

Lab Assignment – IA6 Hierarchical Data Visualizations

Note on Software used for following Visualizations: (Tableau)

Tableau is a visual analytics platform transforming the way we use data to solve problems—empowering people and organizations to make the most of their data.

It includes:

- Easy to access from different sources.
- No need for any technical or programming knowledge, and Quick response for making a dashboard.
- In terms of connecting and sharing, it has various inbuilt advanced features such as: Collaboration and distribution, highly securable, Multiple data sources connection, Easy importation and exportation of the massive size of data.
- For easy accessibility and analysis, the data file can be downloaded locally on mobile or desktop, multilingual representation of data, real-time exploration of any dataset, etc.

Q) Create a Hierarchical data set to contain 3 levels of information of your choice in an domain. Visualize the hierarchy using:

- a. Tree maps**
- b. Heat maps**
- c. Cluster Map/ chart (Exempted for now – on 15.03.2022)**

Answer: Some Key points to note before visualization process:

1. Dataset Used:

The dataset is self-designed dataset, loosely based on the <https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD> dataset. It depicts the name of countries, the standard for GDP per capita and the GPD per capita for the years 2008 & 2018.

Tableau - Book1

File Data Server Window Help

Sheet1 (IA6 - Dataset)

Connection: Live Extract Filters: 0 Add

Sheet1 4 fields 267 rows 100 rows

Connections: IA6 - Dataset Microsoft Excel

Sheets: Sheet1 New Union

Name: Sheet1

Fields:

Type	Field Name	Physical Table	Remote Field Name
ABC	Countr...	Sheet1	F1
ABC	Indicat...	Sheet1	F2
2008		Sheet1	F3
2018		Sheet1	F4

Country Name	Indicator Name	2008	2018
Afghanistan	GDP per capita, PPP (current international 3 \$)	1,272.57	2,082.64
Africa Eastern and Southern	GDP per capita, PPP (current international 2 \$)	3,143.00	3,791.88
Africa Western and Central	GDP per capita, PPP (current international 4 \$)	3,230.72	4,231.82
Albania	GDP per capita, PPP (current international 1 \$)	8,228.35	13,483.01
Algeria	GDP per capita, PPP (current international 1 \$)	12,643.15	11,909.93
American Samoa	GDP per capita, PPP (current international 2 \$)	null	null
Andorra	GDP per capita, PPP (current international 2 \$)	null	null
Angola	GDP per capita, PPP (current international 5 \$)	6,607.29	7,099.97
Antigua and Barbuda	GDP per capita, PPP (current international 3 \$)	25,690.69	21,521.89
Arab World	GDP per capita, PPP (current international 3 \$)	14,409.48	14,652.09
Argentina	GDP per capita, PPP (current international 5 \$)	17,404.07	23,293...
Armenia	GDP per capita, PPP (current international 1 \$)	8,300.49	13,020.40
Aruba	GDP per capita, PPP (current international 1 \$)	37,247.98	null
Australia	GDP per capita, PPP (current international 4 \$)	37,499.53	50,169.19
Austria	GDP per capita, PPP (current international 5 \$)	41,316.23	56,960...
Azerbaijan	GDP per capita, PPP (current international 1 \$)	12,956.83	14,550.76
Bahamas, The	GDP per capita, PPP (current international 4 \$)	32,373.49	37,416.97

Data Source: Sheet1 Sheet2 Sheet3

IA6 - Dataset.xlsx - Excel

File Home Insert Page Layout Formulas Data Review View Help Tell me what you want to do

Clipboard Font Alignment Number Styles Cells Editing

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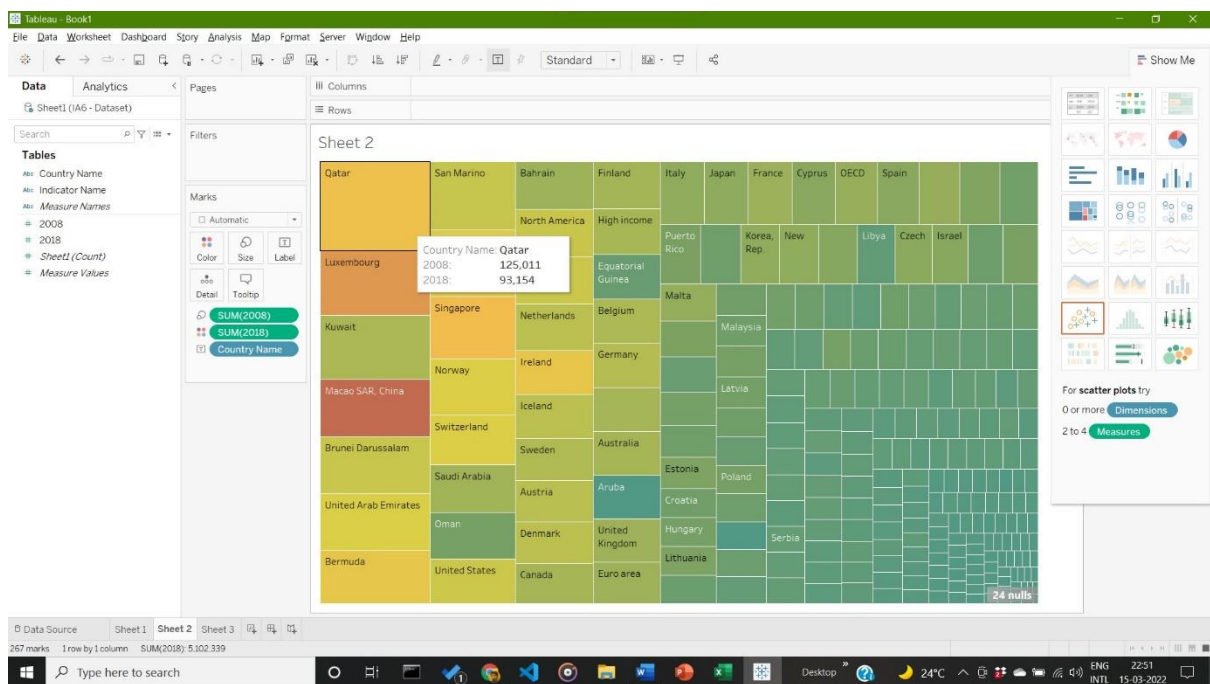
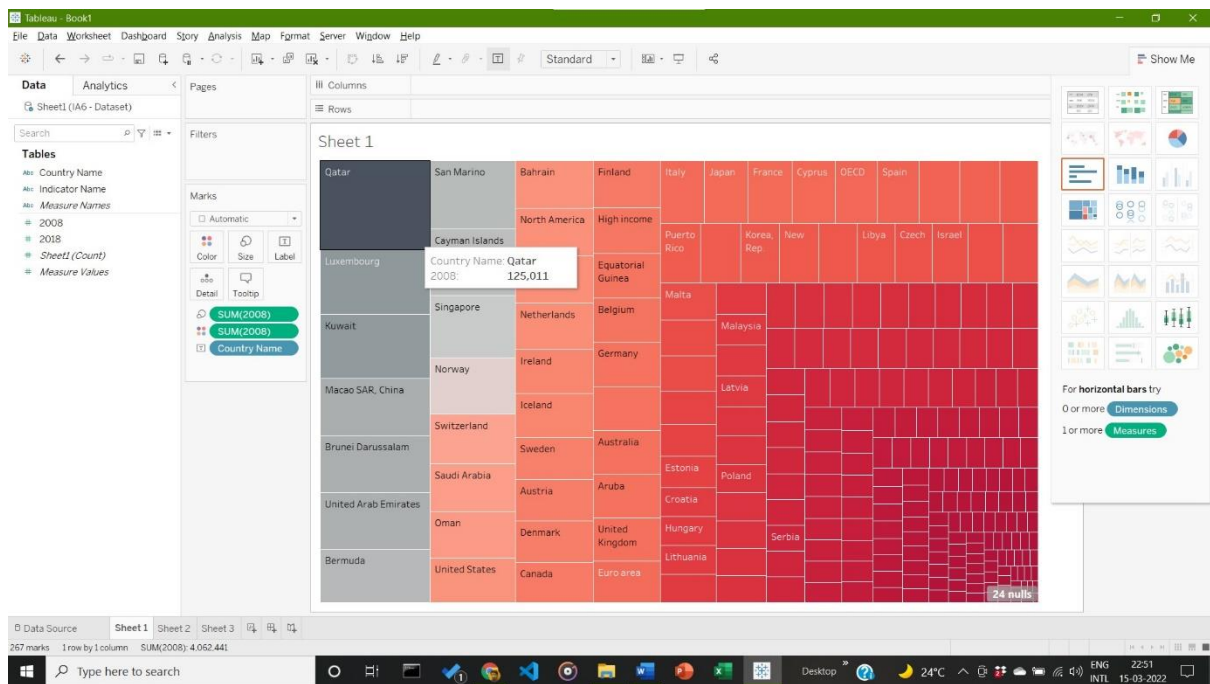
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Country Name	Indicator Name	2008	2018												
2	Aruba	GDP per capita, PPP (current international 1 \$)	37247.98													
3	Africa Eastern and Southern	GDP per capita, PPP (current international 2 \$)	3142.996	3791.875												
4	Afghanistan	GDP per capita, PPP (current international 3 \$)	1272.573	2082.636												
5	Africa Western and Central	GDP per capita, PPP (current international 4 \$)	3230.719	4231.816												
6	Angola	GDP per capita, PPP (current international 5 \$)	6607.292	7099.972												
7	Albania	GDP per capita, PPP (current international 1 \$)	8228.348	13483.01												
8	Andorra	GDP per capita, PPP (current international 2 \$)														
9	Arab World	GDP per capita, PPP (current international 3 \$)	14409.48	14652.09												
10	United Arab Emirates	GDP per capita, PPP (current international 4 \$)	79732.24	68576.12												
11	Argentina	GDP per capita, PPP (current international 5 \$)	17404.07	23293.4												
12	Armenia	GDP per capita, PPP (current international 1 \$)	8300.492	13020.4												
13	American Samoa	GDP per capita, PPP (current international 2 \$)														
14	Antigua and Barbuda	GDP per capita, PPP (current international 3 \$)	25690.69	21521.89												
15	Australia	GDP per capita, PPP (current international 4 \$)	37499.53	50169.19												
16	Austria	GDP per capita, PPP (current international 5 \$)	41316.23	56960.09												
17	Azerbaijan	GDP per capita, PPP (current international 1 \$)	12956.83	14550.76												
18	Burundi	GDP per capita, PPP (current international 2 \$)	636.332	779.8082												
19	Belgium	GDP per capita, PPP (current international 3 \$)	37883.33	52528.12												
20	Benin	GDP per capita, PPP (current international 4 \$)	2347.924	3236.67												
21	Burkina Faso	GDP per capita, PPP (current international 5 \$)	1401.958	2168.662												
22	Bangladesh	GDP per capita, PPP (current international 1 \$)	2206.51	4547.48												
23	Bulgaria	GDP per capita, PPP (current international 2 \$)	14335.71	22990.11												
24	Bahrain	GDP per capita, PPP (current international 3 \$)	47847.62	47503.06												
25	Bahamas, The	GDP per capita, PPP (current international 4 \$)	32373.49	37416.97												
26	Bosnia and Herzegovina	GDP per capita, PPP (current international 5 \$)	9028.859	14901.78												
27	Belarus	GDP per capita, PPP (current international 1 \$)	13885.75	19430.28												
28	Burkina Faso	GDP per capita, PPP (current international 2 \$)	7554.688	7426.046												

Ready

2. Visualization:

a. Visualization using Tree Mapping for Given Hierarchical Dataset Visualization

Visualization based on country names and the given GDP per capita of the years 2008 (as seen in figure 1) and a combination of GDP per capita for years 2008 and 2018 to visualize tree map data in difference of a span of a decade.

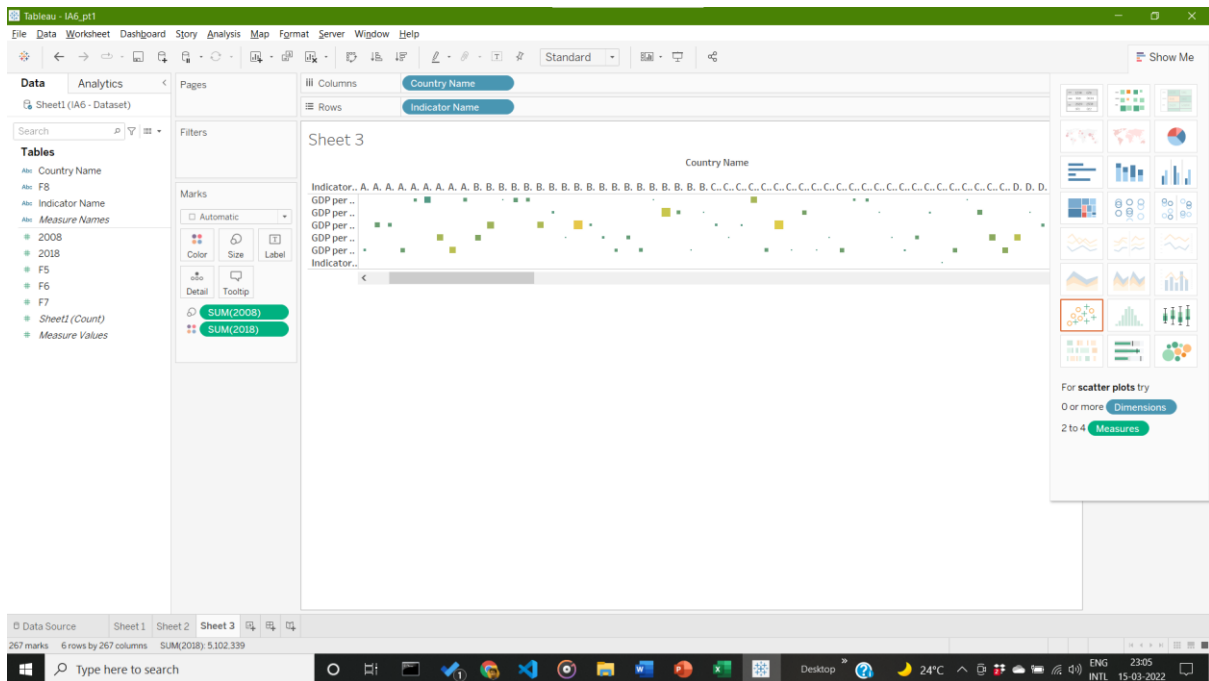


Inference:

Qatar maintains the highest GDP per capita, in both years 2008 and 2018. It also maintains the highest difference over a decade. There is also a noticeable fluctuation in the GDP per capita of MACAO SR China, over the decade.

b. Visualization using Heat Mapping for Given Hierarchical Dataset Visualization

Visualization based on country names and the given GDP per capita of the years 2008 (as seen in figure 1) and a combination of GDP per capita for years 2008 and 2018 to visualize Heat map data in the year 2008.



Inference:

Heat Map is displayed, but due to levels present in Hierarchical dataset, gaps are present in the Heat Map. Can be worked on in Review 2 of IA6