

Assignment :

The data is related to direct marketing campaigns of a 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 assess if the product (bank term deposit) would be ('yes') or not ('no') subscribed (Col -21).

Attribute Information:

Input variables:

bank client data:

1 - age (numeric)

2 - job : type of job (categorical:

'admin.', 'blue-collar', 'entrepreneur', 'housemaid', 'management', 'retired', 'self-employed', 'services', 'student', 'technician', 'unemployed', 'unknown')

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

4 - education (categorical:

'basic.4y', 'basic.6y', 'basic.9y', 'high.school', 'illiterate', 'professional.course', 'university.degree', 'unknown')

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

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

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

related with the last contact of the current campaign:

8 - contact: contact communication type (categorical: 'cellular', 'telephone')

9 - month: last contact month of year (categorical: 'jan', 'feb', 'mar', ..., 'nov', 'dec')

10 - day_of_week: last contact day of the week (categorical: 'mon', 'tue', 'wed', 'thu', 'fri')

11 - duration: last contact duration, in seconds (numeric). Important note: this attribute highly affects the output target (e.g., if duration=0 then y='no'). Yet, the duration is not known before a call is performed. Also, after the end of the call y is obviously known. Thus, this input should only be included for benchmark purposes and should be discarded if the intention is to have a realistic predictive model.

other attributes:

12 - campaign: number of contacts performed during this campaign and for this client (numeric, includes last contact)

13 - 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)

14 - previous: number of contacts performed before this campaign and for this client (numeric)

15 - poutcome: outcome of the previous marketing campaign (categorical: 'failure','nonexistent','success')

social and economic context attributes

16 - emp.var.rate: employment variation rate - quarterly indicator (numeric)

17 - cons.price.idx: consumer price index - monthly indicator (numeric)

18 - cons.conf.idx: consumer confidence index - monthly indicator (numeric)

19 - euribor3m: euribor 3 month rate - daily indicator (numeric)

20 - nr.employed: number of employees - quarterly indicator (numeric)

21- Has the client subscribed to a term deposit? (binary: 'yes','no') – Target Variable

Please perform the below steps in a Google Colab or Jupyter Notebook as per your

convenience:

We will create a model with the following steps:

- Import the relevant packages
- Download and explore the dataset
- Prepare the dataset for training
- Use any prediction algorithm based upon the EDA
- Train the model to fit the data
- Make predictions using the trained model
- Create a test case and generate a predicted result from the system

Please send the assignment to “projects.tcrinnovation@gmail.com”

Assignment Deadline: 20th July, 2022