



Ahmedabad
University

CSE523 Machine Learning

Weekly Project Report

Date: 11-03-2023

Project title: Big Mart Sales Prediction

Group 10

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1. Task performed and outcomes of task performed this week

- We implemented the linear regression and XGBoost models.
- We computed the accuracy of the models and compared the results.

```
[ ] # linear regression model performance on training set
print('R Squared value = ', r2_train_lr)
print("Mean Absolute Error = ", MAE_train_lr)
print("Mean Squared Error = ", MSE_train_lr)
```

```
R Squared value = 0.5140207882509149
Mean Absolute Error = 885.5946330661519
Mean Squared Error = 1393316.2830848258
```

```
[ ] # linear regression model performance on test set
print('R Squared value = ', r2_test_lr)
print("Mean Absolute Error = ", MAE_test_lr)
print("Mean Squared Error = ", MSE_test_lr)
```

```
R Squared value = 0.49469407947463184
Mean Absolute Error = 938.9868446721072
Mean Squared Error = 1559917.1283020955
```

```
[ ] # XGBoost regression model performance on training set
print('R Squared value = ', r2_train_XGB)
print("Mean Absolute Error = ", MAE_train_XGB)
print("Mean Squared Error = ", MSE_train_XGB)
```

```
R Squared value = 0.8608098159925566
Mean Absolute Error = 454.9417998327128
Mean Squared Error = 399062.23380450817
```

```
[ ] # XGBoost regression model performance on test set
print('R Squared value = ', r2_test_XGB)
print("Mean Absolute Error = ", MAE_test_XGB)
print("Mean Squared Error = ", MSE_test_XGB)
```

```
R Squared value = 0.5369192031068373
Mean Absolute Error = 836.6426653600018
Mean Squared Error = 1429565.0169908563
```

- The linear regression gave accuracy of 0.51 on training set and 0.49 on test set which is very less compared to the accuracy of XGBoost of 0.86 on training set and 0.54 on test set.
- From the accuracy of XGboost on the training and test sets, it can be concluded that the model overfits the data and we need to do hyperparameter tuning to avoid such problems.

2. Tasks to be performed in the upcoming week

- We will perform hyperparameter tuning to improve our models' accuracy.