Assignment - Acquisition Analytics

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Objective

- Achieve 80% of total responders at the minimum possible cost

Problem Statement

- Predict the probability of response and target most likely respondents in the telemarketing campaign without “duration” variable being considered while building model

Approach

- EDA, data preparation and model building
- Assumed call cost to be 1Rs per min
- A unique ID is given to each prospect for better understanding and analysis of data

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Steps followed

- Model Building –Logistic Regression Model, without using “duration” variable
- Logistic Regression with all variables, PFE and PCA
  - LR with PCA gives the best model
- Identifying the top X% prospect customers that needs to contacted to achieve business objective
- Creating a Lift and Decile Chart
- Identifying the Cost of Acquisition
- Since our objective is to identify True positive rate, we need to mainly focus on “Sensitivity”

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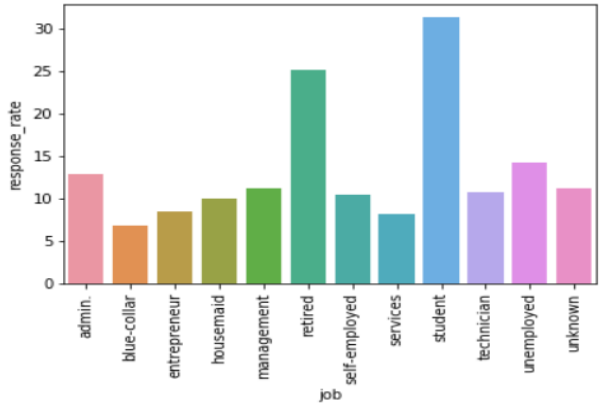
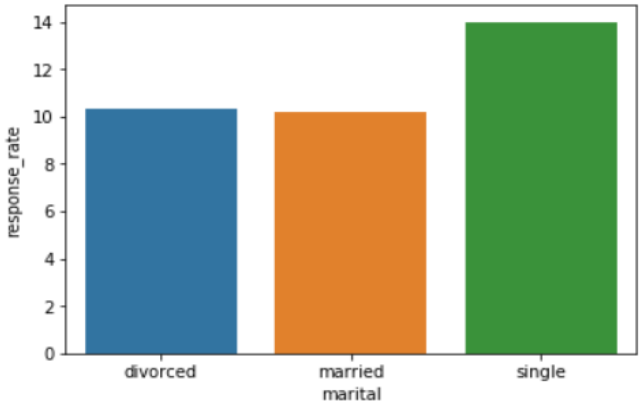
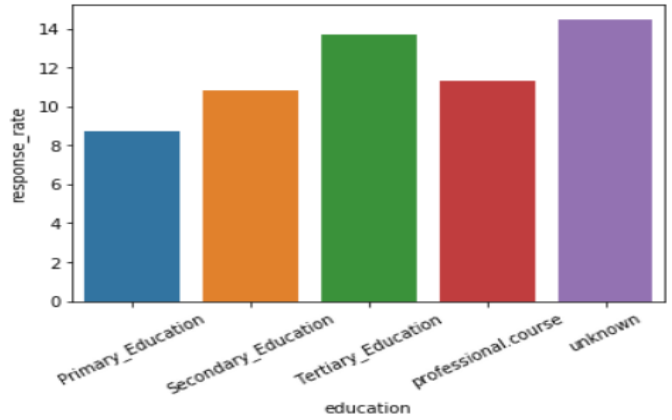
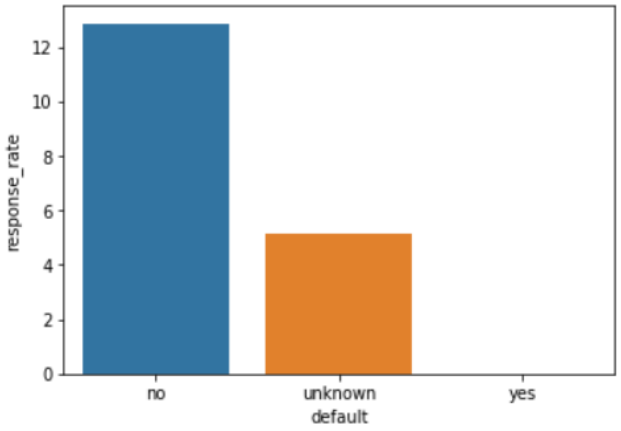
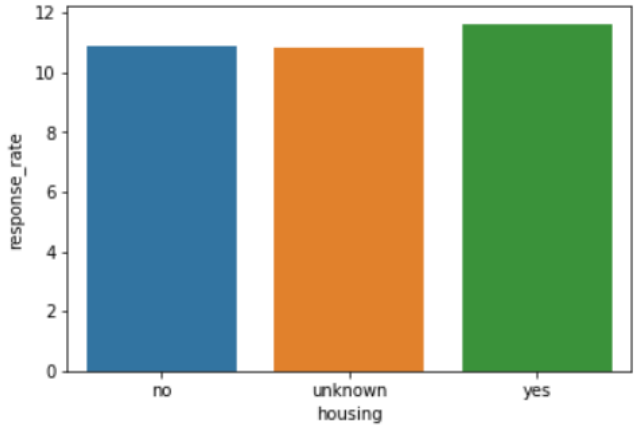
Relationship of different variable with Response

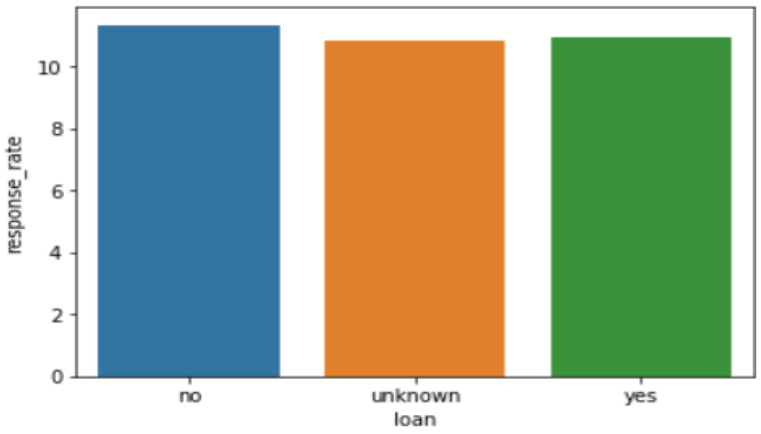












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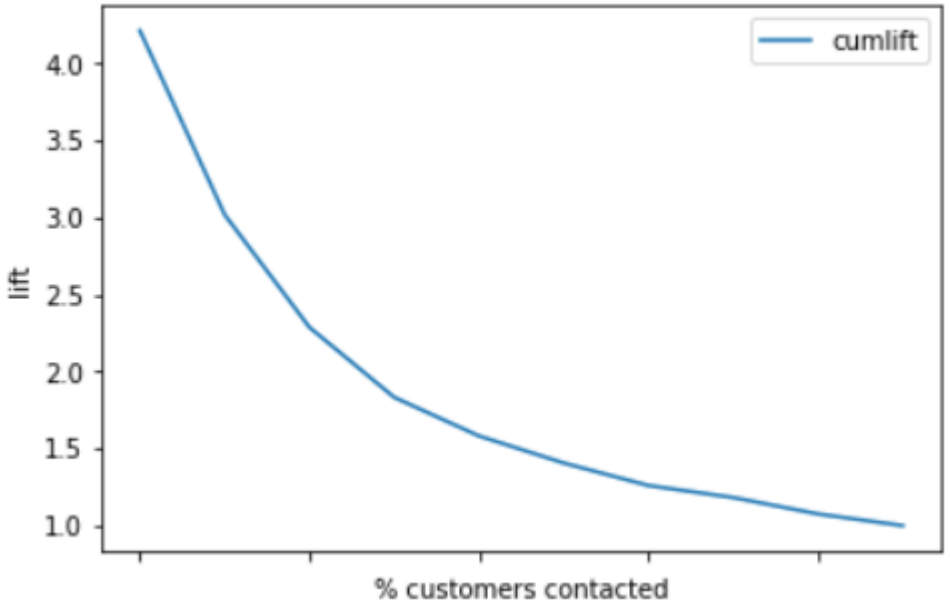
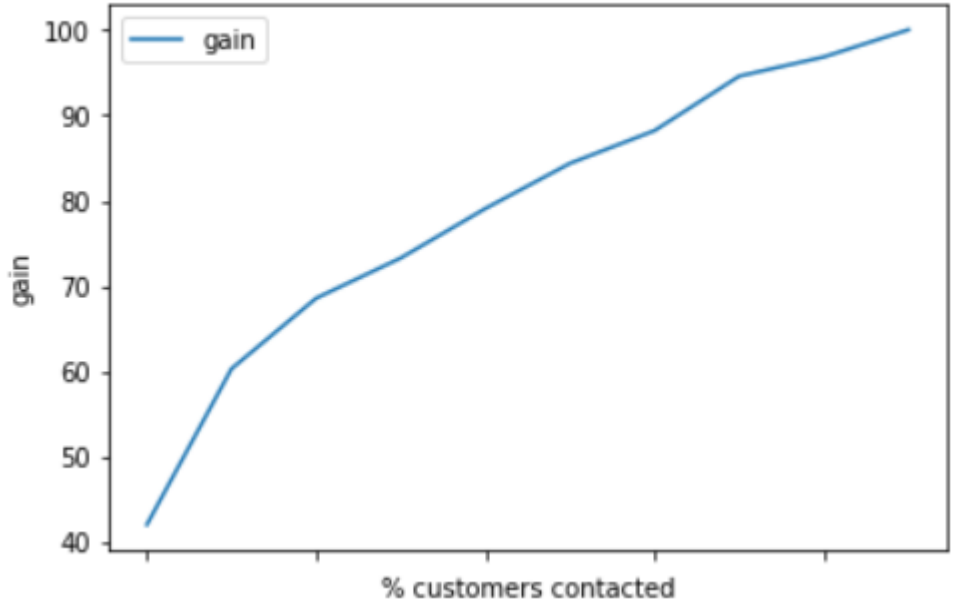
Model Performance – Lift Charts





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Cost of Acquisition for 80% response rate

- Cost to be considered = 1*number of contacts made in the current campaign
- Cost= 1* (50% of 41,188) = Rs 20,594/-
- To acquire 80% base we need to contact 50% people

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Results

- To achieve our objective of acquiring 80% of total responders at the minimum possible cost; we will need to target 50% people from entire data set.

- Variable to watch out during acquisitions are:

job_retired
month_mar
poutcome_success
job_student
month_may
cons.price.idx
contact_telephone
previous_Nevercontacted
euribor3m

- With model we have achieved 50% efficiency. Instead of calling the entire set of people we just weed need to call 50% people thereby saving money that would otherwise be wasted by calling rest 50% data.