

## Plotting with Plotly

The dataset we will be using is [bloodpressure.csv collected from this site](#) and the python module will be [Plotly](#)

Useful sites:

- <https://plot.ly/python/ipython-notebook-tutorial/>
- <https://plot.ly/python/animations/>

**TASK:** read the csv file

**TASK:** First run the following code to see how animation works in plotly

```
import plotly.express as px
df = px.data.gapminder()
fig = px.scatter(df, x="gdpPercap", y="lifeExp", animation_frame="year", animation_group="country", color="continent", hover_name="country", log_x=True, size_max=45, range_x=[100,100000], range_y=[25,90])
fig.show()
```

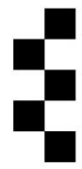
**TASK:** Now instead of gapminder data use the blood pressure dataframe data to create an animated scatter plot where x axis is 'SBP' and y axis is 'DBP'. Remember to change the range of x & y accordingly (min, max of the associated column). Report any interesting findings.

**TASK:** Rename the columns accordingly and drop/delete the following col 'Sex', 'Year', 'Prevalence of raised blood pressure'

```
'Country/Region/World' -> 'Country'
'Mean systolic blood pressure (mmHg)' -> 'SBP'
'Mean diastolic blood pressure (mmHg)' -> 'DBP'
```

Your dataframe should now contains the following columns

```
'Country', 'ISO', 'SBP', 'DBP'
```



**TASK:** Calculate the mean SBP & DBP for each country. Hint: use `groupby()` & `mean()`

**TASK:** save the averaged dataframe into a csv file

**TASK:** Read the transformed file

**TASK:** Create a new column with high ( $\geq 130$ ) and low SBP class

**TASK:** Create a [choropleth map](#) of world SBP suggested code

```
import plotly.express as px

df = px.data.gapminder().query("year==2007")
fig = px.choropleth(df, locations="iso_alpha",
                    color="lifeExp", # lifeExp is a column of gapminder
                    hover_name="country", # column to add to hover information
                    color_continuous_scale=px.colors.sequential.Plasma)

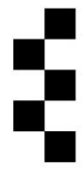
fig.show()
```

**TASK:** Map countries with **high** SBP only

**TASK:** [Create bar graphs](#) SBP & DBP for all countries with high BP. Suggested code

```
import plotly.graph_objects as go
animals=['giraffes', 'orangutans', 'monkeys']

fig = go.Figure(data=[
    go.Bar(name='SF Zoo', x=animals, y=[20, 14, 23]),
    go.Bar(name='LA Zoo', x=animals, y=[12, 18, 29])
])
# Change the bar mode
fig.update_layout(barmode='group')
fig.show()
```



**TASK:** Create a [pie chart](#) for high and low blood pressure using the following code

```
import plotly.express as px
# This dataframe has 244 lines, but 4 distinct values for `day`
df = px.data.tips()
fig = px.pie(df, values='tip', names='day')
fig.show()
```