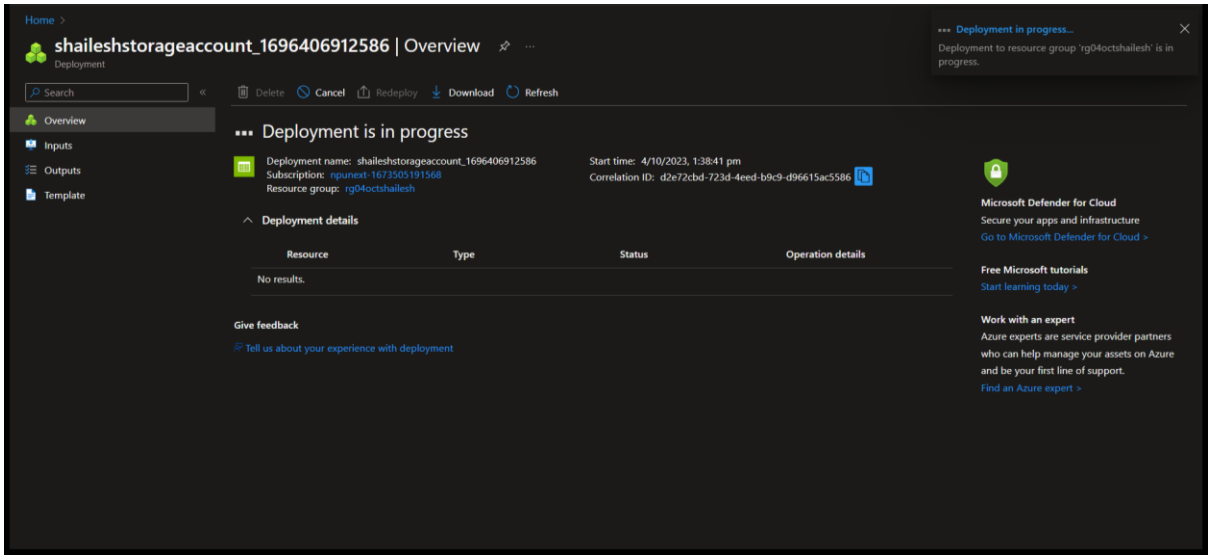
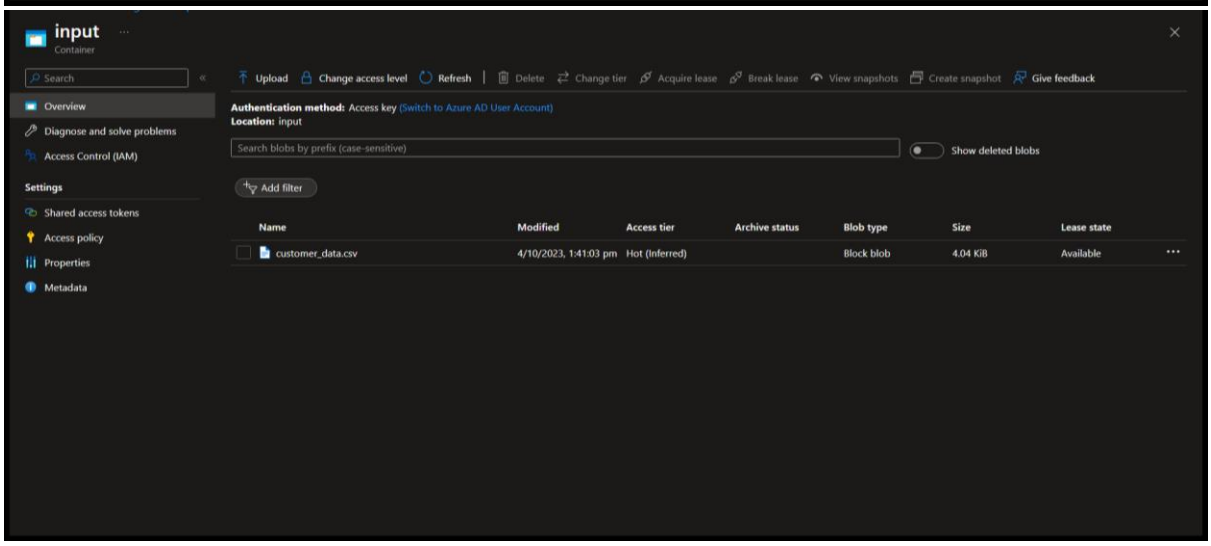
Hands on Machine Learning

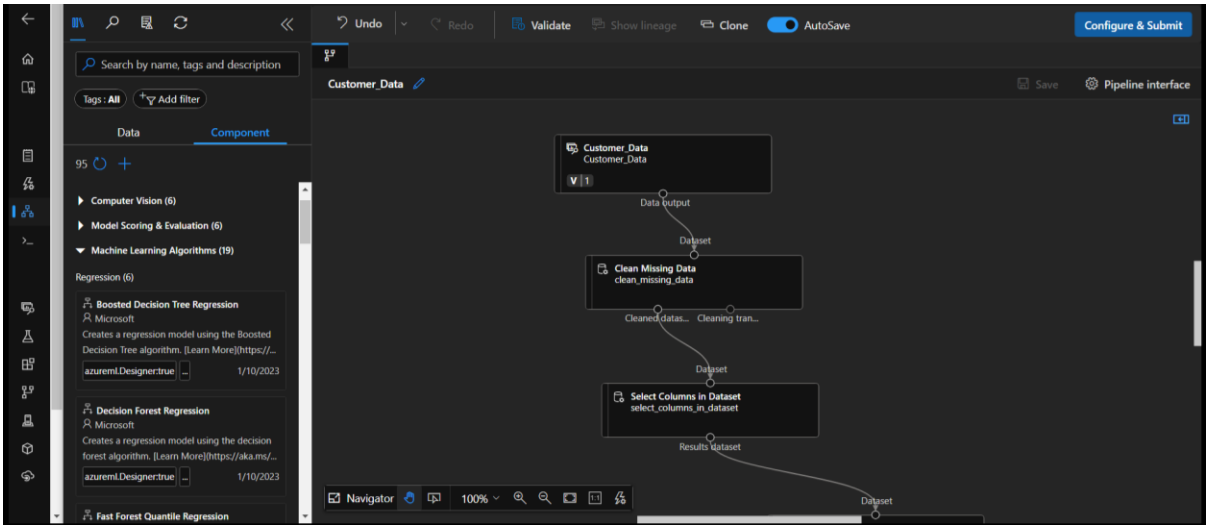
Data Preparation:

1. Create Storage Account and load the data into it.



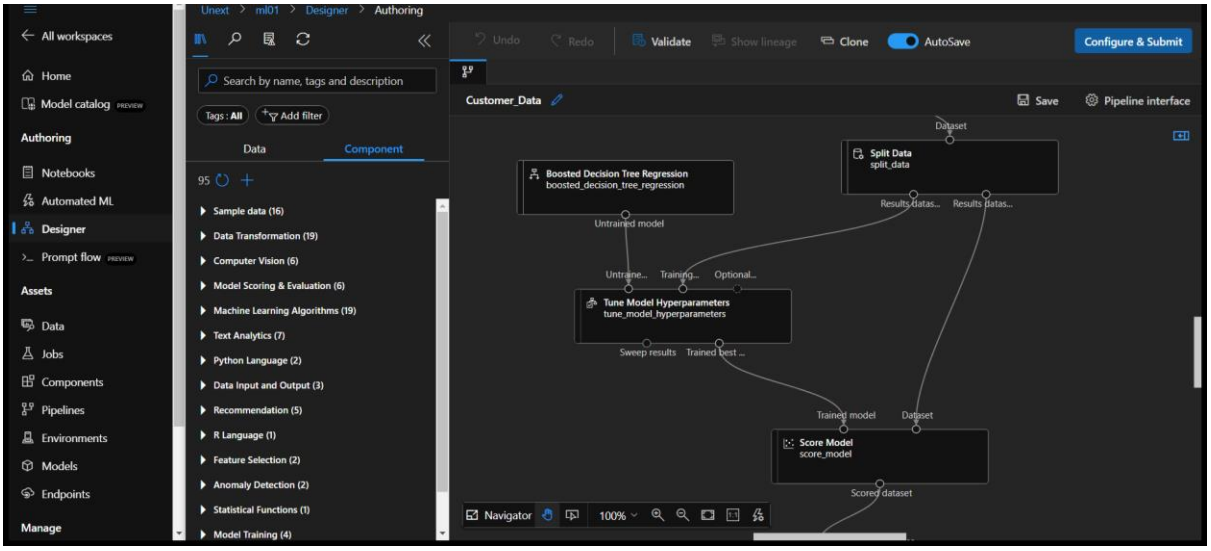


2. Data cleaning, feature selection, and feature engineering: Clean Missing Data, Select columns in Dataset

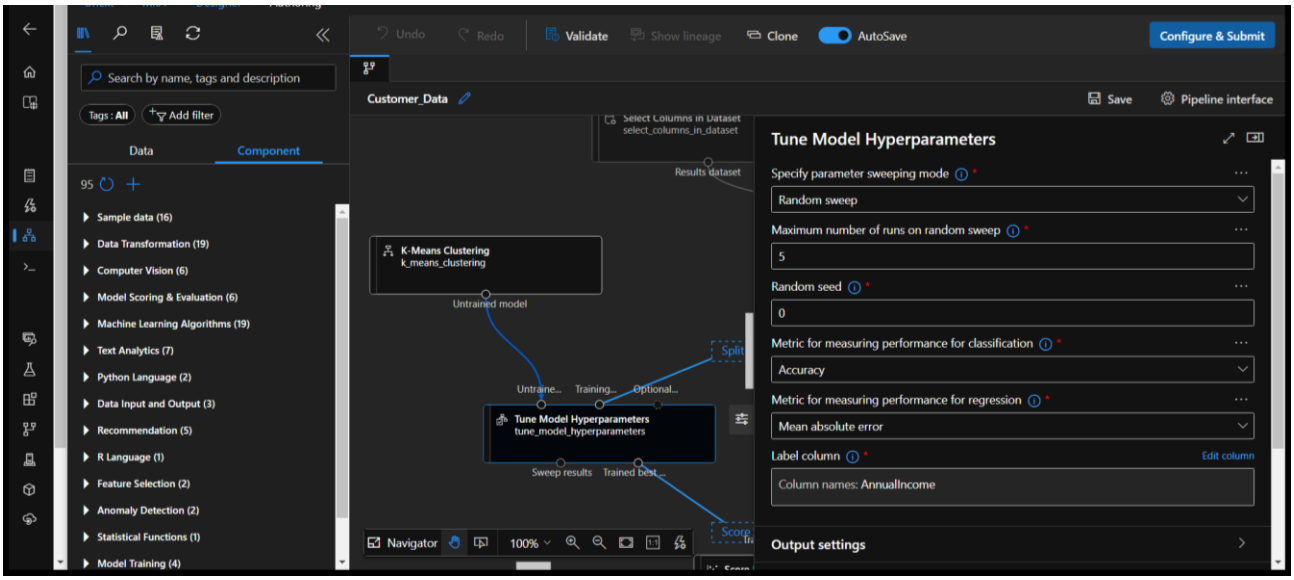


Model Development:

Model Used –**Boosted Decision Tree Regression**



Hyperparameter Tuning:



Assessment Questions:

1. What are the key steps involved in preparing the dataset for training a machine learning model using Azure Machine Learning? Briefly explain each step.

Ans –

- **Problem formulation.**

- **Data collection and discovery.**
- **Data exploration.**
- **Data cleansing and validation.**
- **Data structuring.**
- **Feature engineering and selection.**

2. Why is it important to split the dataset into training and testing sets when developing a machine learning model? How does this help in model evaluation?

Ans –

3. Describe a machine learning algorithm suitable for predicting customer purchasing behaviour in the given scenario. Explain why you chose this algorithm.

Ans - LSTM is a machine learning algorithm that can learn from sequential data and predict customer purchasing behaviour in the given scenario. It is chosen because it can handle various types of data, cope with noise and uncertainty.

4. What is hyperparameter tuning, and why is it important in machine learning? Explain a technique used for hyperparameter tuning and its benefits.

Ans - Hyperparameter tuning is a technique where we adjust the parameters of a machine learning model to improve its performance and accuracy. Hyperparameters are the settings that control how the model learns from the data, such as the learning rate, the number of hidden layers, the regularization strength, etc. Hyperparameters are different from the model parameters, which are the weights and biases that are learned during the training process.