Report of Findings

Data:

KNN

Accuracy: 0.96125

Precision: 0.8688524590163934

Recall: 0.6973684210526315

F1 Score: 0.7737226277372262

[[716 8]

[ 23 53]]

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**Tree**

**Accuracy: 0.9875**

**Precision: 0.9342105263157895**

**Recall: 0.9342105263157895**

**F1 Score: 0.9342105263157895**

**[[719 5]**

**[ 5 71]]**

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GNB

Accuracy: 0.88125

Precision: 0.4214876033057851

Recall: 0.6710526315789473

F1 Score: 0.5177664974619289

[[654 70]

[ 25 51]]

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MNB

Accuracy: 0.92125

Precision: 0.6

Recall: 0.5131578947368421

F1 Score: 0.5531914893617021

[[698 26]

[ 37 39]]

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Results:

Tree is the best model. It captured the highest true positive and true negative rates. It had very good accuracy, precision, recall and F1 score. In this case, due to an imbalanced data set, the highest F1 score is the most important measure to depict the performance of the machine learning model.

Profit Analysis:

From the validation set, if the bank sends to the first/top 74 customers, they will reach the ideal profit of $46,566