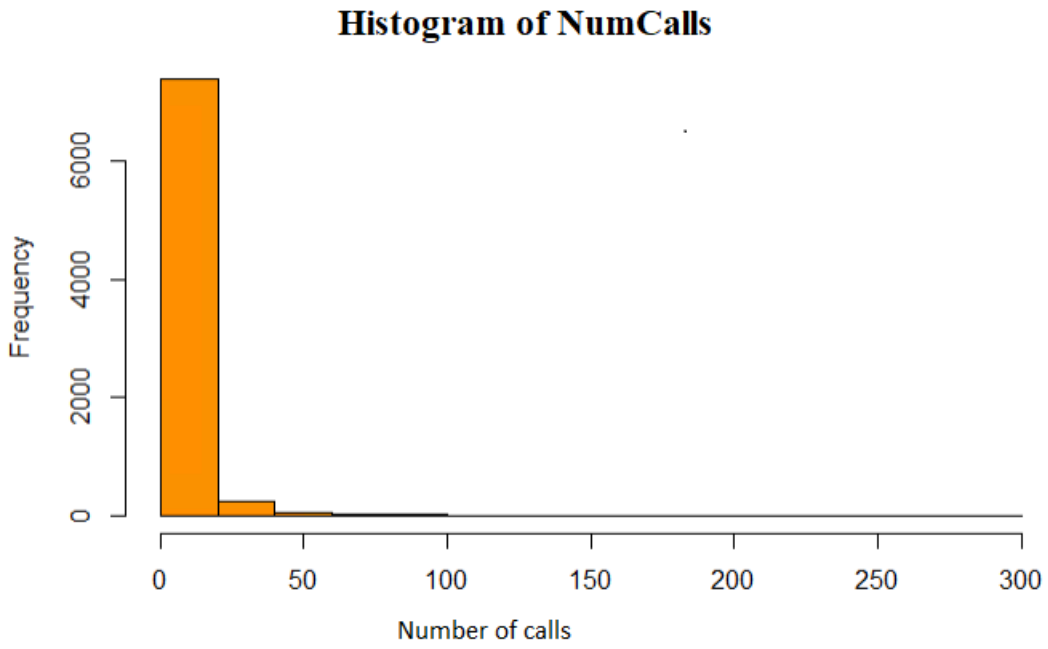
Description of the task

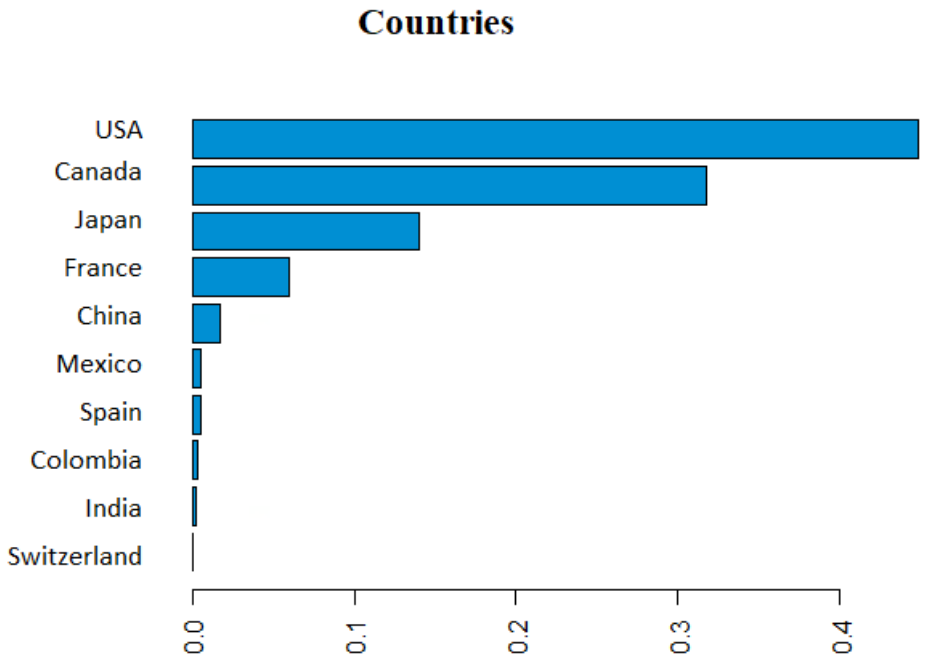
In a spreadsheet Customers2.xlsx each row represents a customer and his activity (how many phone conversations he had, how many times he downloaded a product brochure, how many times he visited the company website, etc.). The last column says if he eventually purchased the product or not.

The environment should be: Jupyter Notebook, Python 3, scikit-learn, pandas. Add other libraries, if needed. Add comments to the code.

1. Conduct some Exploratory Data Analysis (your decision, what you want to include).
2. For one of the numerical columns (e.g. NumCalls) crate a histogram showing how many times number of calls is between 0 and 19, between 20 and 39, between 40 and 59, etc. (this is sample graph from another dataset, where there was over 7000 NumCalls between 0 and 19).



3. Create a bar chart showing what is a percentage of a specific country in the column Countries (this graph is to just show look and feel, the actual percentages will be different):



4. Add a column TotalInteractions that contains sum of the columns NumCalls, NumEmails, NumDownloads, NumEvents, and NumForms.

NumCalls	NumEmails	NumDownloads	NumEvents	NumForms	TotalInteractions
33	19	1	0	1	54
0	1	0	1	0	2
4	6	2	0	0	12
0	10	0	0	1	11
7	0	0	0	0	7
10	1	0	1	0	12
5	0	0	0	0	5
1	0	0	0	0	1

5. Read the Excel spreadsheet CountryMapping.xlsx that provides mapping of country names to the continents into a dataframe:

Country	**Continent**
Argentina	SouthAmerica
Austria	Europe
Belgium	Europe
Brazil	SouthAmerica
Canada	NorthAmerica

6. In the Customers dataframe add a column Continent that would contain continents based on provided mapping:

Country	**Continent**
Germany	Europe
USA	NorthAmerica
Mexico	NorthAmerica
India	Asia
USA	NorthAmerica
USA	NorthAmerica

4. Create classification machine learning model that predicts last column MadeAPurchase.

5. Show some metrics of your choice (e.g. accuracy, precision, ROC).

6. Preform some sample hyper-parameter tuning.