# Homework Assignment 3 – Decision Tree

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## BACKGROUND

The data is related to direct marketing campaigns of a European banking institution. The marketing campaigns were based on phone calls. The data captures customers' attributes for the purpose to predict whether they will deposit their money in the bank or not,

The data set was converted to values as described in the next section

## ATTRIBUTE INFORMATION

- **age:** The customer's age
    - 1: 18-25
    - 2: 26-35
      3: 36-45
    - 4: 46-55
    - 5: 56-65
    - 6: 66-75
    - 7: Above 75
- **job:** The customer's type of job:
    - 1: blue-collar
    - 2: services
    - 3: admin.
    - 4: entrepreneur
    - 5: self-employed
    - 6: technician
    - 7: management
    - 8: student
    - 9: retired
    - 10: housemaid
    - 11: unemployed
- **martial:** The customer's marital status
    - 1: married
    - 2: single
    - 3: divorced

- **education**: The customer's level of education
    - 1: illiterate
    - 2: basic.4y
    - 3: basic.6y
    - 4: basic.9y
    - 5: high.school
    - 6: professional.course
    - 7: university.degree
- **default:** does the customer have credit in default?
    - 1: Yes
    - 0: No
- **housing:** does the customer have a housing loan?
    - 1: Yes
    - 0: No
- **loan:** does the customer have a personal loan?
    - 1: Yes
    - 0: No
- **contact:** type of the communication used to reach the customer.
    - 1: Cellular
    - 2: Telephone
- **season:** The season in which the customers was reached by the campaign.
    - 1: Winter
    - 2: Spring
    - 3: Summer
    - 4: Autumn
- **week_part:** the part of the week in which the customer was reached by the campaign.
    - 1: Beginning of the week
    - 2: End of the week
- **campaign:** number of contacts that were made to the customer during the campaign.
    - 1: Less than or equal to 10
    - 2: 11-20
    - 3: 21-30
    - 4: Above 30
- **deposit**: the customer's willingness to deposit the money in the bank.
    - 1: Will Deposit
    - 0: Will Not Deposit
- **train:** Does the customer's record belongs to the train set.
    - 1: Train
    - 0: Test

## REFERENCES

Moro, S., Cortez, P., & Rita, P. (2014). A data-driven approach to predict the success of bank telemarketing. *Decision Support Systems*, *62*, 22-31.

Moro, S., Laureano, R., & Cortez, P. (2011). Using data mining for bank direct marketing: An application of the crisp-dm methodology.

# Good Luck!