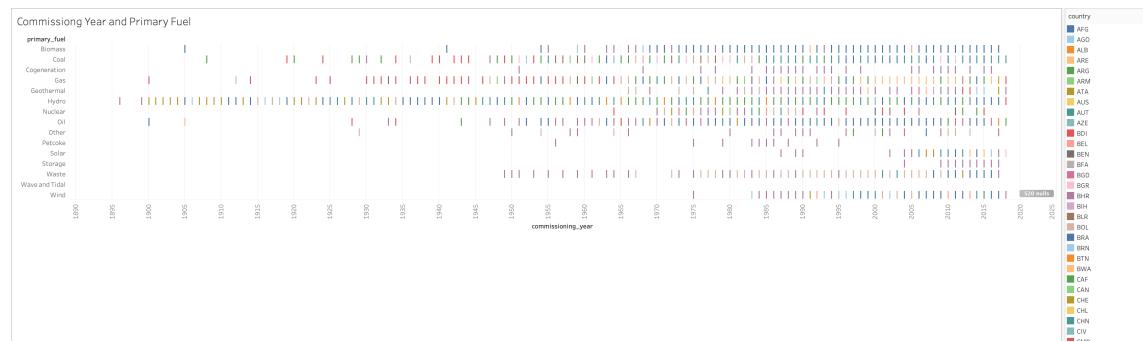


CSCM37: Coursework 1

Andrew Gray
(445348)

25/02/2020

Part 1, design 1



Description

Visual Design Type: Gantt

Name of Tool: Tableau

Country: All Countries

Year: 1896 - 2018

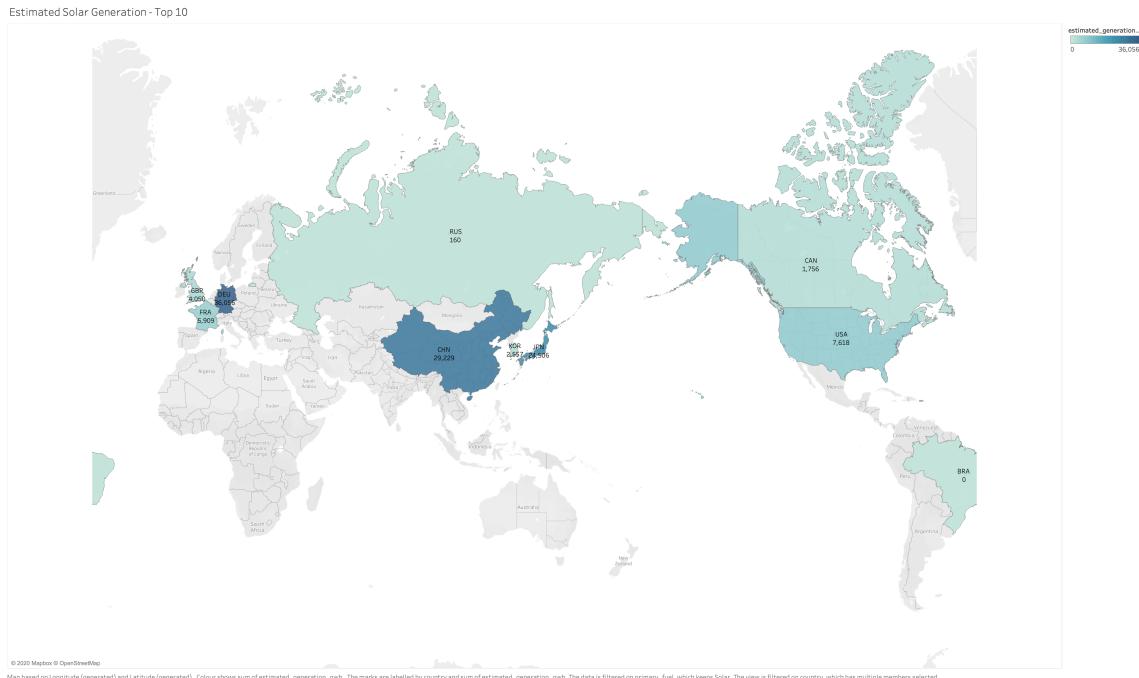
Visual Mappings:

- **mapping 1:** commissioning year x axis, y axis primary fuel.
- **mapping 2:** Country is used for the colouring of the points.

Unique Observation: The oldest powerplant was commissioned in the USA in 1896 and its main fuel type was hydro. The second commissioned powerplant was also in the USA and again this was hydro which was commissioned in the 1899. Then in 1900 3 power plants were commissioned. These were Brazil with oil , Russia with gas and switzerland with hydro.

Data Preparation: There was no modifications made to this dataset.

Part 1, design 2



Description

Visual Design Type: Map

Name of Tool: Tableau

Country: France, Germany, Great Britain, Russia, China, Japan, South Korea, USA, Canada, Brazil.

Year: 2018

Visual Mappings:

- **mapping 1:** X and Y axis use the longitude and latitude values, this produces the map.
- **mapping 2:** Country is used to label the visualisation as well as the text. Colour is used to give a scale of the values, with dark being the biggest and a lighter colour being the smallest.

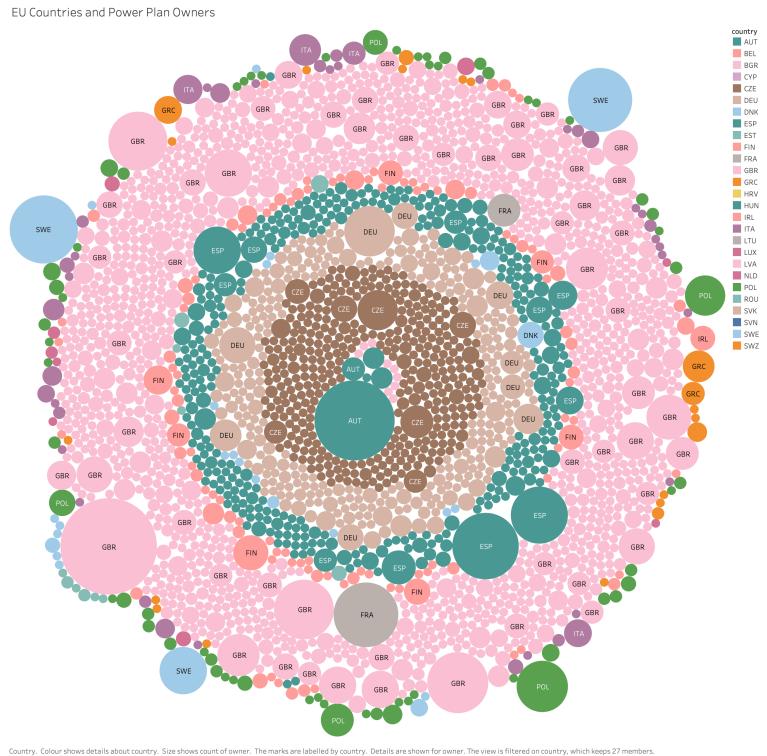
Unique Observation: Germany is estimated to have the highest amount of solar energy created in 2018, at a value of 36,056. China is the second biggest estimation of solar power generated.

Weirdly enough, most counties around the equator are not in the top 10 of

solar power energy generated. Brazil being the only one. You would think that this would be an effective source to tap into.

Data Preparation: Two filters have been applied, primary fuel, which is set to solar and country, which just shows the top 10 based on the sum of the estimated generation of energy.

Part 1, design 3



Description

Visual Design Type: Packed Bubbles

Name of Tool: Tableau

Country: EU members including the UK, Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Germany, Denmark, Estonia, Spain, Finland, France, United Kingdom, Greece, Croatia, Hungary, Ireland, Italy, Lithuania, Luxembourg, Latvia, Malta, Netherlands, Poland, Portugal, Romania, Sweden, Slovenia, Slovakia.

Year: 1896 - 2018

Visual Mappings:

- **mapping 1:** The count of the owner was used to generate the size of the bubbles.
- **mapping 2:** The owner was also used as a detail as well as the sum of the number of records on the visualisation. Country was used for the colour coding and also used for the tooltip.

Unique Observation: All of France's power plants are owned by two companies, EDF and GDF-Suez. While the Great Britton has the most amount of different owners for their power plants.

Data Preparation: Data was filtered by country.

Part 1, design 4

Selected EU Countries and their Total Fuel Capacity



Description

Visual Design Type: Treemap

Name of Tool: Tableau

Country: Great Brittan, Spain, Germany, Italy, France, Greece, Denmark, Ireland.

Year: 2018

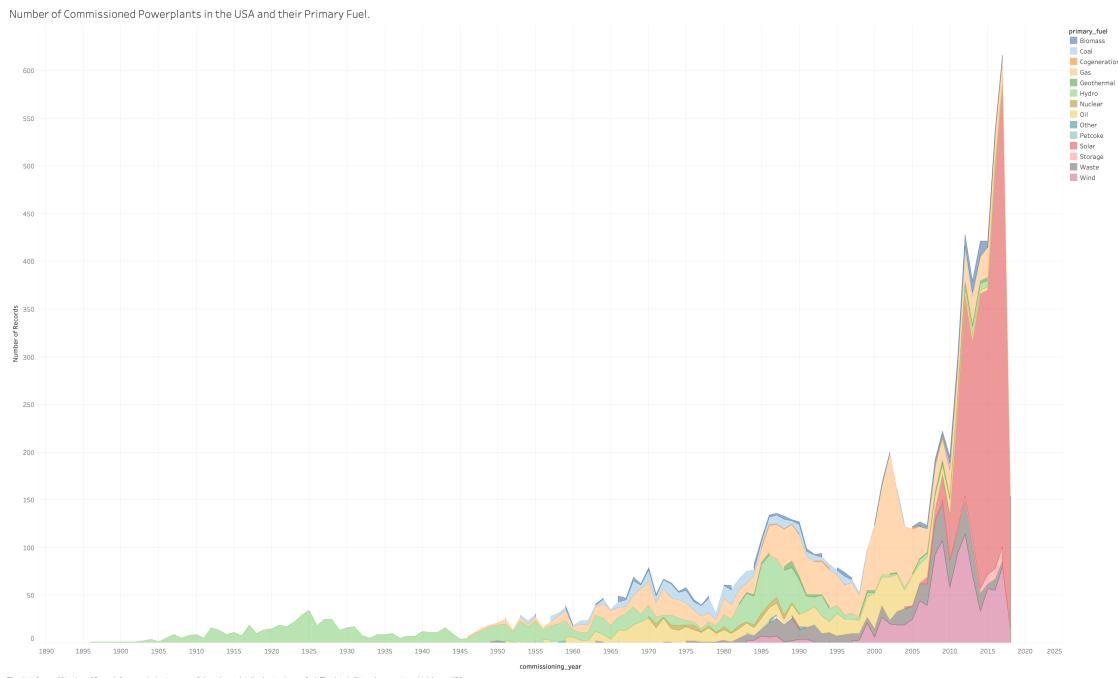
Visual Mappings:

- **mapping 1:** Primary fuel was used for the colour coding.
- **mapping 2:** sum of the capacity was used for the size.
- **mapping 3:** Country, primary fuel and sum of the capacity was used as a label within the visualisation.

Unique Observation: France has the most amount of energy capacity. The largest of the capacity being for nuclear energy with a capacity of 63,130. The country with the next amount of capacity is Germany with Coal being its primary fuel at 47,773.

Data Preparation: A filter on the countries listed has been used.

Part 1, design 5



Description

Visual Design Type: Area Charts Continuous.

Name of Tool: Tableau

Country: USA

Year: 1890 - 2018

Visual Mappings:

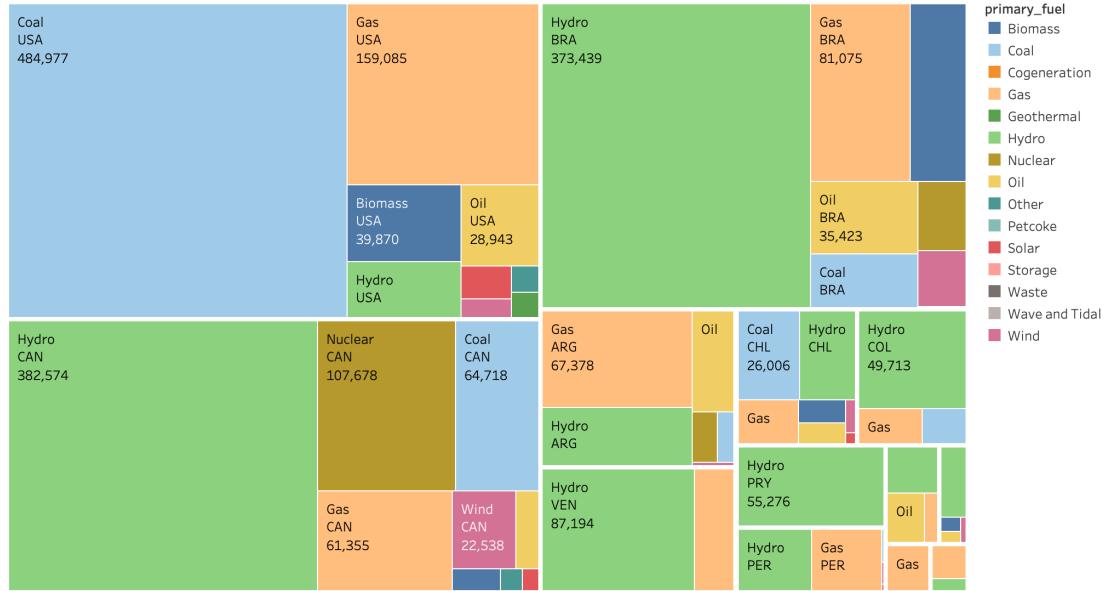
- **mapping 1:** X is assigned to commissioning year and the y axis is assigned to the sum of the number of records.
- **mapping 2:** The colour of the area charts are assigned to the primary fuels.

Unique Observation: Between 1896 - 1946 the USA only every commissioned hydro power plants.

Data Preparation: Data filtered to only show USA.

Part 2, Treemap 1

Canada, North and South America Estimated Generation



Primary_fuel, country and sum of estimated_generation_gwh. Colour shows details about primary_fuel. Size shows sum of estimated_generation_gwh. The marks are labelled by primary_fuel, country and sum of estimated_generation_gwh. Details are shown for country_long. The view is filtered on country_long, which keeps 15 of 164 members.

- **Name of Tool:** Tableau
- **Country:** All of north, central and south america.
- **Year:** 2018
- **Data Preparation:** The data was filtered using the built in features of Tableau, just using the Counties that are available within the dataset associated to these continents.
- **Color:** The colour coding is associated with the primary fuel type.
- **Hierarchy:** The Hierarchy works from the country down to the individual primary fuels of the power plants within that country.
- What leaf node size is mapped to? These are mapped to the total estimated values of energy generated by the different primary fuels.
- How are the leaf nodes laid out or positioned? They are laid within the overall node of the country. For example USA.
- What are internal nodes mapped to? These are assigned to the primary fuel of the power plant.
- What is internal node size mapped to? These are mapped to the total estimated values of energy generated by the different primary fuels.
- Which treemap node layout algorithm is used? Tableau built in algorithm.

Part 3

Username: AndyGray87

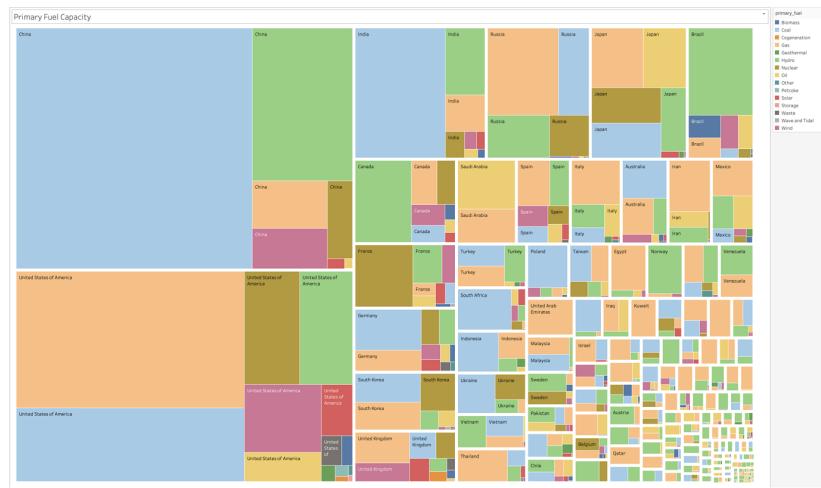
Question:

Tree Map of Primary Fuel Capacity

■ Visual Design

A AndyGray87

2d



Hello, the VisGuides community.

I am, as part of an assignment, trying to visualise data to try and gain potential insights from it. The dataset that I am using is: <http://datasets.wri.org/dataset/globalpowerplantdatabase>.

I have created a treemap, using Tabular, that tries to show the total capacity of all the countries, within the datasets, different power plants by their primary fuel. The dataset has not modified in any way for this visualisation. The fields used are capacity_mw to find the sum; country_long to provide the text overview; primary_fuel to provide the colour coding. However, there are a few things that I would like to get some advice on please.

1. Is this graph clear in what it is representing?
1b) Does it show a clear hierarchy within the treemap visualisation?
2. Are there any changes you would suggest to make this a more effective visualisation? i.e.
changing colour schemes, or using a different visualisation method to display the data.

Thank you for any help or advice.

🔗 ... ↗ Reply

created	last reply	1	39	2	1
A 2d	D 1d	reply	views	users	link

Response:



DataBrock

1d

Hello, good start for an effective visualisation!

To answer your first question, the colour for each of the fuel types can be linked to the tooltip provided within the display so it should be intuitive for most users to understand the relation in the treemap between fuel type and colour.

It is also easy to understand that each country is ranked on their total capacity compared to all others, which is then broken down on a per country basis as to how their power is being generated. A problem with this visualisation however is that due to the sheer number of countries you are trying to display, the majority of them cannot be recognised and if you were to look at this visualisation without access to the source data where you can interactively view the labels, a lot of the information you are trying to convey will be lost. I believe a better approach would be to categorise all of the countries in separate continents. This will serve for two things, 1) you can highlight your ability to manipulate the data given to you by creating novel groupings in the data and 2) it will vastly simplify the presentation of the treemap and you will gain, not lose insight into the data that you are trying to convey since each continent should be able to be read without needing the source data.

A last note, maybe look at colorbrewer for effective colour choice, although what you have picked seem distinct enough!

Hope this helps, good luck with the rest of the assignment, a fellow Swansea Data Vis. student!



Reply

My Response 1:



AndyGray87

1m

Overall, I feel that this is an effective visualisation. It provides the reader with the information in an easy to understand format. An alternative might be to more colour in the countries by using a map, rather than a symbol map, to demonstrate the values by using different colour contrast.

However, over all good job, well done!



...

Reply

My Response 2:

A

AndyGray87

1m

Overall this visualisation is very effective and it looks very nice. However, it might be worth considering Shneiderman's Mantra of 'Overview first, zoom and filter, then details-on-demand'. This could be achieved by removing the bar charts and putting their information within a tool top, or have the information pop up when the user has requested.

However, this is a very effective visualisation and it looks very nice. Well done!

  ...  Reply
