Submission ¶

Put the ipynb file and html file in the github branch you created in the last assignment and submit the link to the commit in brightspace

In [1]:

```
from plotly.offline import init_notebook_mode
import plotly.io as pio
import plotly.express as px

init_notebook_mode(connected=True)
pio.renderers.default = "plotly_mimetype+notebook"
```

In [2]:

```
#load data
df = px.data.gapminder()
df.head()
```

Out[2]:

	country	continent	year	lifeExp	pop	gdpPercap	iso_alpha	iso_num
0	Afghanistan	Asia	1952	28.801	8425333	779.445314	AFG	4
1	Afghanistan	Asia	1957	30.332	9240934	820.853030	AFG	4
2	Afghanistan	Asia	1962	31.997	10267083	853.100710	AFG	4
3	Afghanistan	Asia	1967	34.020	11537966	836.197138	AFG	4
4	Afghanistan	Asia	1972	36.088	13079460	739.981106	AFG	4

Question 1:

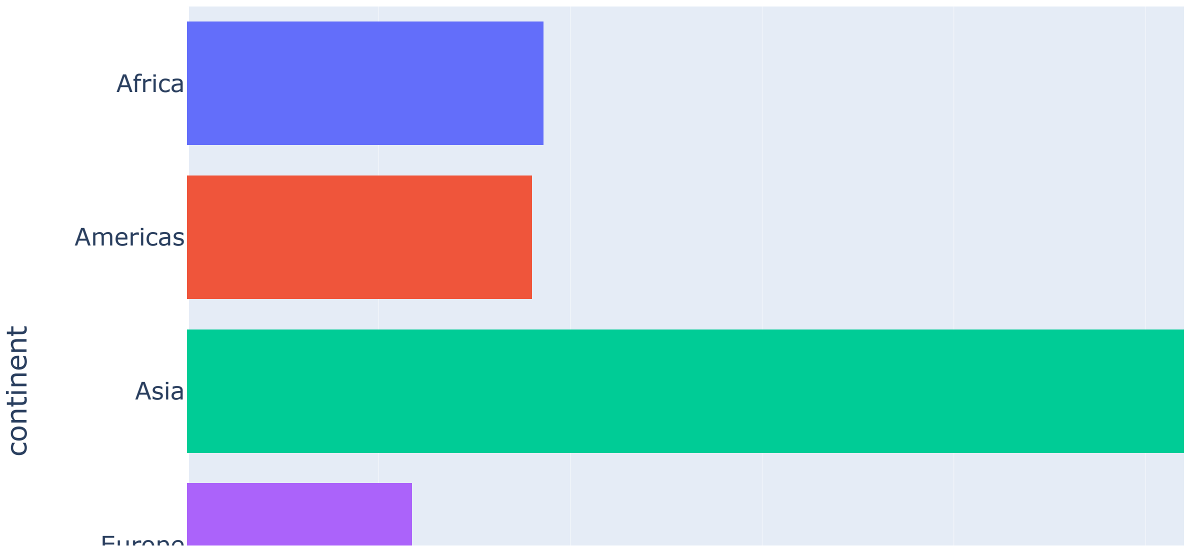
Recreate the barplot below that shows the population of different continents for the year 2007.

Hints:

- Extract the 2007 year data from the dataframe. You have to process the data accordingly
- use plotly bar (https://plotly.com/python-api-reference/generated/plotly.express.bar)
- Add different colors for different continents
- Sort the order of the continent for the visualisation. Use axis layout setting (https://plotly.com/python/reference/layout/xaxis/)
- Add text to each bar that represents the population

In [3]:

```
df = df[df['year'] == 2007]
fig = px.histogram(df,
                   x = 'pop',
                   y = 'continent',
                   color = 'continent',
                   category_orders={"continent": ["Africa", "Americas", "Asia", "Europe", "Oceania"]},
                  )
fig.update_layout(xaxis_title = 'pop', showlegend = False)
fig.show()
```



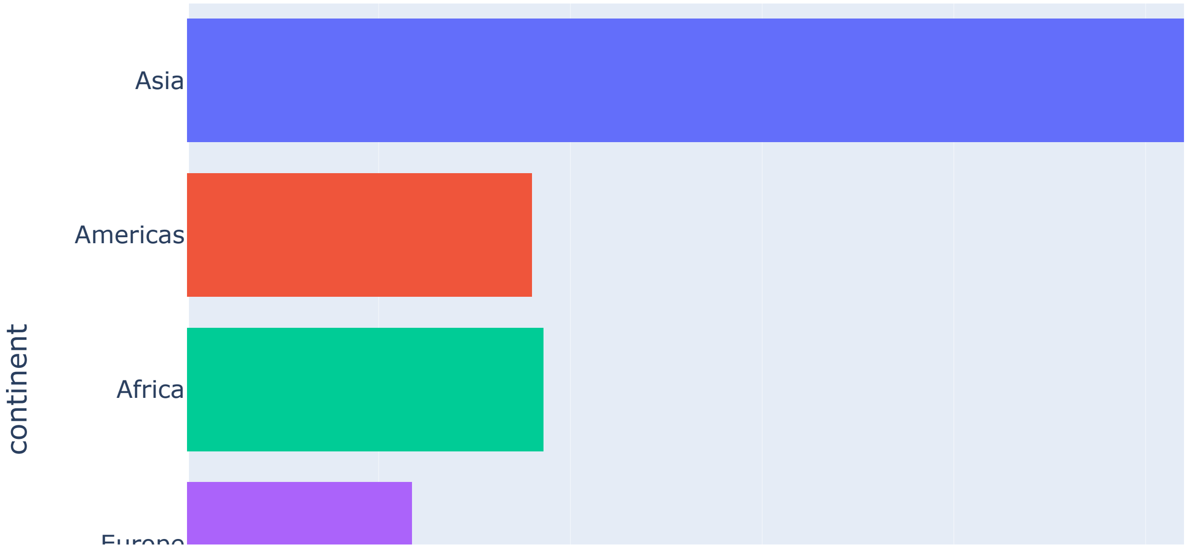
Question 2:

Sort the order of the continent for the visualisation

Hint: Use axis layout setting (https://plotly.com/python/reference/layout/xaxis/)

In [4]:

```
fig = px.histogram(df,
                   x = 'pop',
                   y = 'continent',
                   color = 'continent',
                   category_orders={"continent": ["Asia", "Americas", "Africa", "Europe", "Oceania"]},
                                   )
fig.update_layout(xaxis_title = 'pop', showlegend = False)
fig.show()
```

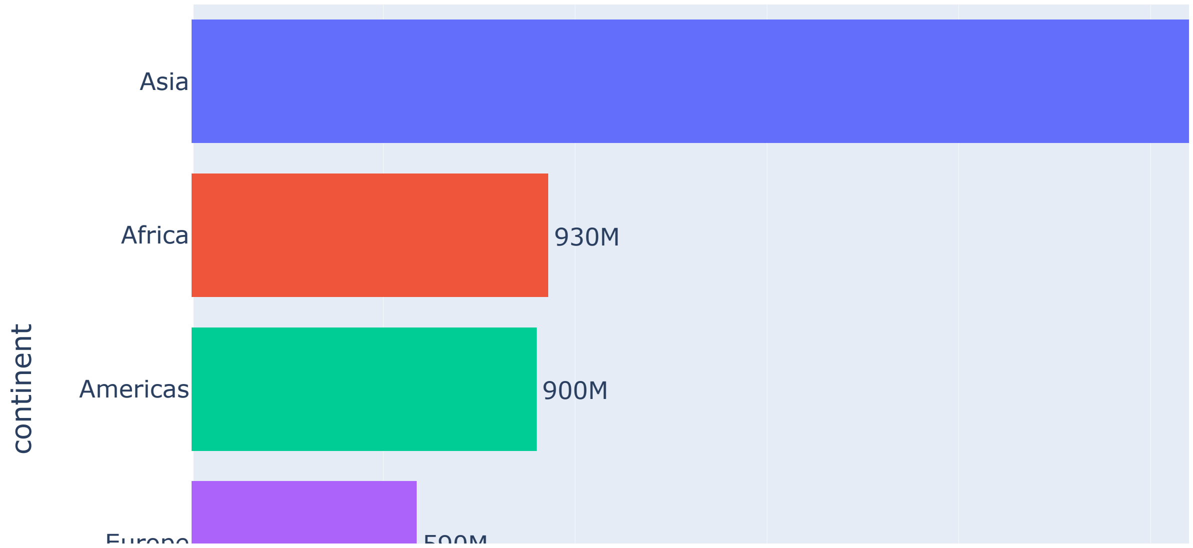


Question 3:

Add text to each bar that represents the population

In [5]:

```
fig = px.histogram(df,
                   x = 'pop',
                   y = 'continent',
                   color = 'continent',
                   category_orders={"continent": ["Asia", "Africa", "Americas", "Europe", "Oceania"]},
                   text_auto = '.2s'
                  )
fig.update_traces(textposition = 'outside')
fig.update_layout(xaxis_title = 'pop', showlegend = False)
fig.show()
```



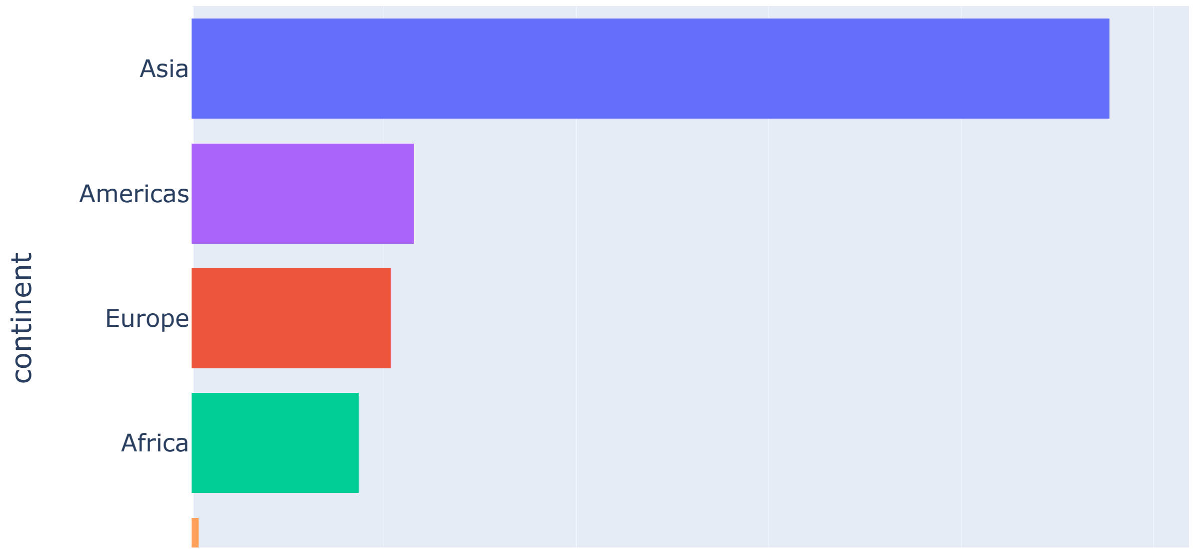
Question 4:

Thus far we looked at data from one year (2007). Lets create an animation to see the population growth of the continents through the years

In [34]:

```
df = px.data.gapminder()
fig = px.histogram(df, x="pop",
                   y="continent",
                   animation_frame="year",
                   animation_group="continent",
                   color="continent",
                   range_x=[0,4000000000],
                  ).update_yaxes(categoryorder="total ascending")

fig.update_layout(xaxis_title = 'pop', showlegend = False)
fig.show()
```



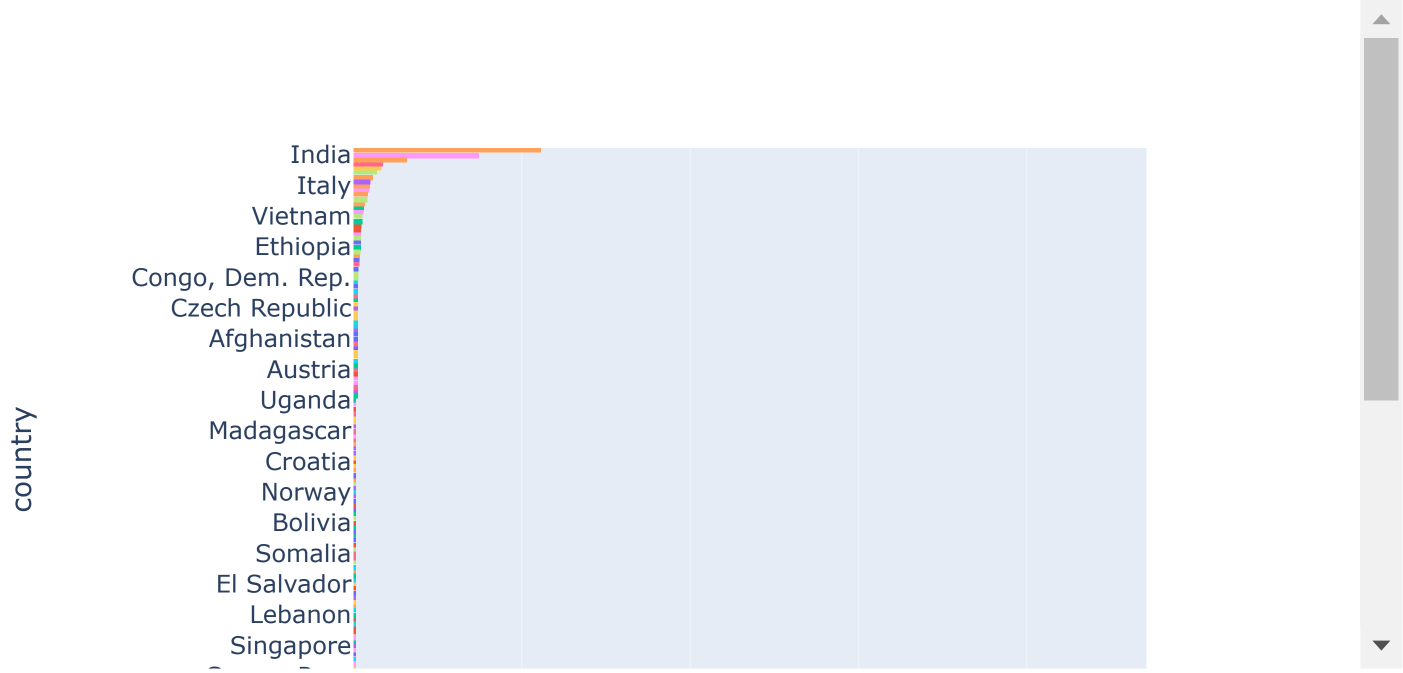
Question 5:

Instead of the continents, lets look at individual countries. Create an animation that shows the population growth of the countries through the years

In [12]:

```
df = px.data.gapminder()
fig = px.histogram(df, x="pop",
                   y="country",
                   animation_frame="year",
                   animation_group="country",
                   #size="pop",
                   color="country",
                   hover_name="country",
                   range_x=[0,4000000000],
                  ).update_yaxes(categoryorder="total ascending")

fig.update_layout(xaxis_title = 'pop', showlegend = False)
fig.show()
```



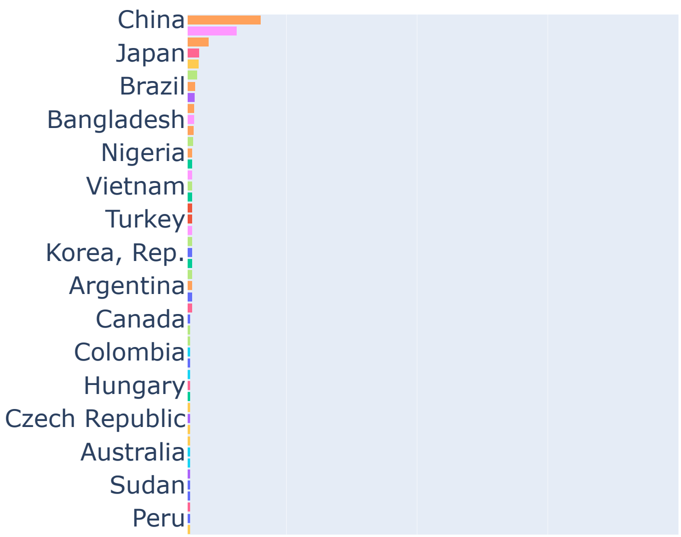
Question 6:

Clean up the country animation. Set the height size of the figure to 1000 to have a better view of the animation

In [16]:

```
df = px.data.gapminder()
fig = px.histogram(df, x="pop",
                   y="country",
                   animation_frame="year",
                   animation_group="country",
                   #size="pop",
                   color="country",
                   hover_name="country",
                   range_x=[0,4000000000],
                  ).update_yaxes(categoryorder="total ascending")

fig.update_layout(xaxis_title = 'pop', showlegend = False, autosize = False, width=500, height=1000)
fig.show()
```



Question 7:

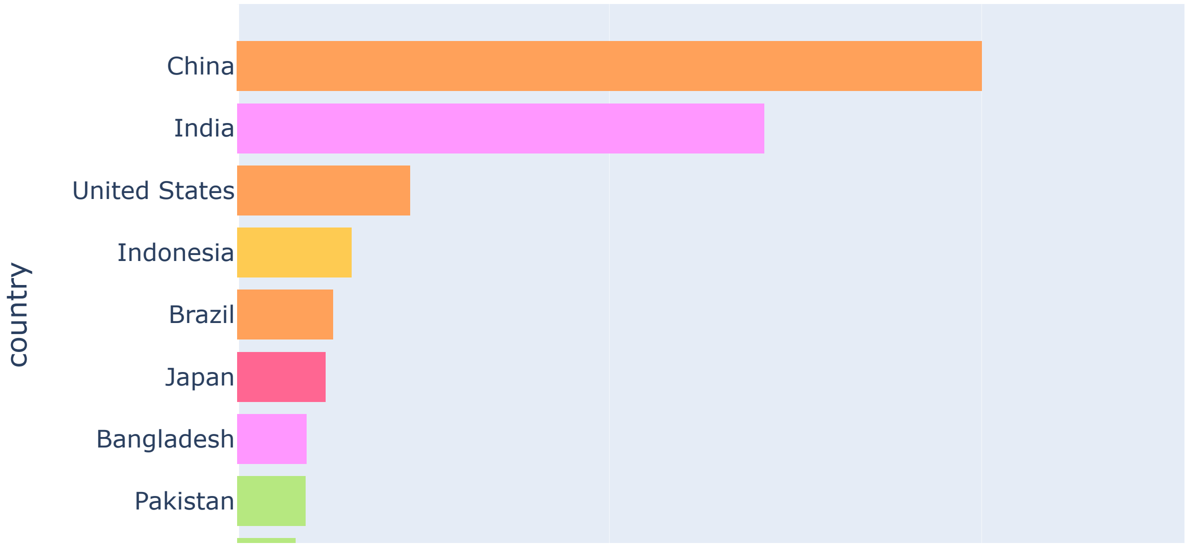
Show only the top 10 countries in the animation

Hint: Use the axis limit to set this.

In [50]:

```
df = px.data.gapminder()
fig = px.histogram(df, x="pop",
                   y="country",
                   animation_frame="year",
                   animation_group="country",
                   #size="pop",
                   color="country",
                   hover_name="country",
                   range_x=[0,2000000000],
                   range_y = [132, 142]
                  ).update_yaxes(categoryorder="total ascending")

fig.update_layout(xaxis_title = 'pop', showlegend = False)
fig.show()
```



In [46]:

```
142
```

In [ ]: