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 [7]:

```
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 [37]:

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

Out[37]:

	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:

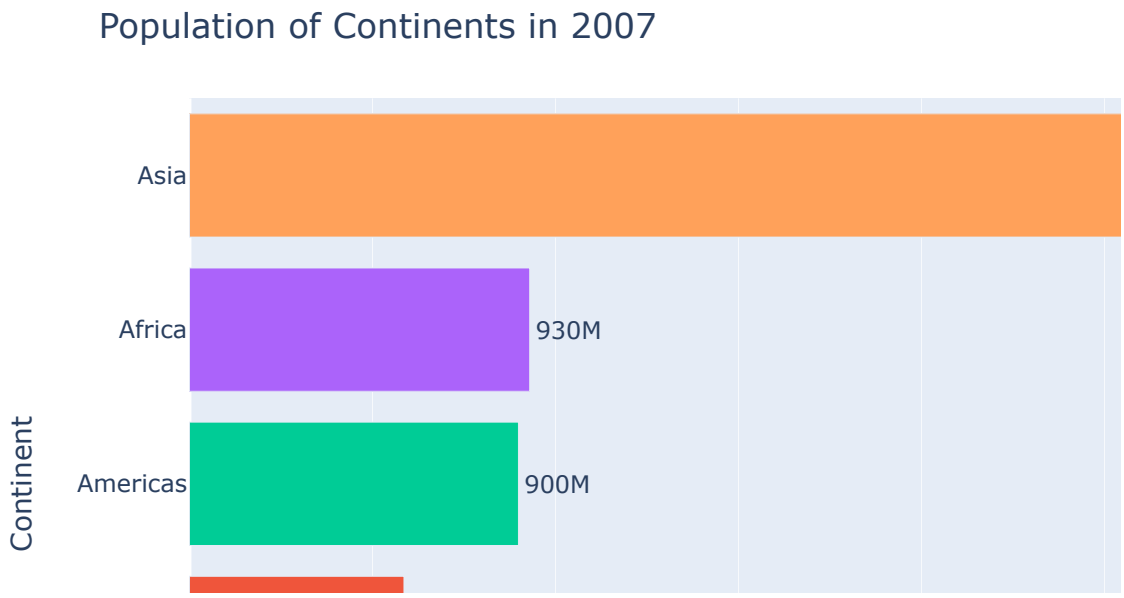
Recreate the barplot below that shows the population of different continents for the year 2007.

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 [27]:

```
# YOUR CODE HERE

df_2007 = df[df['year']== 2007]
df_2007_new = df_2007.groupby('continent').sum(numeric_only=True)
df_2007_new = df_2007_new.sort_values(by='pop', ascending=True)


fig = px.bar(df_2007_new, x="pop", y=df_2007_new.index, orientation='h', color=df_2007_


fig.update_yaxes(categoryorder='total ascending')

fig.update_layout(
    title="Population of Continents in 2007",
    xaxis_title="Population",
    yaxis_title="Continent",
)

fig.update_traces(
 texttemplate='%{value:.2s}',
 textposition='outside'
)

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 [6]:

```
# YOUR CODE HERE

#see question 1
```

Question 3:

Add text to each bar that represents the population

In [7]:

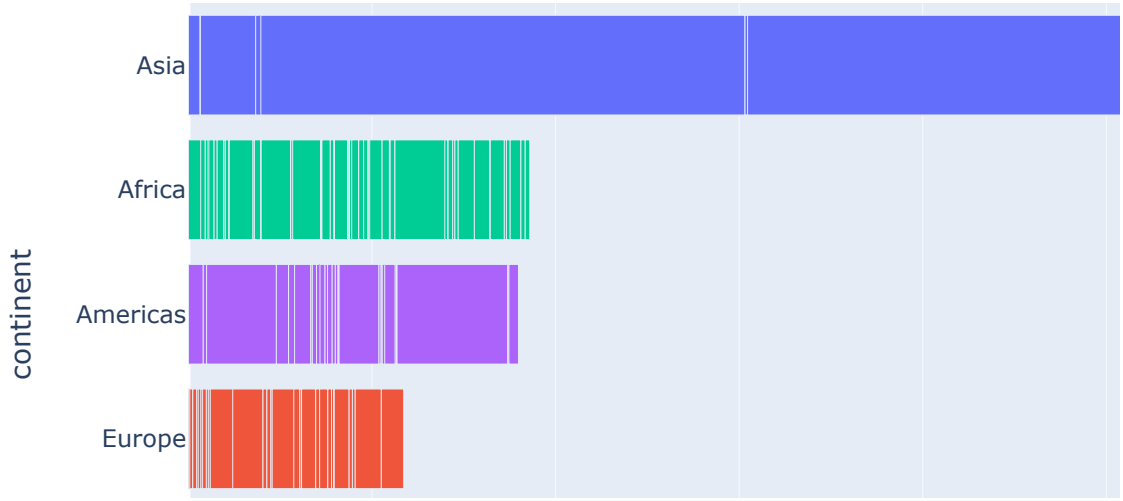
```
# YOUR CODE HERE

#see question 1
```

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 [45]:

```
# YOUR CODE HERE
df = px.data.gapminder()
df_new = df.groupby('continent').sum(numeric_only=True)
fig = px.bar(df, x="pop", y='continent' , animation_frame='year', animation_group='cou
            'continent')
fig.update_yaxes(categoryorder='total ascending')

fig.show()
```

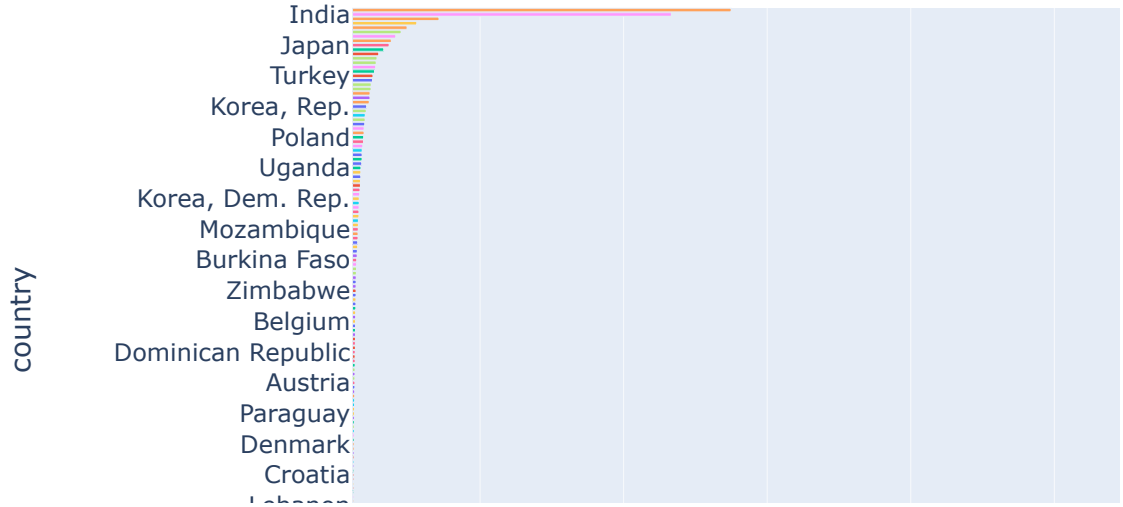


Question 5:

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

In [48]:

```
# YOUR CODE HERE

fig = px.bar(df, x="pop", y='country' , animation_frame='year', animation_group='countr
             'country')
fig.update_yaxes(categoryorder='total ascending')

fig.show()
```

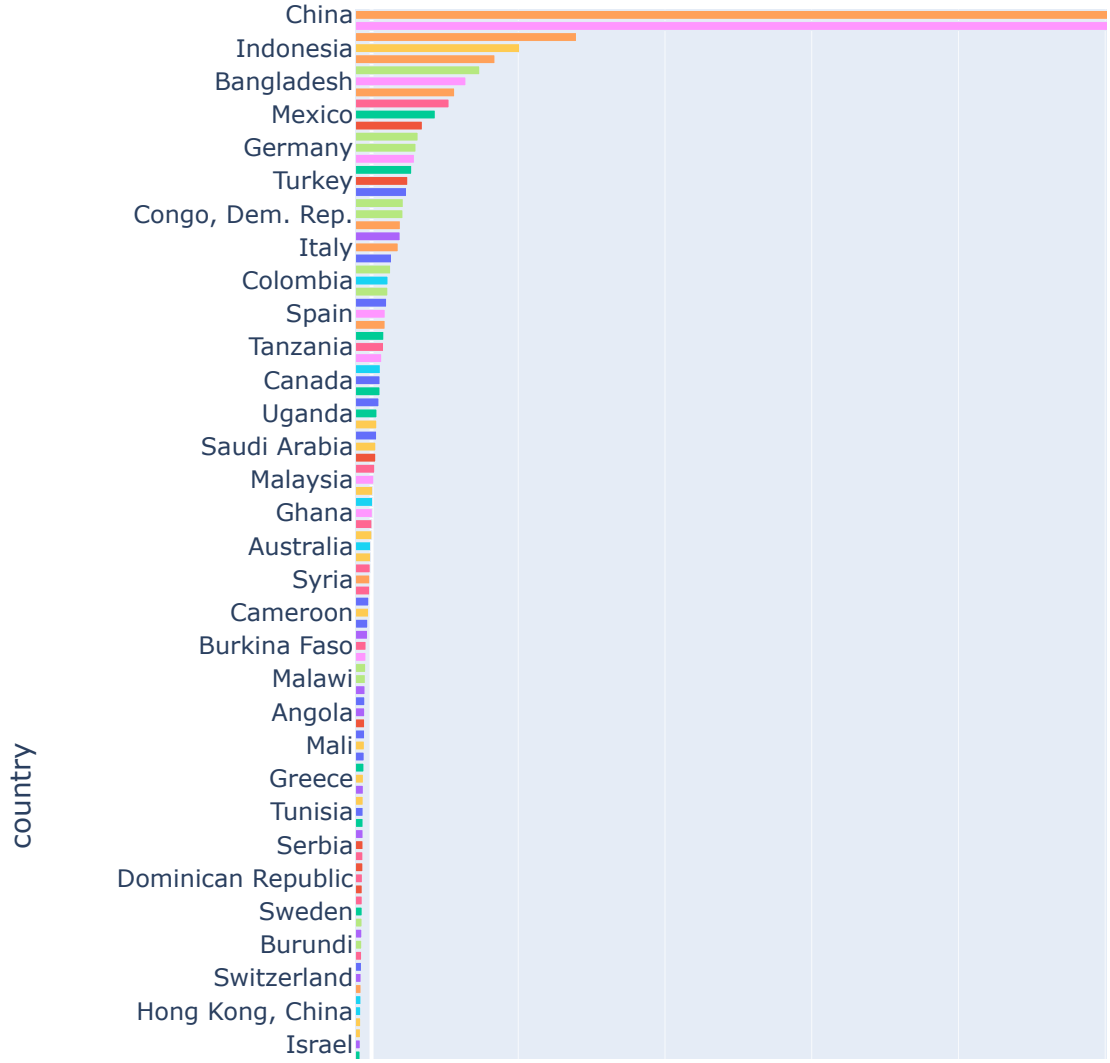


Question 6:

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

In [52]:

```
# YOUR CODE HERE
fig = px.bar(df, x="pop", y='country' , animation_frame='year', animation_group='countr
            'country', height=1000)
fig.update_yaxes(categoryorder='total ascending')

fig.show()
```


country
China
Indonesia
Bangladesh
Mexico
Germany
Turkey
Congo, Dem. Rep.
Italy
Colombia
Spain
Tanzania
Canada
Uganda
Saudi Arabia
Malaysia
Ghana
Australia
Syria
Cameroon
Burkina Faso
Malawi
Angola
Mali
Greece
Tunisia
Serbia
Dominican Republic
Sweden
Burundi
Switzerland
Hong Kong, China
Israel

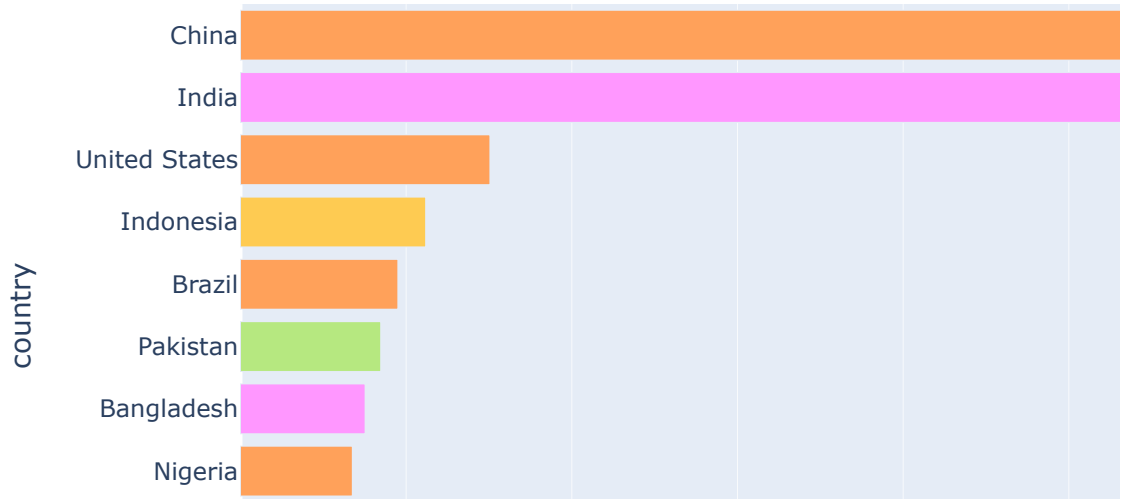
Question 7:

Show only the top 10 countries in the animation

Hint: Use the axis limit to set this.

In [57]:

```
# YOUR CODE HERE

fig = px.bar(df, x="pop", y='country' , animation_frame='year', animation_group='countr
            'country', range_y=[131.5,141.5])
fig.update_yaxes(categoryorder='total ascending')
fig.show()
```



In [ ]: