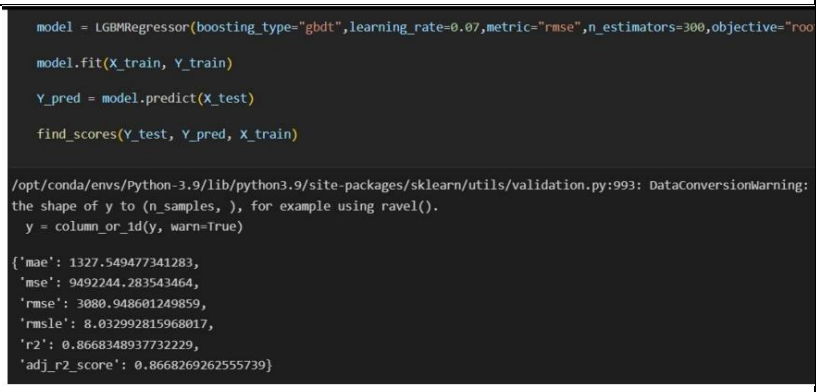
Model Performance Testing:

Project team shall fill the following information in model performance testing

	values	Screenshot
1	**Regression Model**: LGBM Regressor MAE: 1327.56 MSE: 9492244.25 RMSE: 3080.93 RMSLE: 8.05 R2 Score: 0.8664 Adjusted R2 Score:	
2	**Hyperparameter Tuning** 1) Learning Rate: [0.01, 0.03, 0.05, 0.07] 2) **Boosting Type**: ['gbdt','dart','goss','rf'] 3) **Number of Estimators:** [100,200,300] Validation Method: Grid Search Cross Validation Best Parameters: Learning Rate – 0.07 Boosting Type – 'gbdt' Number of Estimators - 30	

```
model = LGBMRegressor(boosting_type="gbdt",learning_rate=0.07,metric="rmse",n_estimators=300,objective="roo

model.fit(X_train, Y_train)

Y_pred = model.predict(X_test)

find_scores(Y_test, Y_pred, X_train)
```

```
/opt/conda/envs/Python-3.9/lib/python3.9/site-packages/sklearn/utils/validation.py:993: DataConversionWarning:
the shape of y to (n_samples, ), for example using ravel().
  y = column_or_1d(y, warn=True)

{'mae': 1327.549477341283,
 'mse': 9492244.283543464,
 'rmse': 3080.948601249859,
 'rmsle': 8.032992815968017,
 'r2': 0.8668348937732229,
 'adj_r2_score': 0.866826926255739}
```

```
lgbm_configs = {
    "name":'LGBMRegressor',
    "method": "grid",
    "metric": {
        "name": "adj_r2",
        "goal": "maximize"
    },
    "parameters": {
        "learning_rate": {
            "values": [0.01, 0.03, 0.05, 0.07]
        },
        "objective": {
            "values": ['root_mean_squared_error']
        },
        "boosting_type": {
            "values": ['gbdt','dart','goss','rf']
        },
        "reg_sqrt": {
            "values": [True]
        },
        "metric": {
            "values": ['rmse']
        },
        "n_estimators": {
            "values": [100,200,300]
        },
        "random_state": {
            "values": [42]
        }
    }
}
```