Capstone Project Submission

Instructions:
i) Please fill in all the required information.
ii) Avoid grammatical errors.

Team Member's Name, Email and Contribution:

Contribution role:

1. **Minal kharbade (kharbademeenal@gmail.com)**
   a. Data Cleaning
   b. Data Description
   c. Perform EDA(Exploratory Data Analysis)

2. **Deveshya Gupta (deveshyagupta9454@gmail.com)**
   a. General Analysis
   b. Model Implementation
      1. Logistic Regression
      2. XG boost
      3. Decision Tree
      4. KNN

Please paste the GitHub Repo link.

Github Link:-
https://github.com/DEVESHYA3/Bank-Marketing-Effectiveness-.git

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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 data is related with direct marketing campaigns (phone calls) of Portuguese banking institution. The marketing campaigns were based on phone calls .Often, more than one contact to the same client was required, in order to access if the product(bank term deposit) would be ('yes') or not('no')

- age (numeric)

- job : type of job (categorical: 'admin.','blue-collar','entrepreneur','housemaid','management','retired','self-employed','services','student','technician','unemployed','unknown')

- marital : marital status (categorical: 'divorced' ,'married', 'single', 'unknown'; note: 'divorced' means divorced or widowed)

- education (categorical: 'basic.4y','basic.6y','basic.9y','high.school','illiterate','professional.course','university.degree','unknown')

- default: has credit in default? (categorical: 'no' ,'yes', 'unknown')

- housing: has housing loan? (categorical: 'no', 'yes', 'unknown')

- loan: has personal loan? (categorical: 'no', 'yes', 'unknown')

The classification goal is to predict if the client will subscribe a term deposit(variable y).

Bank Marketing effectiveness prediction involves various steps such as below:

- Loading the data into frame
- Data Description
- Exploratory Analysis and Visualizations
- Model Implementation
- Decision Tree
- XG-boost
- KNN
- Conclusion

Throughout the project we learned many new things from the problem statement to understand the technical side of data analysis. We deal with Portugal Banking Institution data

CONCLUSION: Comparing to all algorithms XG-boost algorithm has the best accuracy score and ROC-AUC score.it is concluded from analysis. The model help us to classify the customers on the basis on which they deposit or not.

Drive link:
https://drive.google.com/drive/folders/121cgerVp7ZsmxHxO4I26FsQtqv-LbA6Z?usp=sharing