

Title: Working with Geospatial data**Objective:**

1. *Search/locate and download the geospatial Data (Use same dataset if it contains location information)*
2. *To learn how to visualize geospatial data in Tableau*
3. *Apply heat map*
4. *Try various forms of heat maps*
5. *Analyse the visualization and write your interpretation after observation on heat-map*

Course Outcome:

CO1: Learn how to locate and download datasets, extract insights from that data and present their findings in a variety of different formats.

CO3 Apply data visualization best practices

Books/ Journals/ Websites referred:

<https://datavizcatalogue.com/methods/choropleth.html>

<https://www.ecdc.europa.eu/en/publications-data/download-todays-data-geographic-distribution-covid-19-cases-worldwide>

Resources used:

<https://www.ecdc.europa.eu/en/publications-data/download-todays-data-geographic-distribution-covid-19-cases-worldwide>

Theory**Definition Time series:**

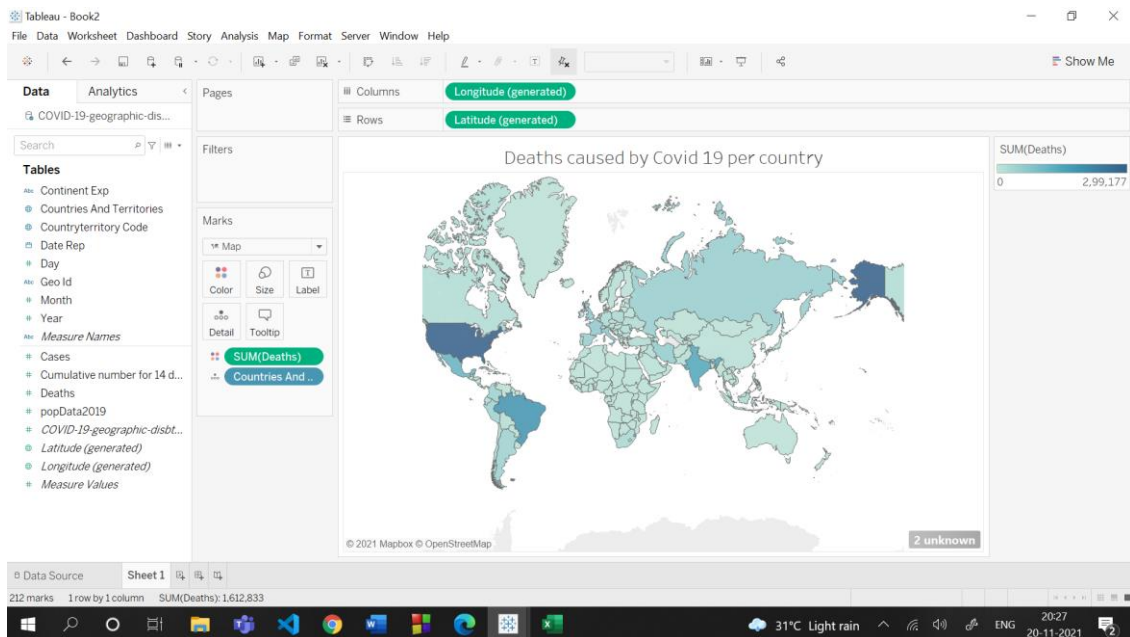
In mathematics, a time series is a series of data points indexed in time order. Most commonly, a time series is a sequence taken at successive equally spaced points in time. Thus, it is a sequence of discrete-time data

Following points should be written by students

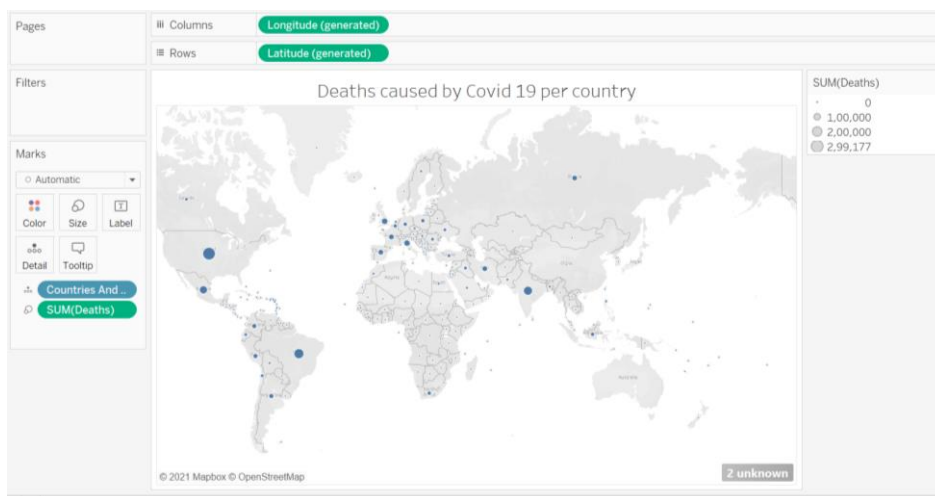
1. Observation after plotting data
2. Observation after plotting various forms of heat maps like based on visualization Que
3. Interpretation of visualized map

Note: Detail observation needed along screenshots wherever required

Screenshots:



This map shows the distribution of COVID 19 deaths using hues of the same color. The darker shades indicate more concentration of deaths in that particular region. Here we can see that the highest concentration of deaths is in USA, followed by Brazil, India, Italy, Russia and so on.



Deaths
caused by
Covid 19
per country

Countries And Te..

Afghanistan
Albania
Algeria
Andorra
Angola
Anguilla
Antigua_and_Ba..
Argentina
Armenia
Aruba
Australia
Austria
Azerbaijan
Bahamas
Bahrain
Bangladesh
Barbados
Belarus
Belgium
Belize
Benin
Bermuda
Bhutan
Bolivia
Bonaire, Saint E..
Bosnia_and_Her..
Botswana
Brazil
British_Virgin_I..
Brunei_Darussal..
Bulgaria
Burkina_Faso
Burundi

Cambodia
Cameroon
Canada
Cape_Verde
Cases_on_an_in..
Cayman_Islands
Central_African..
Chad
Chile
China
Colombia
Comoros
Congo
Costa_Rica
Cote_d'Ivoire
Croatia
Cuba
Curaçao
Cyprus
Czechia
Democratic_Rep..
Denmark
Djibouti
Dominica
Dominican_Repu..
Ecuador
Egypt
El_Salvador
Equatorial_Guin..
Eritrea
Estonia
Eswatini
Ethiopia

Falkland_Islands..
Faroe_Islands
Fiji
Finland
France
French_Polynesia
Gabon
Gambia
Georgia
Germany
Ghana
Gibraltar
Greece
Greenland
Grenada
Guam
Guatemala
Guernsey
Guinea
Guinea_Bissau
Guyana
Haiti
Holy_See
Honduras
Hungary
Iceland
India
Indonesia
Iran
Iraq
Ireland
Isle_of_Man
Israel
Italy

Jamaica
Japan
Jersey
Jordan
Kazakhstan
Kenya
Kosovo
Kuwait
Kyrgyzstan
Laos
Latvia
Lebanon
Lesotho
Liberia
Libya
Liechtenstein
Lithuania
Luxembourg
Madagascar
Malawi
Malaysia
Maldives
Mali
Malta
Marshall_Islands
Mauritania
Mauritius
Mexico
Moldova
Monaco
Mongolia
Montenegro
Montserrat
Morocco
Mozambique
Myanmar
Namibia
Nepal
Netherlands
New_Caledonia
New_Zealand
Nicaragua
Niger
Nigeria
North_Macedonia
Northern_Maria..
Norway

Oman
Pakistan
Palestine
Panama
Papua_New_Gui..
Paraguay
Peru
Philippines
Poland
Portugal
Puerto_Rico
Qatar
Romania
Russia
Rwanda
Saint_Kitts_and..
Saint_Lucia
Saint_Vincent_a..
San_Marino
Sao_Tome_and..
Saudi_Arabia
Senegal
Serbia
Seychelles
Sierra_Leone
Singapore
Sint_Maarten
Slovakia
Slovenia
Solomon_Islands
Somalia
South_Africa
South_Korea
South_Sudan
Spain
Sri_Lanka
Sudan
Suriname
Sweden
Switzerland
Syria
Taiwan
Tajikistan
Thailand
Timor_Leste
Togo
Trinidad_and_T..
Tunisia
Turkey
Turks_and_Caic..
Uganda
Ukraine
United_Arab_E..
United_Kingdom
United_Republic..
United_States..
United_States..
Uruguay
Uzbekistan
Vanuatu
Venezuela
Vietnam
Wallis_and_Fut..
Western_Sahara
Yemen
Zambia
Zimbabwe

This is a heat map of the deaths due to COVID 19. The different sized boxes show the concentration of deaths in a particular region.

Conclusion (Students should write in their own words, comparative conclusion needed):

In this experiment, we learned to create heat maps in the Tableau software. We could analyze the various sectors based on the color distribution and thus visualize the dataset in a clear manner.

Date: 20/11/2021

Signature of faculty in-charge

Post Lab Question:

1. Explain the Choropleth maps.

- Choropleth Maps display divided geographical areas or regions that are coloured, shaded or patterned in relation to a data variable. This provides a way to visualise values over a geographical area, which can show variation or patterns across the displayed location.
- The data variable uses colour progression to represent itself in each region of the map. Typically, this can be a blending from one colour to another, a single hue progression, transparent to opaque, light to dark or an entire colour spectrum.
- One downside to the use of colour is that you can't accurately read or compare values from the map. Another issue is that larger regions appear more emphasised than smaller ones, so the viewer's perception of the shaded values are affected.
- A common error when producing Choropleth Maps is to encode raw data values (such as population) rather than using normalized values (calculating population per square kilometre for example) to produce a density map.