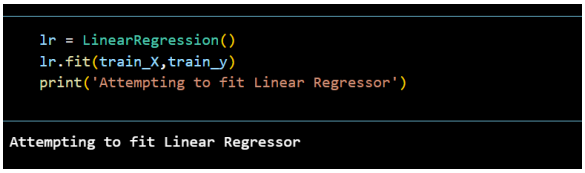
| Model | Tuned Hyperparameters | Optimal Values |
|---|---|---|
| Linear regression | ----- |  |

| | | |
|---|---|---|
| Random Forest | ------ |  |

# Model Optimization and Tuning Phase Report

| | |
|---|---|
| Date | 20 June 2024 |
| Team ID | 740114 |
| Project Title | Customer Acquisition Cost Estimation Using ML |
| Maximum Marks | 10 Marks |

**Model Optimization and Tuning Phase**

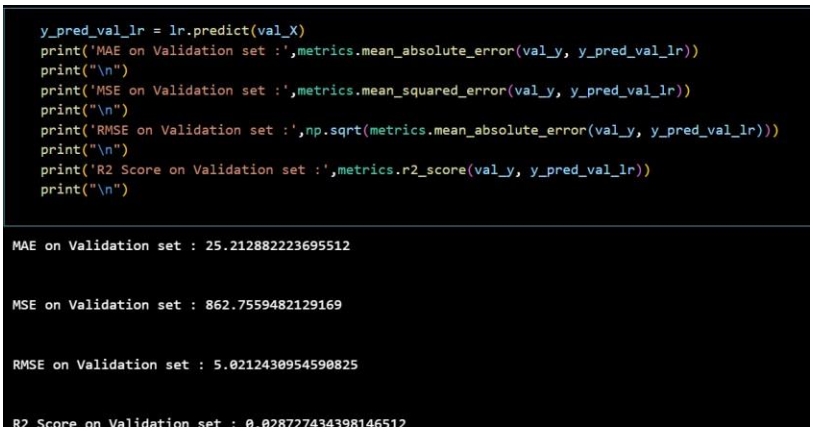
In the model optimization and tuning phase for customer acquisition cost estimation using machine learning, split the data, select key hyperparameters (e.g., `estimators`, `max_depth`), and use `Randomized SearchCV` or `GridSearchCV` to identify optimal values. Evaluate performance usingmetrics like Mean Absolute Error (MAE) or Mean Squared Error (MSE).

**Hyperparameter Tuning Documentation (6 Marks):**

| | | |
|---|---|---|
| | | |

**Performance Metrics Comparison Report (2 Marks):**

| Model | Optimized Metric |
|---|---|
| | |

| | |
|---|---|
| Random Forest |  |
| Linear Regressor |  |

**Final Model Selection Justification (2 Marks):**

| Final Model | Reasoning |
|---|---|
| Random Forest Model | The Random Forest model was selected for its superior performance, exhibiting high accuracy. Its ability to handle complex relationships, minimize overfitting, and optimize predictive accuracy aligns with project objectives, justifying its selection as the final model. |