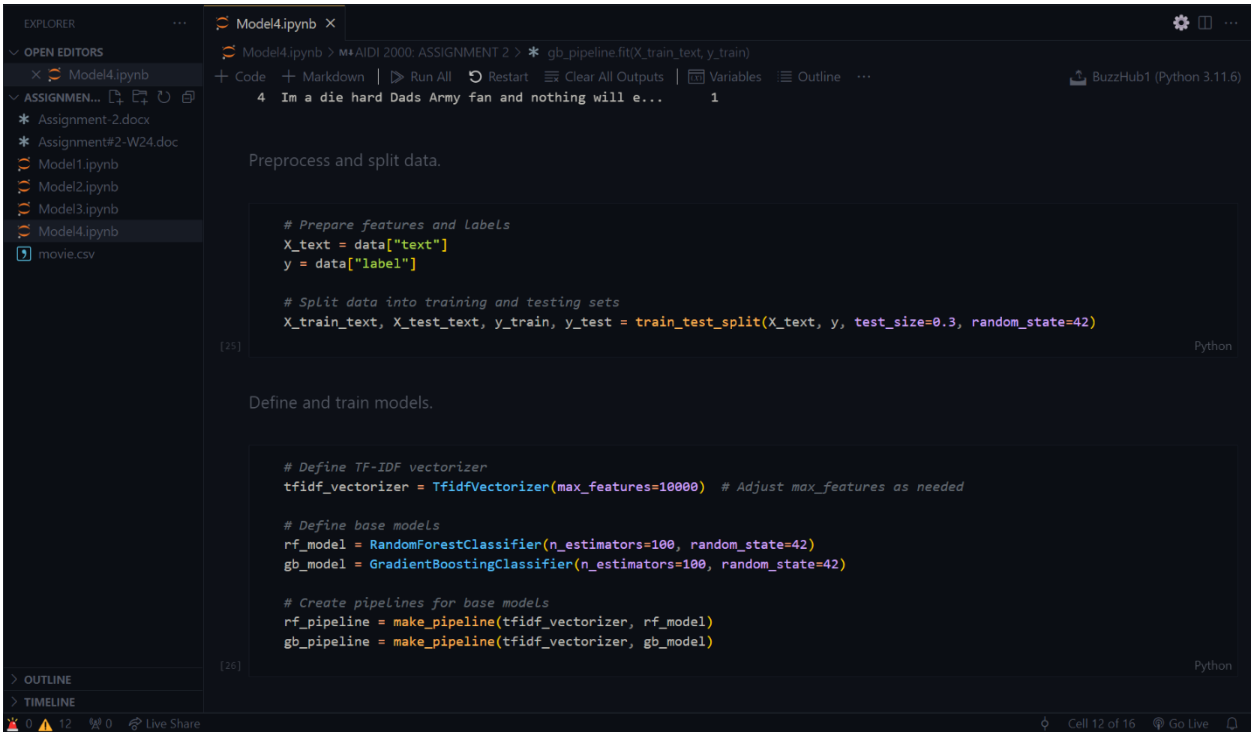
Load the Necessary Libraries.

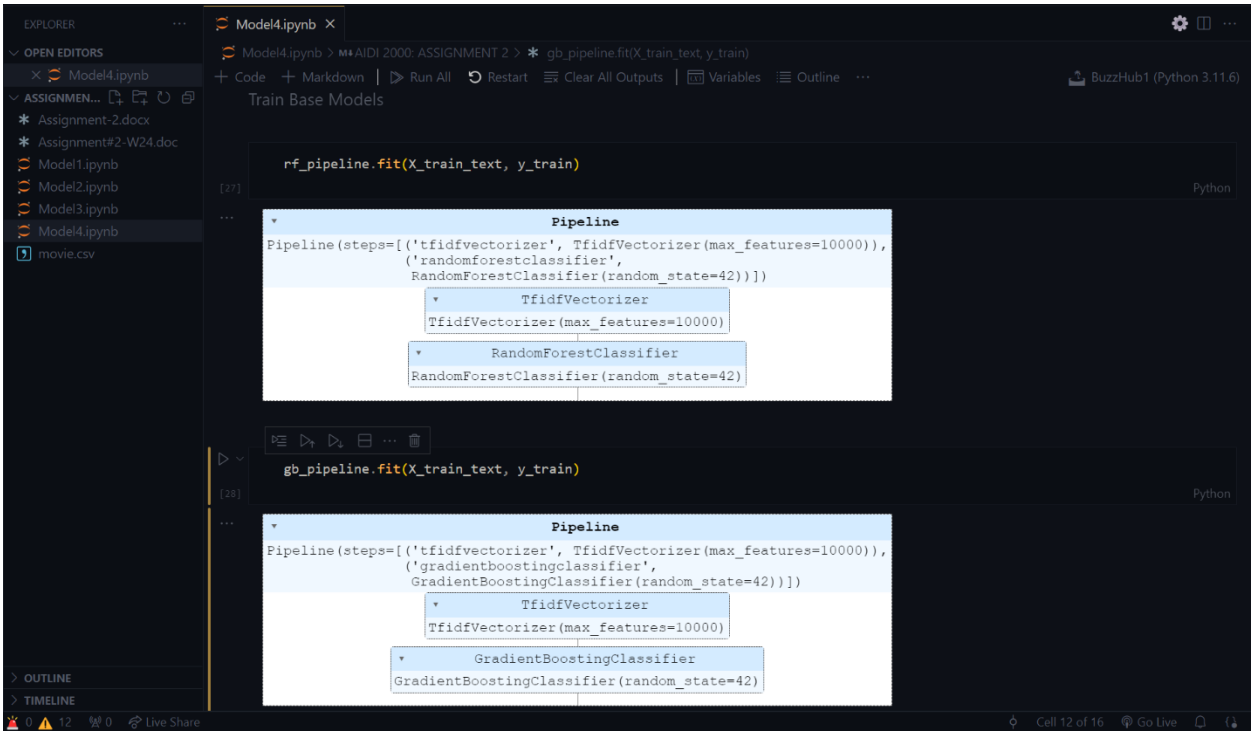


Load dataset.

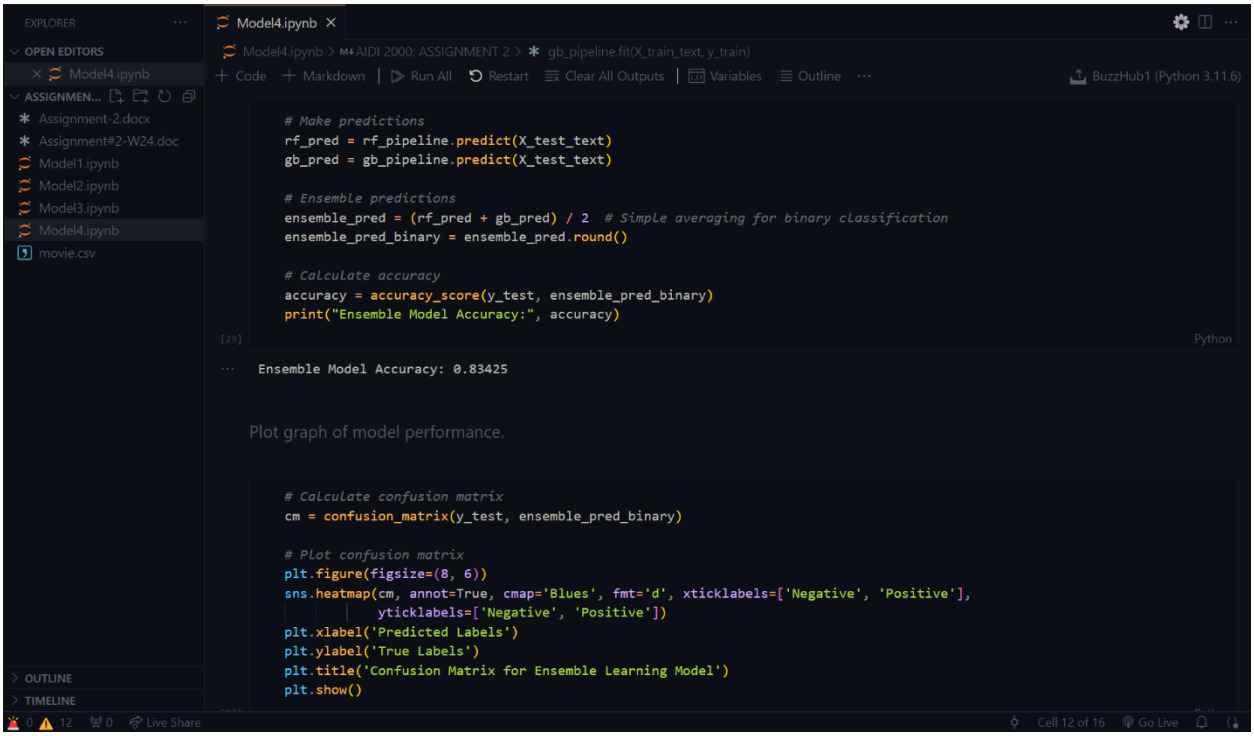


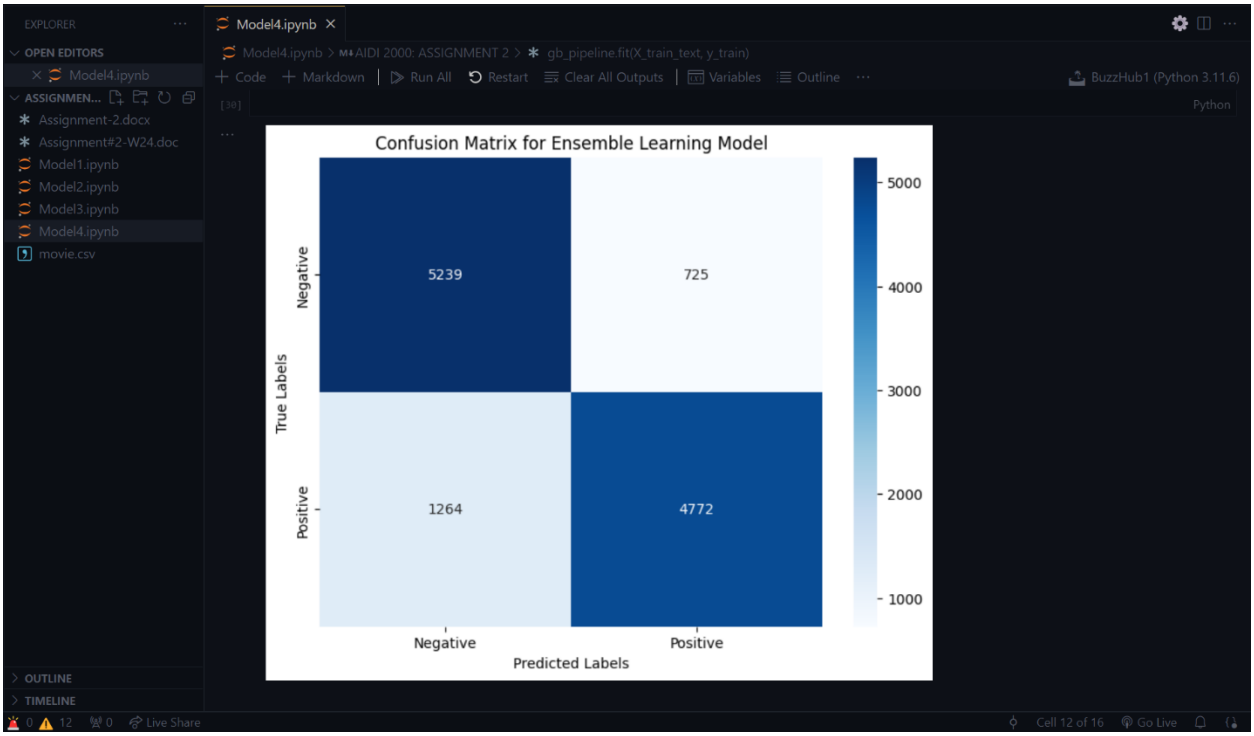
Preprocess data, split data, define base models and train models.





Make predictions and evaluate model performance.





OUR RECOMMENDATION:

Based on our evaluation of all four models, we found Model 3 (Logistic Regression) to be the most successful in making predictions about the dataset.