

Choropleth Maps Exercise

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1 Choropleth Maps Exercise

```
[1]: import plotly.graph_objs as go
      from plotly.offline import init_notebook_mode, iplot
      init_notebook_mode(connected=True)
```

```
[2]: import pandas as pd
```

1.1 Global Choropleth

```
[3]: df1 = pd.read_csv('2014_World_Power_Consumption')
```

```
[4]: df1.head()
```

```
[4]:
```

	Country	Power Consumption KWH	Text
0	China	5.523000e+12	China 5,523,000,000,000
1	United States	3.832000e+12	United 3,832,000,000,000
2	European	2.771000e+12	European 2,771,000,000,000
3	Russia	1.065000e+12	Russia 1,065,000,000,000
4	Japan	9.210000e+11	Japan 921,000,000,000

Create a Choropleth Interactive Plot of the Power Consumption for Countries.

```
[30]: data = dict(type = 'choropleth',
                  locations = df1['Country'],
                  locationmode = 'country names',
                  text = df1['Country'],
                  z = df1['Power Consumption KWH'],
                  colorscale = 'Picnic',
                  colorbar = {'title': 'Power Consumption KWH'}
                  )
      layout = dict(title = '2014 Power Consumption by Country',
                    geo = dict(showframe = False, projection = {'type': 'natural_↵
↵earth'})))
```

```
[31]: choromap = go.Figure(data = [data], layout = layout)
      iplot(choromap, validate=False)
```

1.2 USA Choropleth

```
[9]: df2 = pd.read_csv('2012_Election_Data')
```

```
[10]: df2.head()
```

```
[10]:
```

	Year	ICPSR State Code	Alphanumeric State Code	State \
0	2012	41	1	Alabama
1	2012	81	2	Alaska
2	2012	61	3	Arizona
3	2012	42	4	Arkansas
4	2012	71	5	California

	VEP Total Ballots Counted	VEP Highest Office VAP	Highest Office \
0	NaN	58.6%	56.0%
1	58.9%	58.7%	55.3%
2	53.0%	52.6%	46.5%
3	51.1%	50.7%	47.7%
4	55.7%	55.1%	45.1%

	Total Ballots Counted	Highest Office Voting-Eligible Population (VEP) \
0	NaN	2,074,338 3,539,217
1	301,694	300,495 511,792
2	2,323,579	2,306,559 4,387,900
3	1,078,548	1,069,468 2,109,847
4	13,202,158	13,038,547 23,681,837

	Voting-Age Population (VAP) % Non-citizen	Prison Probation Parole \
0	3707440.0 2.6%	32,232 57,993 8,616
1	543763.0 3.8%	5,633 7,173 1,882
2	4959270.0 9.9%	35,188 72,452 7,460
3	2242740.0 3.5%	14,471 30,122 23,372
4	28913129.0 17.4%	119,455 0 89,287

	Total Ineligible Felon State Abv
0	71,584 AL
1	11,317 AK
2	81,048 AZ
3	53,808 AR
4	208,742 CA

Create an interactive plot that displays the Voting-Age Population (VAP) per state.

```
[26]: data = dict(type = 'choropleth',  
                 locations = df2['State Abv'],  
                 locationmode = 'USA-states',  
                 text = df2['State'],  
                 z = df2['Voting-Age Population (VAP)'],
```

```
colorscale = 'Picnic',  
colorbar = {'title': 'Voting-Age Population'}  
)
```

```
[20]: layout = dict(title = 'Voting-age Population by State',  
                    geo = dict(scope = 'usa')  
                    )
```

```
[27]: choromap2 = go.Figure(data = [data], layout = layout)  
      iplot(choromap2, validate=False)
```