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

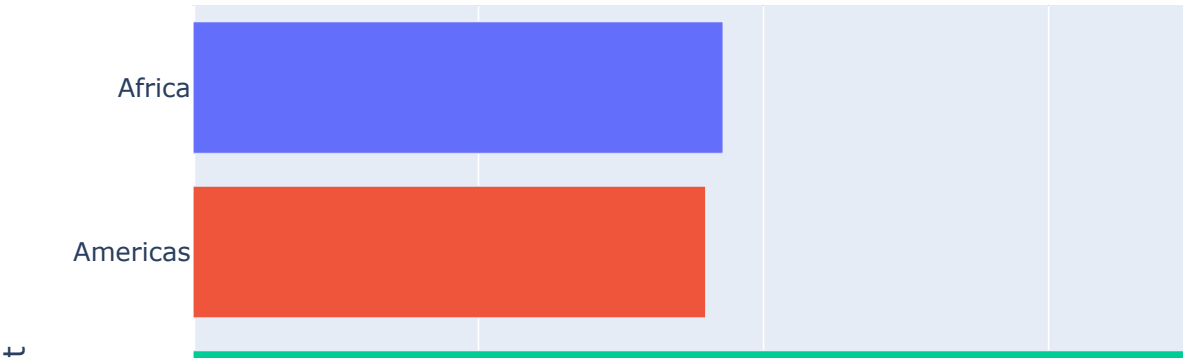
Question 1:

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
- Add different colors for different continents
- Sort the order of the continent for the visualisation. Use axis layout setting
- Add text to each bar that represents the population

In [19]:
```
# YOUR CODE HERE
df_2007 = df.query('year==2007')
df_2007_new = df_2007.groupby('continent').sum()
fig = px.bar(df_2007_new, x='pop', orientation='h', color=df_2007_new.ind
#df_2007_new = df_2007_new.sort_values('pop') orientation='h', color=df_2
#fig.update_xaxes(categoryorder="mean ascending" )
fig.show()
#df_2007_new.head()
```



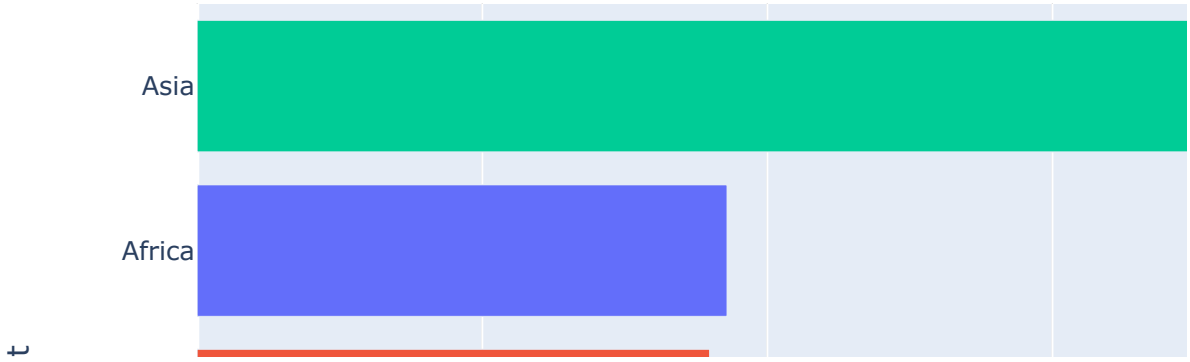
Question 2:

Sort the order of the continent for the visualisation

Hint: Use axis layout setting

In [49]:
```
# YOUR CODE HERE

df_2007 = df.query('year==2007')
df_2007_new = df_2007.groupby('continent').sum()
fig = px.bar(df_2007_new, x='pop', orientation='h', color=df_2007_new.ind
fig.update_layout(barmode='stack', yaxis={'categoryorder':'total ascendin
fig.show()
#df_2007_new.head()
```



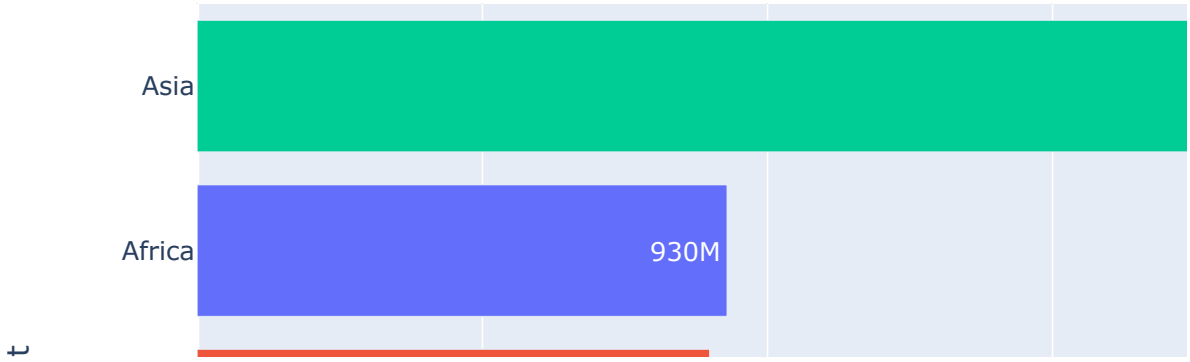
Question 3:

Add text to each bar that represents the population

In [48]:
```
# YOUR CODE HERE

df_2007 = df.query('year==2007')
df_2007_new = df_2007.groupby('continent').sum()
fig = px.bar(df_2007_new, x='pop', orientation='h', color=df_2007_new.ind
fig.update_layout(barmode='stack', yaxis={'categoryorder':'total ascendin
fig.show()

#df_2007_new.head()
```



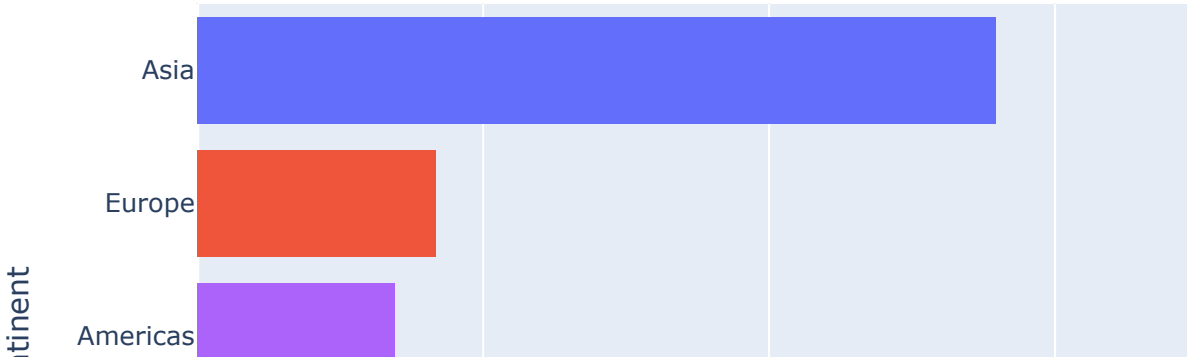
Question 4:

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 [60]:
```
# YOUR CODE HERE


df = px.data.gapminder()
fig = px.bar(df, y="continent", x="pop", animation_frame="year",
             color="continent", orientation='h', hover_name="country", ra
fig.update_layout(barmode='stack', yaxis={'categoryorder':'total ascendin
fig.update_traces(marker_line_width=0)

fig.show()
```



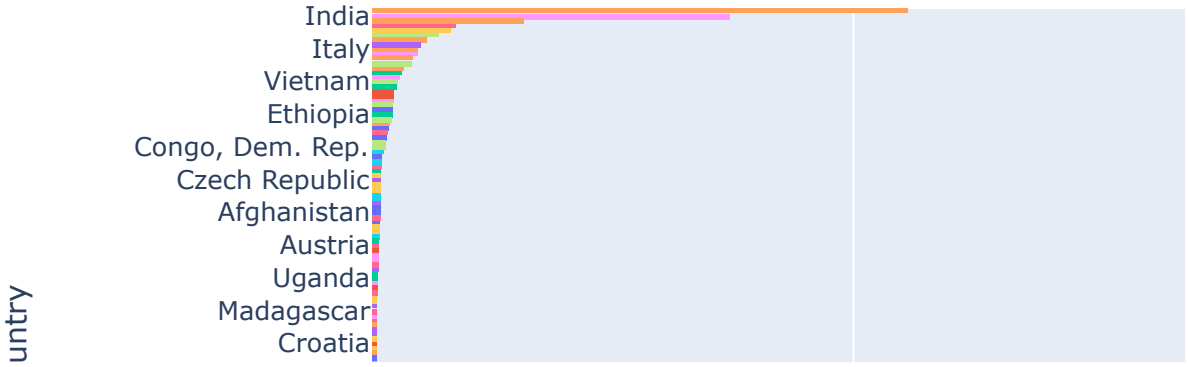
Question 5:

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

In [68]:
```
# YOUR CODE HERE


df = px.data.gapminder()
fig = px.bar(df, y="country", x="pop", animation_frame="year",
             color="country", range_x=[0,2000000000])
fig.update_layout(barmode='stack', yaxis={'categoryorder':'total ascendin
fig.update_traces(marker_line_width=0)

fig.show()
```



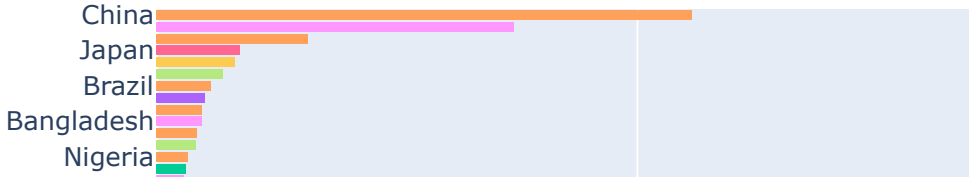
Question 6:

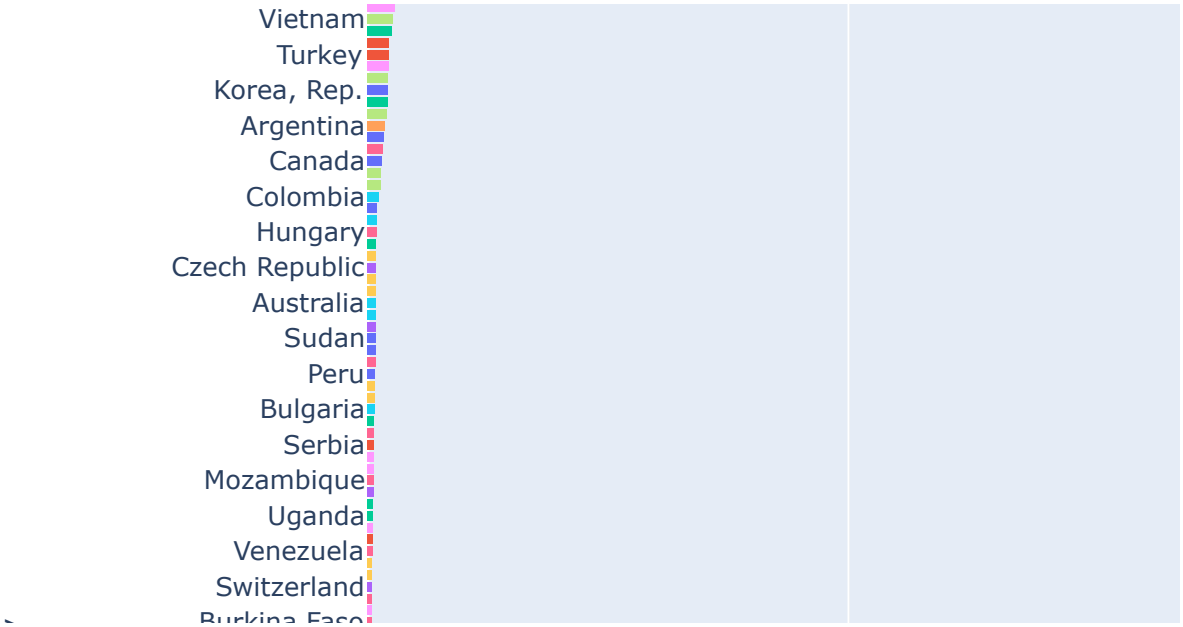
Clean up the country animation. Set the height size of the figure to 1000 to have a better view of the animation

In [69]:
```
# YOUR CODE HERE


df = px.data.gapminder()
fig = px.bar(df, y="country", x="pop", animation_frame="year",
             color="country", range_x=[0,2000000000], height=1000)
fig.update_layout(barmode='stack', yaxis={'categoryorder':'total ascendin
fig.update_traces(marker_line_width=0)

fig.show()
```




Vietnam
Turkey
Korea, Rep.
Argentina
Canada
Colombia
Hungary
Czech Republic
Australia
Sudan
Peru
Bulgaria
Serbia
Mozambique
Uganda
Venezuela
Switzerland
Burkina Faso

Question 7:

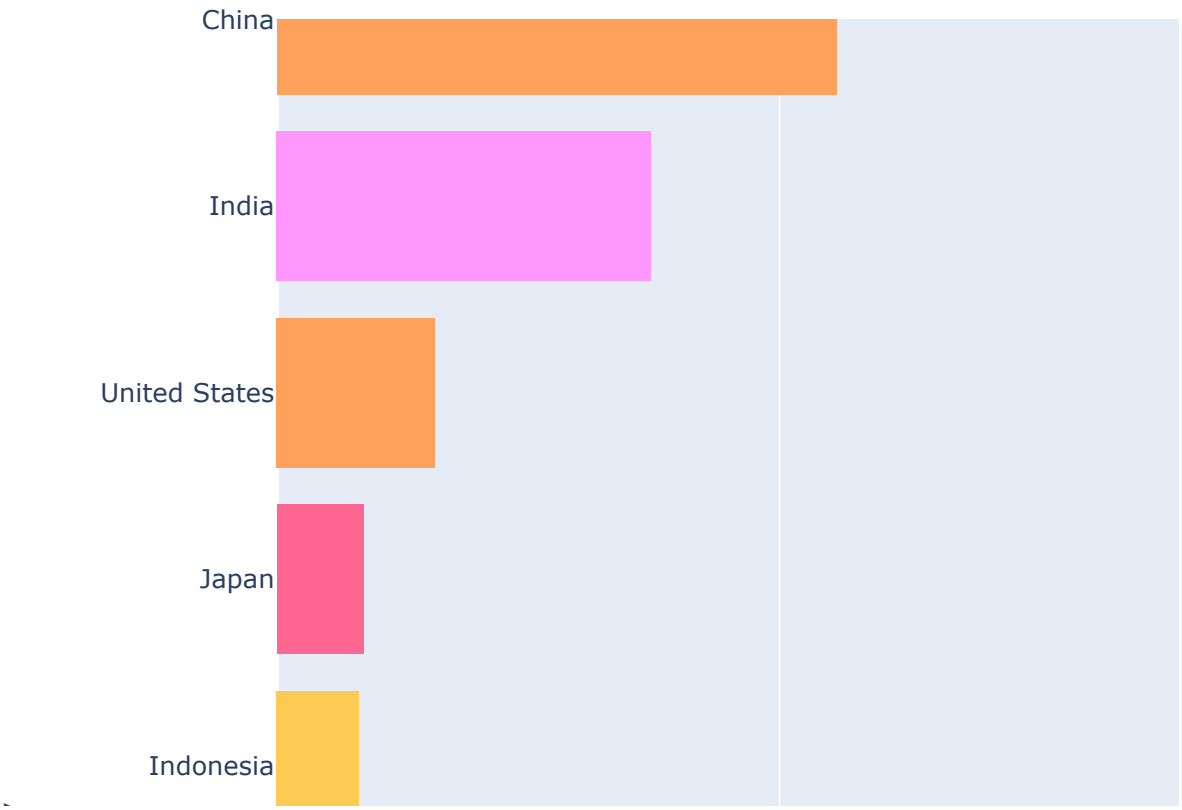
Show only the top 10 countries in the animation

Hint: Use the axis limit to set this.

In [70]:
```
# YOUR CODE HERE

df = px.data.gapminder()
fig = px.bar(df, y="country",
             x="pop",
             animation_frame="year",
             animation_group="country",
             color="country",
             range_x=[0,2000000000],
             range_y=[132,141],
             height=1000)
fig.update_layout(barmode='stack', yaxis={'categoryorder':'total ascendin
fig.update_traces(marker_line_width=0)

fig.show()
```



In [ ]: