

Practice Assignment 08

Create a GitHub repository called “st2195_assignment_8” and include the following Python scripts:

1. assignment_8_1.ipynb to replicate assignment 7 in Python [5 points]
2. assignment_8_2.ipynb to describe the latest bilateral trade data for the G7 (this aggregate can be computed using bilateral imports and exports data available on the IMF Direction of Trade Statistics) with the three network graphical representations in the module on network visualisation [2.5 points]
3. assignment_8_3.ipynb to repeat the second bullet point using one year ago data and compare the output with the latest results using a 3x2 subplot containing all the network representations [2.5 points]

Note 1: please upload the data used for the second and third bullet points in csv format in your repository.

Note 2: describe in the README.md file the measure used for aggregating bilateral imports and exports. Be careful with the definition of the data downloaded from the IMF DTS.

Additional Notes and Hints:

- **assignment_8_1.ipynb – tasks for practice assignment 7 listed below**
 - Generate a series of bar charts to describe the gender, ticket class and survival of the passengers onboard.
 - Generate a histogram for the passengers' age. Furthermore, describe the passengers' age using the following two boxplots: age per ticket class, and age based on survival.
 - Generate a histogram for the travel fare and a table showing the number of people who did not pay – you may want to check on Google why a handful of people was on board for free!
 - A chart of your choice to describe the family size per ticket class
 - A series of stacked bar charts to show the how survival differs for different gender and ticket class
 - A violin chart describing how survival related to age and gender
 - A violin chart describing the survival rate related to age and ticket class
- **assignment_8_2.ipynb & assignment_8_3.ipynb are on network visualisations**
 - How to download the bilateral trade data for the G7 countries (available from IMF Direction of Trade Statistics)?
 - Go to “IMF Direction of Trade Statistics” (use this link -- <https://data.imf.org/?sk=9D6028D4-F14A-464C-A2F2-59B2CD424B85&slId=1390030341854>)
 - Note: G7 countries are France, Germany, Italy, Japan, the United States, the United Kingdom, and Canada
 - Let's extract 2020M1 (i.e., Jan 2020) and 2021M1 (i.e., Jan 2021) stats. You can choose another month, quarter, year, etc.

IMF DATA ACCESS TO MACROECONOMIC & FINANCIAL DATA

Direction of Trade Statistics (DOTS) Latest Update Date: 07/30/2021 DOTS Data Availability API

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To display data please select the desired Time, Country and Indicator on the left. For detailed help documents please use "How to Use Query" in the IMF knowledge repository.

Export the table to Excel to retrieve the observation status indicating the estimation method along with the data. | Figures shown without symbols are data reported from the respective country's own records. | Figures followed by the letter 'Y' indicate that data are estimated on a monthly basis, but reconciled with official monthly, quarterly and/or annual information available by the reporting country. | Figures followed by the letter 'e' indicate that data are estimated using counterpart information only. | These flags only apply to bilateral trade between two individual countries, not to the world and area aggregates.

Data view View Table Background Title Table adjust Advanced Export Share Save as

Direction of Trade Statistics (...

Columns

Time (2020M01) ✕

Counterpart ... (7 fr. ...) ✕

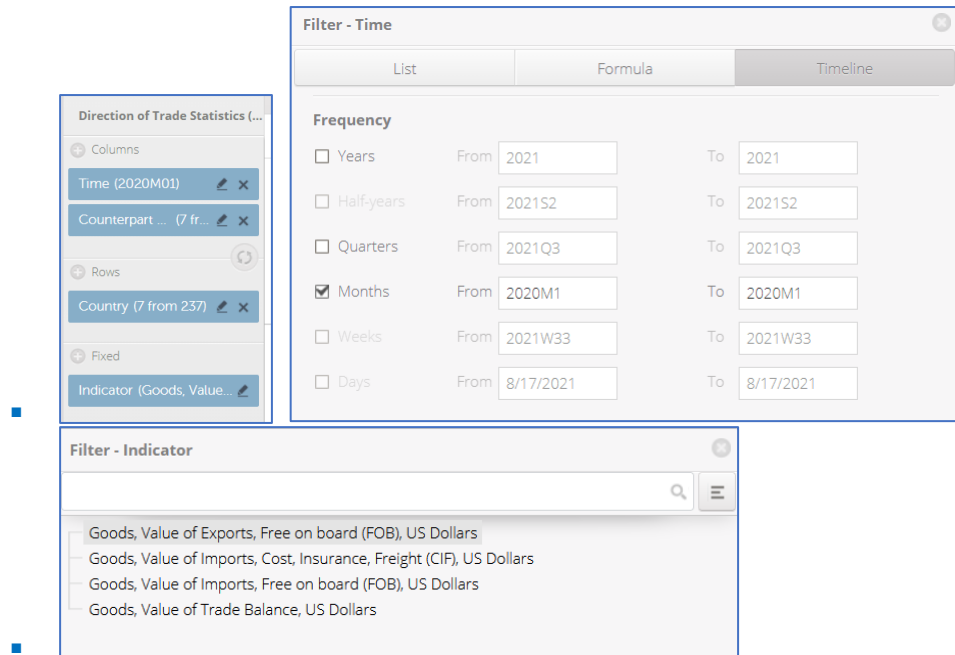
Rows

Country (7 from 257) ✕

Fixed

Indicator (Goods, Value) ✕

	Canada	France	Germany	Italy	Japan	United King.	United State
Canada		259.77	356.29	158.94	773.17	1,458.70	26,820.72
France	269.97		6,440.93	3,525.58	544.50	2,695.98	3,219.70
Germany	931.95	9,628.67		6,253.25	1,863.96	6,717.74	10,086.17
Italy	385.37	4,422.53	5,280.94		718.99	2,348.97	4,146.90
Japan	742.19	482.31	1,487.67	373.96		1,331.33	9,664.66
United Ki	547.71	2,434.15	4,016.62	964.40	538.73		6,139.22
United St	22,550.41	3,494.20	4,718.31	1,742.35	5,454.47	5,832.58	



- Steps to extract 2020M1 stats into an Excel file:
 1. Columns = Time (select Timeline -> Frequency -> Months = "2020M1 to 2020M1") and Counterpart (select G7 countries individually).
 2. Rows = Country (select G7 countries individually)
 3. Export to .xlsx
- Repeat above set of 3 steps for 2021M1 stats.
- The 3 network graphical representations in the module on network visualization are:
 1. Spring layout
 2. Random layout
 3. Circular layout
- If you encounter an error "error in random state" when drawing the network graph, try installing a different version of the decorator library
 - Type "pip install decorator==5.0.5" in anaconda prompt