ADABOOST REGRESSION

This code uses **AdaBoost Regression** to predict the product length for the given data. Here's how it works step-by-step:

- The necessary libraries are imported - pandas for loading and manipulating data, AdaBoostRegressor for training the AdaBoost Regression model, and mean_absolute_percentage_error for evaluating the model's performance.
- The data is loaded using pandas from the CSV files for the train and test sets.
- The train and test data are combined into one dataframe for ease of preprocessing and feature engineering.
- Any missing values are replaced with 0.The feature used for prediction, PRODUCT_TYPE_ID, is selected for both the train and test sets.The target variable, PRODUCT_LENGTH, is selected for both the train and test sets.
- The AdaBoost Regression model is initialized and trained using the training data.The model is used to predict the product length for the test set.
- The mean absolute percentage error between the true and predicted product lengths is calculated and converted to a score.
- The score is printed to the console.A submission file is created in CSV format containing the predicted product length for each product ID in the test set.

Overall, this code follows a similar process to the other regression models shown, with the main difference being the use of AdaBoost Regression rather than Linear Regression, ElasticNet Regression, Bayesian Ridge Regression, or Extra Trees Regression.