**Capstone Project Submission**

**Instructions:**

i) Please fill in all the required information.

ii) Avoid grammatical errors.

| **Team Member’s Name, Email and Contribution:** |
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| Manmohan Madhu - [mmanmohan1992@gmail.com](mailto:mmanmohan1992@gmail.com) |
| **Please paste the GitHub Repo link.** |
| Github Link:- <https://github.com/manm0han/bank_marketing_effectiveness> |
| **Please write a short summary of your Capstone project and its components. Describe the problem statement, your approaches and your conclusions. (200-400 words)** |
| **The aim of this project is to use a supervised machine learning model to predict the effectiveness of a Bank marketing campaign. The dataset used for this project belongs to a Portuguese banking institution’s call marketing campaign.**  **After handling the null values and taking care of outliers, the entire dataset was split into two sets, train and test, by a 70:30 ratio. Two modeling libraries were used to train the dataset, XGBoost and Random Forest Classifier. Grid search CV was used to optimize the roc\_auc score for the Random Forest Classifier. Since for this business problem a false positive and false negative does not have a major impact, we can focus on accuracy as the evaluation metric to consider. In addition to this we also consider the ROC\_AUC score to test our models’ classification capabilities.**  **XGBoost : Accuracy 90.6% ROC\_AUC 71.66%.**  **Random Forest Classifier: Accuracy 89.53% ROC\_AUC 90.88%.**  **With an accuracy of 89.5 percent and an roc\_auc score of 90.88 percent we can confidently use this model to predict whether the customer will subscribe or not even before the call is made. This will save time and resources as we have to only call the customers who are more likely to subscribe thereby reducing the workload of the marketing team.** |