**Dataset Description**

|  |
| --- |
| Subscribed |
| Yes |
| No |

**Target**

|  |
| --- |
| Numeric Variable |
| Age |
| Duration |
| Campaign |
| Pdays |
| Previous |
| emp.var.rate |
| cons.price.idx |
| cons.conf.idx |
| euribor3m |
| nr.employed |

|  |
| --- |
| Categorical Variable |
| Job |
| Marital |
| Education |
| Default |
| Housing |
| Loan |
| Contact |
| Month |
| Day\_of\_week |
| Poutcome |

**Bank Dataset**

1. **Bank data** [**https://archive.ics.uci.edu/ml/datasets/bank+marketing**](https://archive.ics.uci.edu/ml/datasets/bank+marketing)

* Column names are listed below:
  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)