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 [2]:

```
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 [3]:

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

Out[3]:

	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

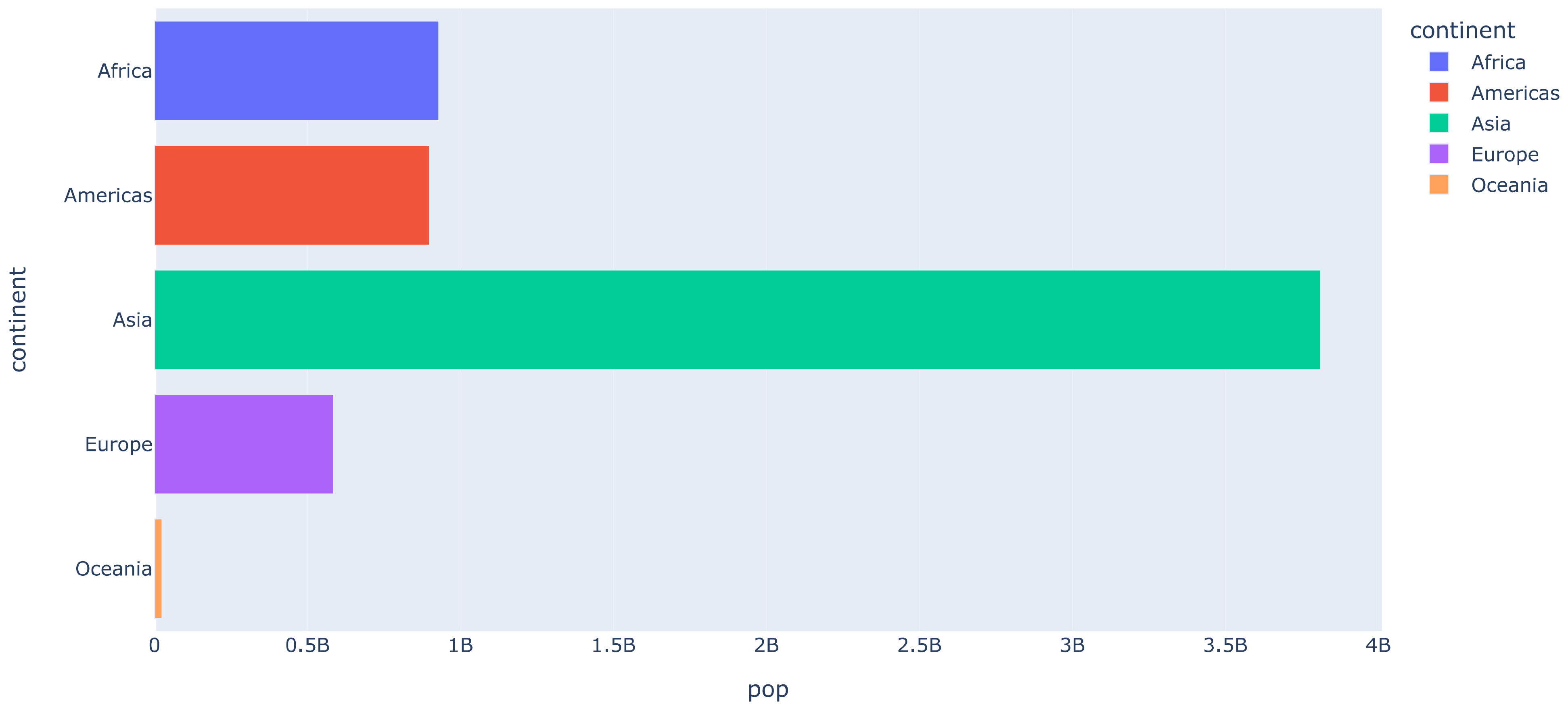
Question 1:

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 [15]:
```
df_2007 = df.query('year == 2007')
df_2007_new = df_2007.groupby('continent').sum()
fig = px.bar(df_2007_new, x='pop', y=df_2007_new.index, orientation = 'h', color = df_2007_new.index)
fig.show()
```



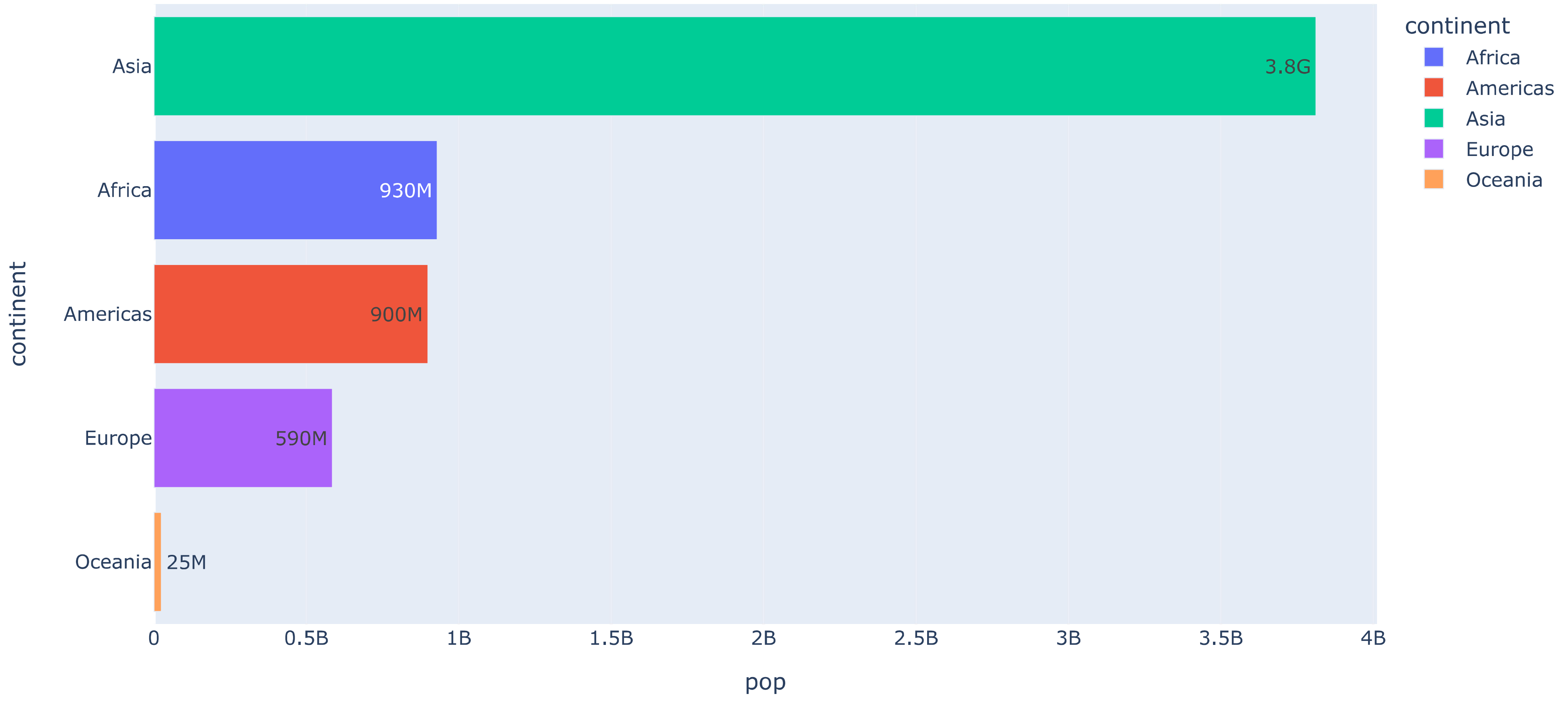
Question 2:

Sort the order of the continent for the visualisation

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

In [14]:

```
fig.update_layout(yaxis={'categoryorder': 'total ascending'})
fig.show()
```

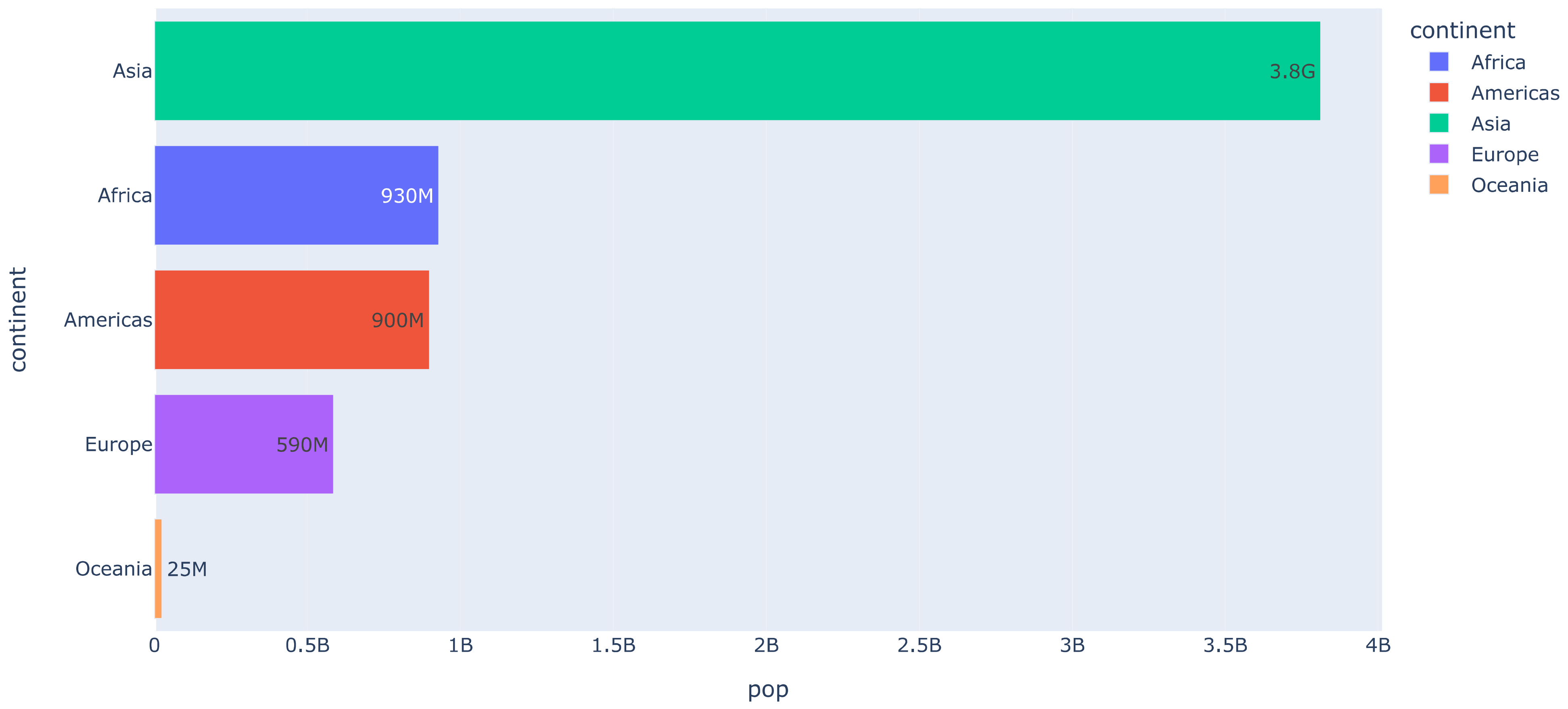


Question 3:

Add text to each bar that represents the population

In [17]:

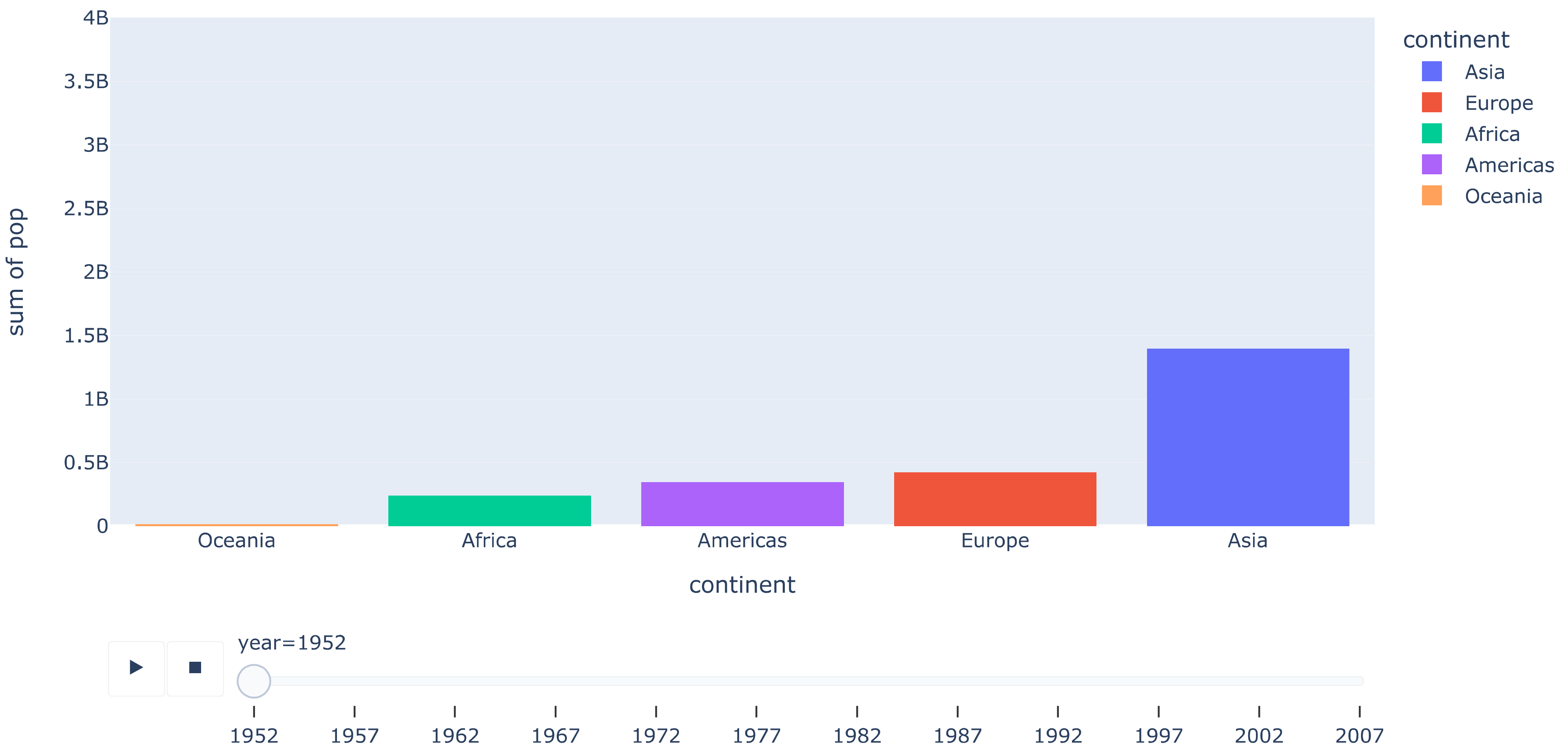
```
# YOUR CODE HERE
fig = px.bar(df_2007_new, x='pop', y=df_2007_new.index, orientation = 'h', color = df_2007_new.index, text_auto='.2s')
fig.update_layout(yaxis={'categoryorder': 'total ascending'})
fig.show()
```



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

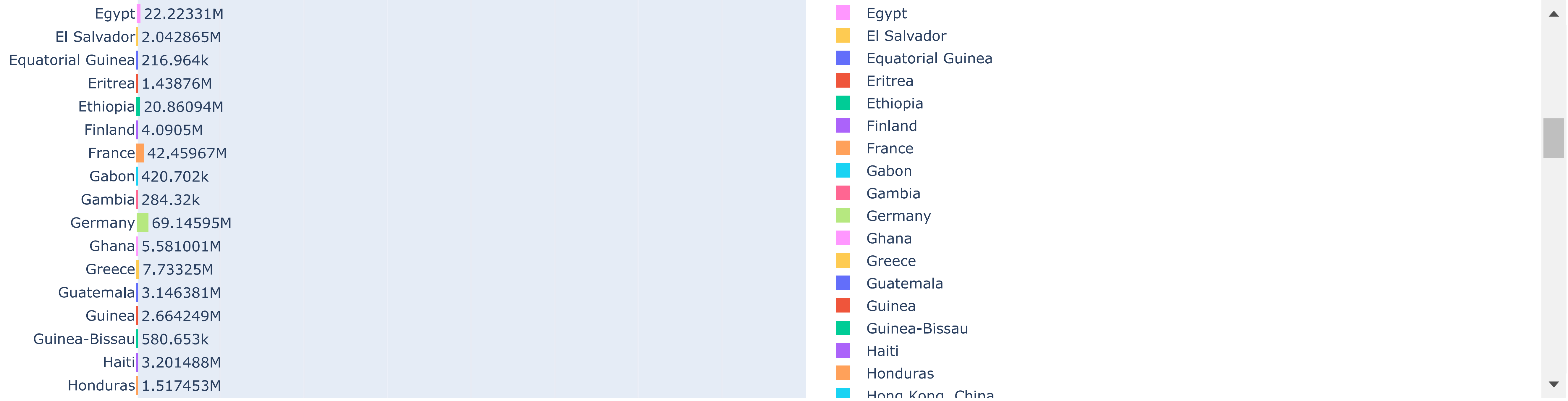
In [22]:
```
# YOUR CODE HERE
fig = px.histogram(df, y='pop', x='continent', animation_frame='year', color='continent', range_y=[0, 4*10**9])
fig.update_layout(xaxis={'categoryorder': 'total ascending'})
fig.show()
```



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 [58]:
```
fig = px.histogram(df, x='pop', y='country', animation_frame='year', color='country', range_x=[0, 4*10**9], height=3000, text_auto=True)
fig.update_layout(xaxis={'categoryorder': 'total ascending'})
fig.show()
```



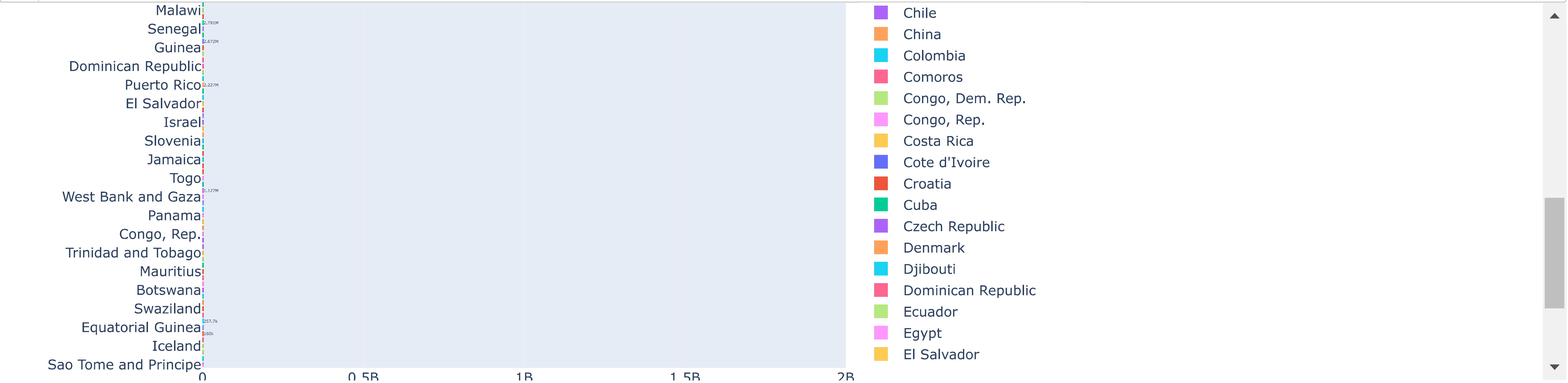
Question 6:

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

In [90]:

```python
fig = px.histogram(df,
                   x='pop',
                   y='country',
                   animation_frame='year',
                   color='country',
                   range_x=[0, 2*10**9],
                   height=1000,
                   text_auto=True
                  )

fig.update_layout(yaxis={'categoryorder': 'total ascending'})
fig.show()
```



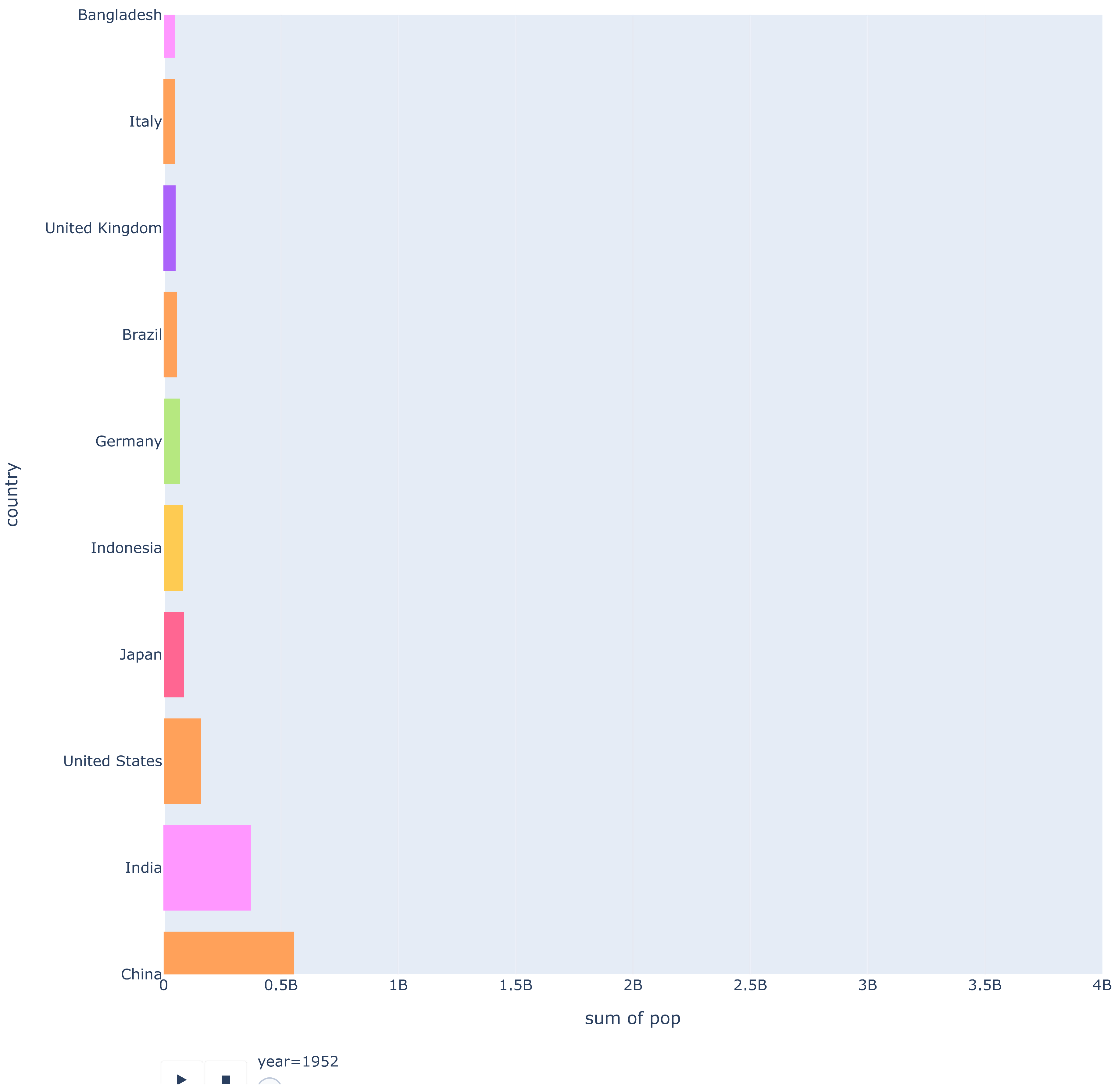
Question 7:

Show only the top 10 countries in the animation

Hint: Use the axis limit to set this.

In [101]:

```
fig = px.histogram(df, x='pop', y='country', animation_frame='year', color='country', range_x=[0, 4*10**9], height=1000)
fig.update_layout(yaxis={'categoryorder': 'total descending'})
fig.update_yaxes(range=(0,9))
fig.update_layout(showlegend=False)
fig.show()
```



In [ ]: