**Batch: H2-3 Roll No.: 16010122221**

**Experiment: 06**

|  |
| --- |
| **Title: Working with Geospatial data** |

# Objective:

# *Search/locate and download the geospatial Data (Use same dataset if it contains location information)*

# *To learn how to visualize geospatial data in Tableau*

# *Apply heat map*

# *Try various forms of heat maps*

# *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

# Observation after plotting data

# Observation after plotting various forms of heat maps like based on visualization Que

# 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.

# 

# This map represents the data in form of different sizes of circle. The increasing size indicates increasing number of deaths. The scale on the right indicates the relation between the size of the circle and deaths.

# 

# This map shows the actual count of COVID 19 deaths per country.

# 

# This map is the mixture of the two maps we saw earlier, the labeled and the different sized circles map. Here the data is visualized using different sized circles and is showed using labels

# 

# 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:

# 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 then 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.