**Telemarketing**

**PROBLEM STATEMENT:**

* Enable the telemarketing team to prioritize targeting for term loan marketing program.
* Adopt a data driven approach based on the data been provided for analysis.
* Identify risk factors.
* Plot graphical analysis for the feature engineering tasks and deploy machine learning models for predicting profit groups and risk factors.

**DATA Link:** [**http://archive.ics.uci.edu/ml/datasets/Bank+Marketing**](http://archive.ics.uci.edu/ml/datasets/Bank+Marketing)

**DATA Description:**

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| --- | --- |
| **Variable** | **Description** |
| Age | Age of Customer |
| 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") |
| education | (categorical: “basic.4y”, “basic.6y”, “basic.9y”, “high.school”, “illiterate”, “professional.course”, “university.degree”, “unknown”) |
| default | default: has credit in default? (categorical: “no”, “yes”, “unknown”) |
| housing | housing: has housing loan? (categorical: “no”, “yes”, “unknown”) |
| loan | loan: has personal loan? (categorical: “no”, “yes”, “unknown”) |
| contact | contact: contact communication type (categorical: “cellular”, “telephone”) |
| month | month: last contact month of year (categorical: “jan”, “feb”, “mar”, …, “nov”, “dec”) |
| day\_of\_week | day\_of\_week: last contact day of the week (categorical: “mon”, “tue”, “wed”, “thu”, “fri”) |
| duration | duration: last contact duration, in  seconds (numeric). |
| campaign | campaign: number of contacts performed during this campaign and for this client (numeric, includes last contact) |
| pdays | pdays: number of days that passed by after the client was last contacted from a previous campaign (numeric; 999 means client was not previously contacted) |
| previous | previous: number of contacts performed before this campaign and for this client (numeric) |
| poutcome | poutcome: outcome of the previous marketing campaign (categorical: “failure”, “nonexistent”,“success”) |
| emp.var.rate | emp.var.rate: employment variation rate — (numeric) |
| cons.price.idx | cons.price.idx: consumer price index — (numeric) |
| cons.conf.idx | cons.conf.idx: consumer confidence index — (numeric) |
| euribor3m | euribor3m: euribor 3 month rate — (numeric) |
| nr.employed | nr.employed: number of employees — (numeric) |
| y | target variable - has the client subscribed to term deposit (1/0) |

**DEPLOYED MODELS:**

* Random forest
* Decision Tree
* Logistic Regression
* Auc\_roc curve for precision