University of Essex

Online

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 (>= 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()
```