

## **Department of Computer Science and Engineering (Data Science)**

## **Lab Manual**

**Subject: Foundations of Data Analysis Laboratory (DJ19DSL303)** 

Semester: III Experiment 5 (Data Visualization)

Name: Dev Patel SAP ID:60009200016

Batch: K/K1 Date: 14/12/2021

Aim: Perform data visualization using highlight tables.

## Theory:

## **Highlight Tables**

- The highlight table allows us to use conditional formatting to a view of a normal table.
- Tableau will automatically apply a colour scheme in either endless or stepped array of colours from highest to lowest.
- It's great for comparing a field's values within a row or column.
- Use highlight tables to match categorical data using colour.
- Highlight tables are often outstanding as they help users quickly spot the foremost interesting values during a table of numbers.
- In cases where multiple variables are displayed, Measure Values are often used to apply one colour scheme to all or any of the values in a table.
- Unless the variables are very similar, highlighting multiple variables is typically not helpful and can mislead.

#### **Department of Computer Science and Engineering (Data Science)**

#### **Tool Used:**

Tableau Public 2021.3

#### **Datasets:**



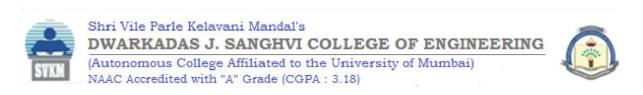
#### **Visualizations:**

Q) The UN also has an Advisory Role. It advises countries on things that require improvement/change. Use a Highlight table to find if any of the countries with a large population require changes.

The Highlight table would be used to compare the parameters with other countries in order to evaluate if anomalies are present.

Health and/or Development Metrics should be used for the same.

The below visualization is Health and Development indicator for the countries, which are sorted in order of their population. From the highlight table, we can say that China and India have low average percentage expenditure on health. They can be advised to spend more money in the health sector. As the average energy usage of the United States is too high, they should be advised to use renewable sources of energy more and conserve power. Sierra Leone has the highest infant mortality rate and the lowest average life expectancy. The United Nations can make plans to help them in those aspects as required. We can also see that United States has a very high average tourism outbound, Uganda has the highest birth rate, Japan has the highest life expectancy and several other inferences can be made from the visualization allowing the UN to advise the countries accordingly.



# **Department of Computer Science and Engineering (Data Science)**

Country/Regi ∓	Avg. Birth Rate	Avg. Health Exp % GDP	Avg. Infant Mortality Rate	Avg. Life Expectancy	Avg. Energy Usage	Avg. Tourism Outbound	0.87%	4.50
China China	1.23%	4.80%	0.020	74.38 Years	1,840.00K	\$33B	AVG(Health	Exp % GDP
India	2.30%	4.12%	0.054	64.69 Years	576.97K	\$88		
United States	1.38%	16.12%	0.007	78.15 Years	2,250.94K	\$87B	2.65%	16.12
Indonesia	2.07%	2.65%	0.032	69.08 Years	181.08K	\$6B	AVG(Infant N	Mortality Ra
Brazil	1.76%	8.10%	0.020	72.38 Years	223.46K	\$11B	·	_
Pakistan	2.74%	3.02%	0.076	65.80 Years	79.11K	\$1B	0.002	0.1
Russia	1.00%	5.20%	0.015	66.00 Years	649.55K	\$17B	AVG(Life Exp	a a a tanau A
Bangladesh	2.30%	3.20%	0.051	68.00 Years	23.87K	\$0B	AVG(LITE EX	ectancy)
Japan	0.87%	8.76%	0.003	82.78 Years	496.09K	\$40B	44.00 Years	82 78 Ve
Germany	0.88%	10.78%	0.004	78.75 Years	338.12K	\$758		
Turkey	2.00%	5.30%	0.029	72.00 Years	77.83K	\$2B	AVG(Energy	Usage)
Thailand	1.20%	3.50%	0.015	73.00 Years	101.04K	\$6B		
Iran	1.90%	4.60%	0.029	70.00 Years	122.98K	\$1B	0.68K	2,250.9
Spain	1.10%	9.60%	0.004	82.00 Years	127.73K	\$23B	AVG(Tourisn	n Outbound
South Africa	2.30%	8.60%	0.053	53.00 Years	117.37K	\$4B		
Colombia	2.00%	6.80%	0.016	74.00 Years	32.24K	\$2B	\$0B	\$8
Tanzania	4.10%	5.40%	0.060	55.00 Years	17.07K	\$1B		
Poland	0.99%	6.43%	0.007	75.29 Years	92.71K	\$5B		
Uganda	4.50%	9.20%	0.051	57.00 Years		\$0B		
Sudan	3.60%	7.50%		61.00 Years	15.54K	\$1B		
Canada	1.10%	11.40%	0.005	81.00 Years	250.99К	\$37B		
Algeria	2.10%	3.10%	0.029	70.00 Years	32.34K	\$1B		
Finland	1.10%	9.03%	0.002	80.67 Years	34.88K	\$6B		
Togo	3.80%	5.90%	0.070	54.00 Years	2.33K	\$0B		
Slovakia	1.03%	7.20%	0.008	74.69 Years	18.02K	\$1B		
Sierra Leone	4.00%	14.00%	0.122	44.00 Years		\$0B		
Paraguay		8.10%	0.028	70.00 Years	3.85K	\$0B		
Papua New Guinea	3.50%	4.00%		59.00 Years		\$0B		
Nicaragua	2.60%	6.10%	0.027	72.00 Years	2.82K	\$0B		
Libya	2.30%	4.10%	0.022	73.00 Years	17.44K	\$1B		
Laos	3.10%	3.30%	0.083	62.00 Years		\$0B		
Kyrgyzstan	2.60%	6.75%	0.028	69.50 Years	2.64K	\$0B		
Jordan		8.90%	0.020	73.00 Years	6.68K	\$1B		
Eritrea	3.90%	3.40%	0.042	61.00 Years	0.68K			
Denmark	1.20%	9.55%	0.004	77.67 Years	19.48K	\$7B		