Direct Marketing Campaigns of Portuguese Banking Clients

**DSC 423 Project Proposal**

**Team members**

**Problem Description - Todd**

Highlights of ideas, methods and data description here.

**Methodology – Keerthi & Morgan**

1. Define Problem Statement and Import Data

a. Import Dataset:

1. Data Cleaning & Exploratory Data Analysis
   1. Randomly select a subset of 600 to 3,000 records from our dataset to analyze.
   2. Deal with null values by either removing or inserting mean or median value, depending on feature.
   3. Removing duplicate values.
   4. Checking Values for Categorical attributes & Numerical Values
      1. Exploring Categorical Values
      2. Exploring Numerical Values
      3. Correlation Matrix
   5. Encoding Categorical values to numerical codes.
   6. Dropping less meaningful columns
   7. Removing Outliers
   8. Exploratory Data Analysis
   9. Creating Dummy Variables and splitting data in Training and Testing set
2. Data Modeling & Evaluation
   1. 3.1.1 Define Model data including dummy variable, X, Y, Training, Test Dataset
   2. 3.2 Function to build and asses the model which can be used generally for all the

Classification model

* 1. 3.3 Building Model
     1. 3.3.1 Logistic Regression
     2. 3.3.4 Decision trees
     3. 3.3.5 Random Forest
  2. 3.4 Model Evaluation
     1. ROC Curve for all models
     2. Confusion matrix

1. Exporting Final Cleaned data, Training data, testing data and Prediction generated by the model on Testing Data
2. CONCLUSION (INSIGHTS):
3. Appendix/Reference

**Data Schema and Size – Crystal**

**Plan Work Distribution Timeline – Roshen**

Wednesday, May 5th Proposal meeting

Saturday, May 8th Submit rough draft of proposal

Sunday, May 9th 5:15pm Follow up

Monday, May 10th Submit final draft of proposal

Monday, May 17th Data cleaned & explored

Monday, May 24th Analysis; Begin writing report; Begin looking for research references

Monday, May 31st Finish rough draft of report; Add each person’s research reference; Begin writing future work;

Monday, June 7th Submit all deliverables & team evaluations