

▼ CHOROPLETH MAPS

- A Choropleth map is a type of statistical thematic map that provides an easy way to visualize how a variable varies across a geographic area or show the level of variability within a region.
- The word 'Choropleth' has been derived from two words- '**choros**' meaning 'area/region' and '**plethos**' meaning 'multitude'
- 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.



▼ Geojson Format- Storing details of geographical features in a geojson format

GeoJSON is an open standard format designed for representing simple geographical features, along with their non-spatial attributes. It is based on the JSON format.

Plotting Choropleth Maps

STEP 1: Loading the GeoJson File containing the geographical Map

```
import json
import pandas as pd
import plotly.express as px

INDIA_MAP=json.load(open('/content/states_india.geojson','r'))

display(INDIA_MAP['features'][0]['properties'])

display(len(INDIA_MAP['features']))

for i in range(0,36):
    display(INDIA_MAP['features'][i]['properties'])
```

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import json
import pandas as pd
import plotly.express as px

INDIA_MAP=json.load(open('states_india.geojson','r'))

display(INDIA_MAP['features'][0])
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Plotting Choropleth Maps

STEP 2: Loading the dataset file containing information about the population in different Indian states

```
import json  
import pandas as pd  
import plotly.express as px  
  
INDIA_MAP=json.load(open('/content/states_india.geojson','r'))  
  
INDIA_DATA=pd.read_csv('India-Population1.csv')  
  
display(INDIA_DATA)
```

Id		State	Population	Increase	Area(Km2)	Density	Sex-Ratio	Literacy
0	1	Uttar Pradesh	199812341	0.2023	240928	829	912	67.68
1	2	Maharashtra	112374333	0.1599	307713	365	929	82.34
2	3	Bihar	104099452	0.2542	94163	1106	918	61.80
3	4	West Bengal	91276115	0.1384	88752	1028	950	76.26
4	5	Andhra Pradesh	84580777	0.1098	275045	308	993	67.02

Plotting Choropleth Maps

STEP 3: Displaying Choropleth Map to show variation of population in different Indian states

- using px.choropleth() function of PLOTLY

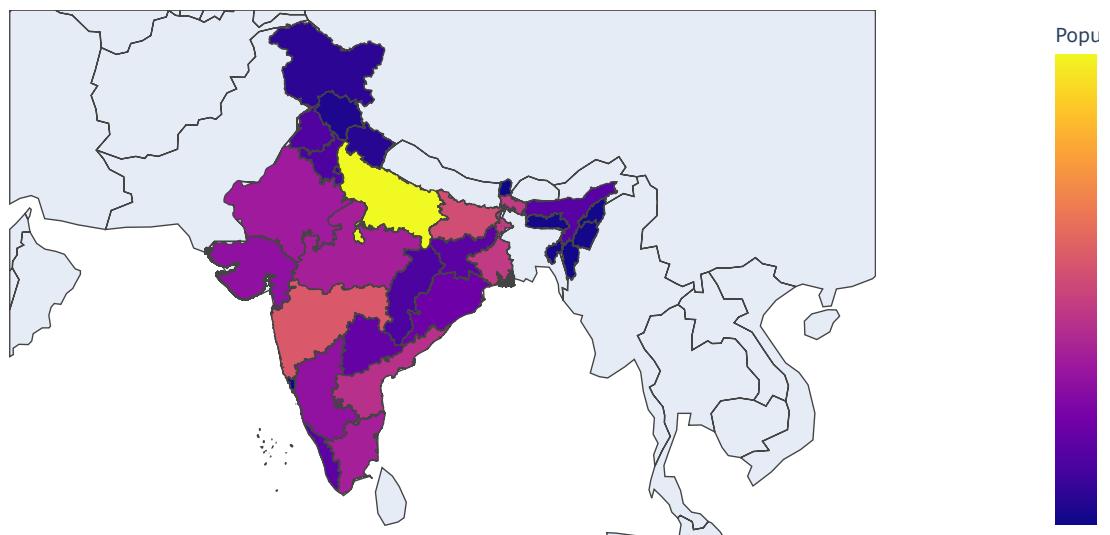
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import json
import pandas as pd
import plotly.express as px

INDIA_MAP=json.load(open('/content/states_india.geojson','r'))

INDIA_DATA=pd.read_csv('India-Population1.csv')

MAP=px.choropleth(INDIA_DATA,geojson=INDIA_MAP,
                  locations='State',
                  featureidkey="properties.st_nm",
                  color='Population',scope='asia',fitbounds='locations')

MAP.show()
```



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Plotting Choropleth Maps

ACTIVITY

Displaying Choropleth Map to show variation of Literacy Level in different Indian states

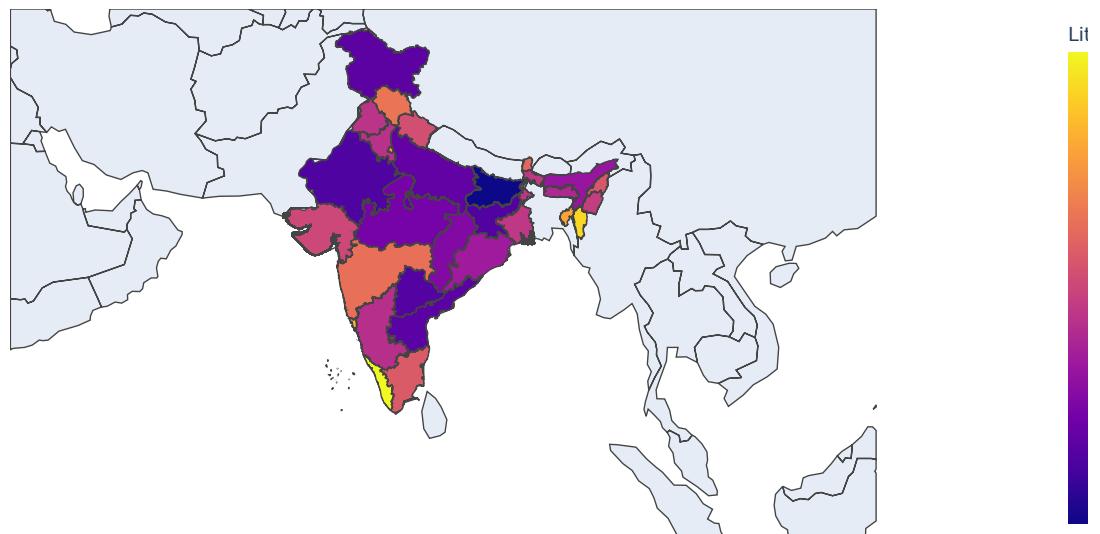
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```

```
MAP.show()
```



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