



## **Data Visualization Project 2**

**ΜΑΛΩΝΑΣ ΚΩΝΣΤΑΝΤΙΝΟΣ**

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## Dataset processing

I performed some typical processing of the Dataset (**final\_demographics\_data.csv**) by doing the following:

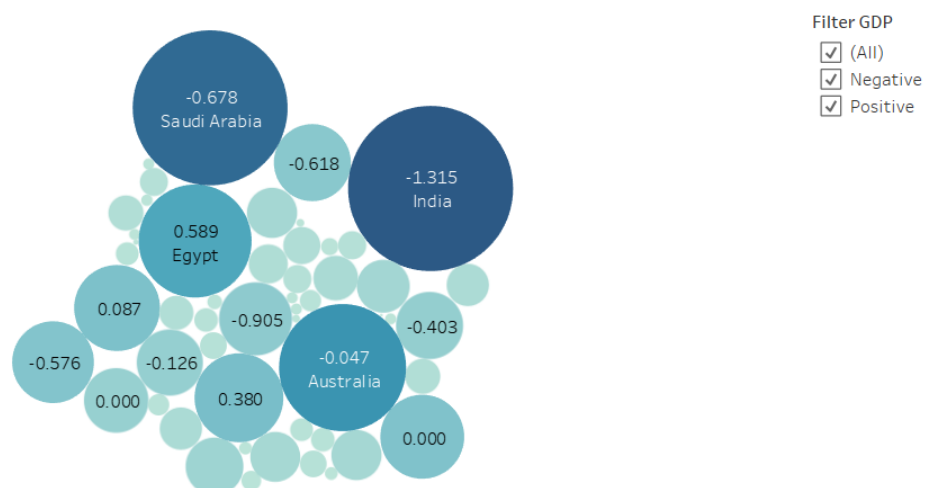
- Replacing **nan** values with **0**
- Normalize the numerical values by dividing with the maximum value of each column

To perform the above tasks I created a **Python** script with the file-name **data\_preparation.py**. The aforementioned script produces the **final dataset**, that I used to produce the graphs, which I save as a csv and as an xlsx file with the name **my\_dataframe.csv** and **my\_dataframe.xlsx** respectively

## Graphs

### Arms Imports per Country / GDP growth (annual %) per Country

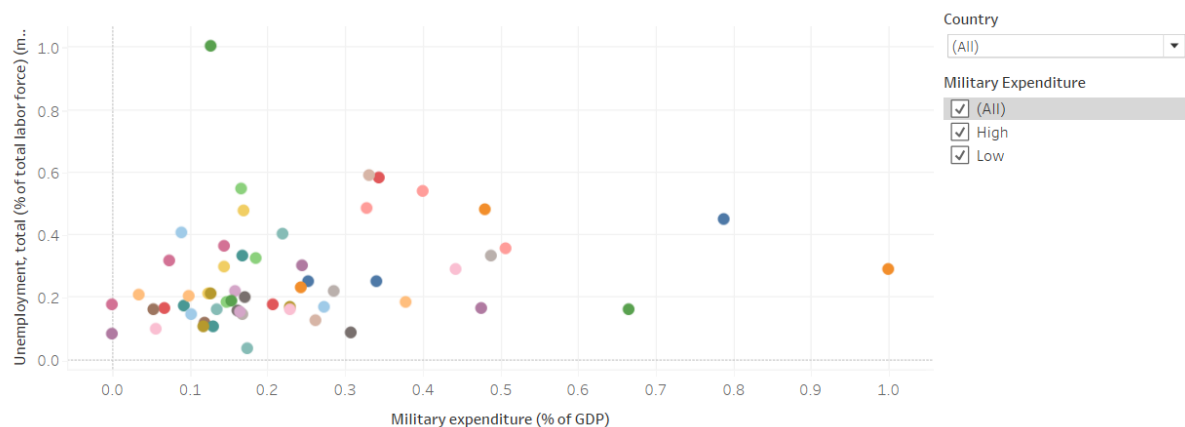
I created a **Bubble Chart** which shows the percent of magnitude of the **Arms imports per Country** relative to the **GDP annual growth** of each country. Inside each Bubble the user can see the name of the country and the annual GDP growth (negative, positive value). The bigger the bubble the bigger the Arms imports. The user can interact with the graph with the custom Filter (**Filter GDP**) to see only the bubbles with **Positive, Negative GDP**.



Arms imports per Country / per GDP annual growth of country

## Military Expenditure per Country / Unemployment rate per Country

I created a **Scatter Plot** which shows the **expenses on the Military of each Country** in relevance with the **Unemployment rate of each Country**. The user can interact with the plot with the custom filter **Country** and the custom filter **Military expenditure**. With the **Country** filter the user can select which country he wants to show on the graph and with the **Military Expenditure** filter he can show in the graph the countries that spent equal or more than 0.5 of GDP on Military expenses, or he can show in the graph the countries that spent less than 0.5 of GDP on Military expenses.



Military Expenditure per Country / Unemployment rate per Country