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

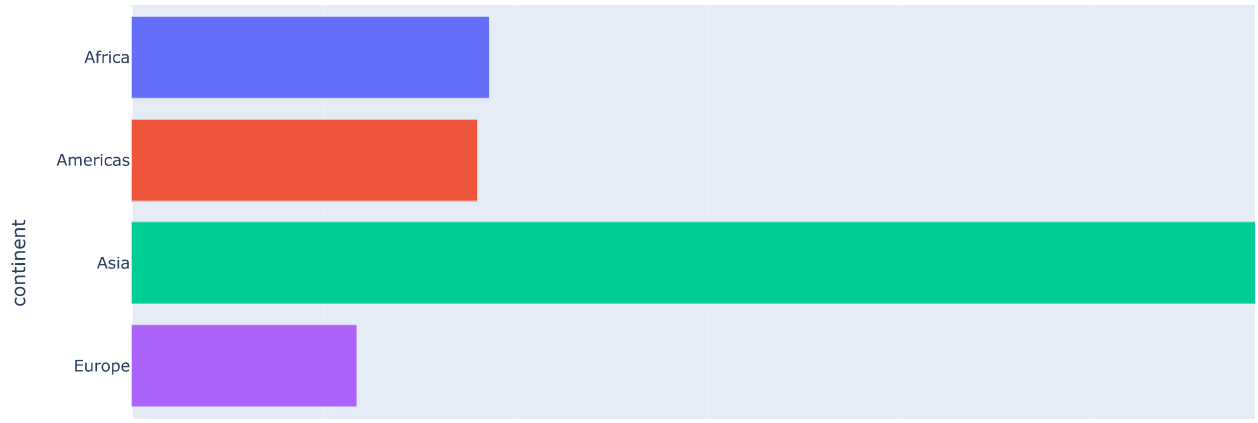
In [3]:
```
# YOUR CODE HERE
df_2007 = df.query('year==2007')
df_2007_new = df_2007.groupby('continent').sum()

fig = px.bar(df_2007_new, x='pop', y=df_2007_new.index,
             orientation='h', color=df_2007_new.index)
fig.update_layout(showlegend=False)

fig.show()
```

```
C:\Users\SID-DRW\AppData\Local\Temp\ipykernel_21952\3815357757.py:3: FutureWarning:

The default value of numeric_only in DataFrameGroupBy.sum is deprecated. In a future version, numeric_only will default to False. Ei
ther specify numeric_only or select only columns which should be valid for the function.
```

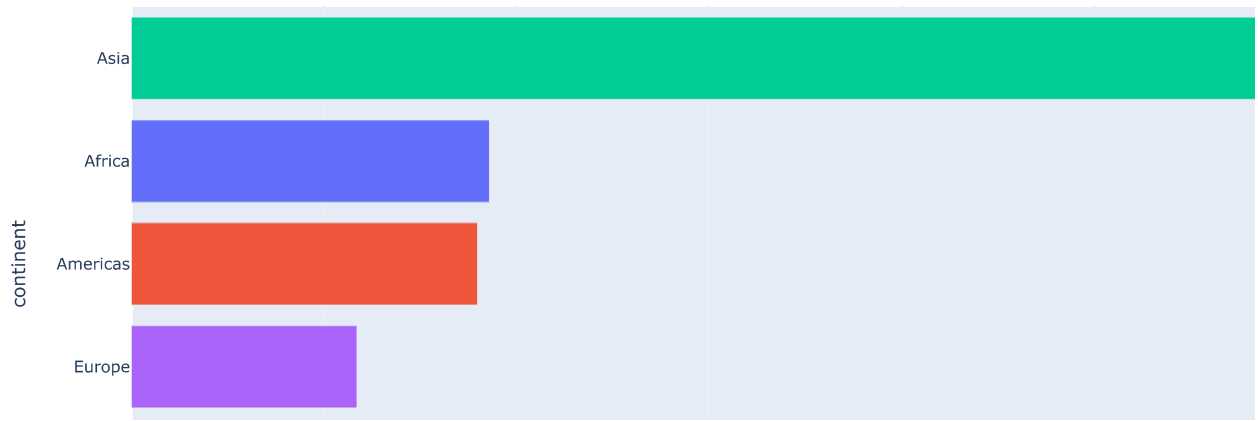


Question 2:

Sort the order of the continent for the visualisation

Hint: Use axis layout setting

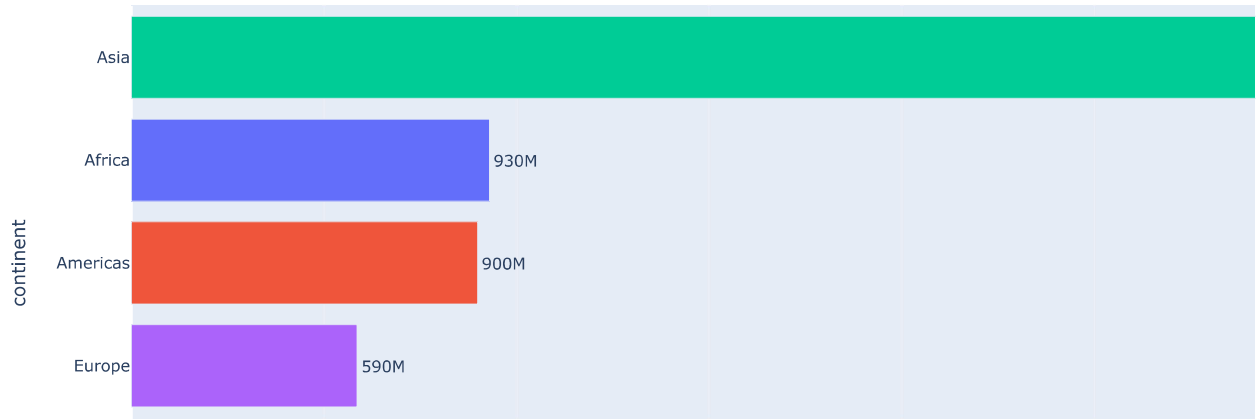
In [4]:
```
# YOUR CODE HERE
fig = fig.update_yaxes(categoryorder = 'total ascending')
fig.show()
```



Question 3:

Add text to each bar that represents the population

In [5]:
```
# YOUR CODE HERE
fig.update_traces(texttemplate = '%{x:.2s}', textposition = 'outside')
```

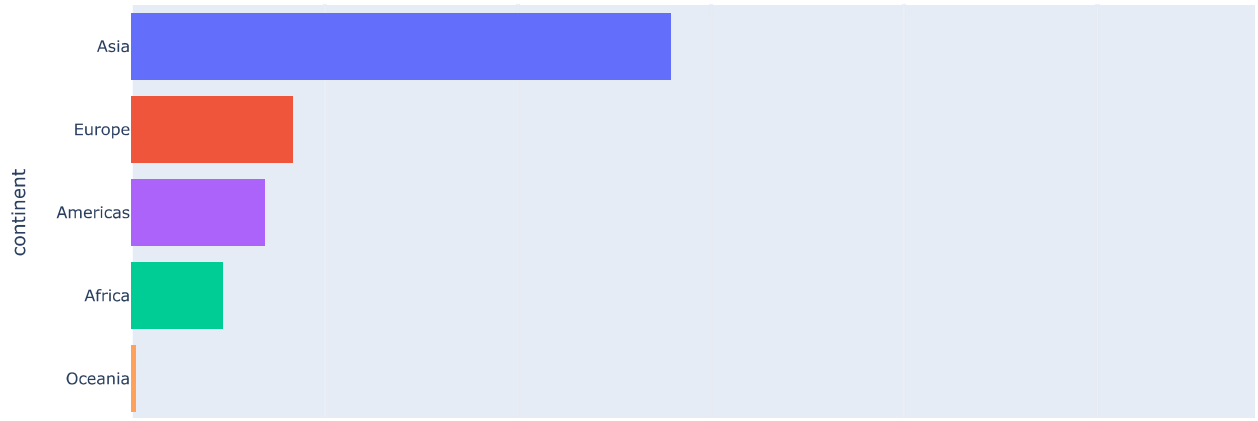


Question 4:

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 [6]:
```
# YOUR CODE HERE
fig = px.histogram(df, x="pop", y='continent', animation_group='continent', animation_frame = 'year', color='continent', range_x=[0,4
fig.update_layout(showlegend=False)
fig = 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 [7]:
```
# YOUR CODE HERE
```

Question 6:

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

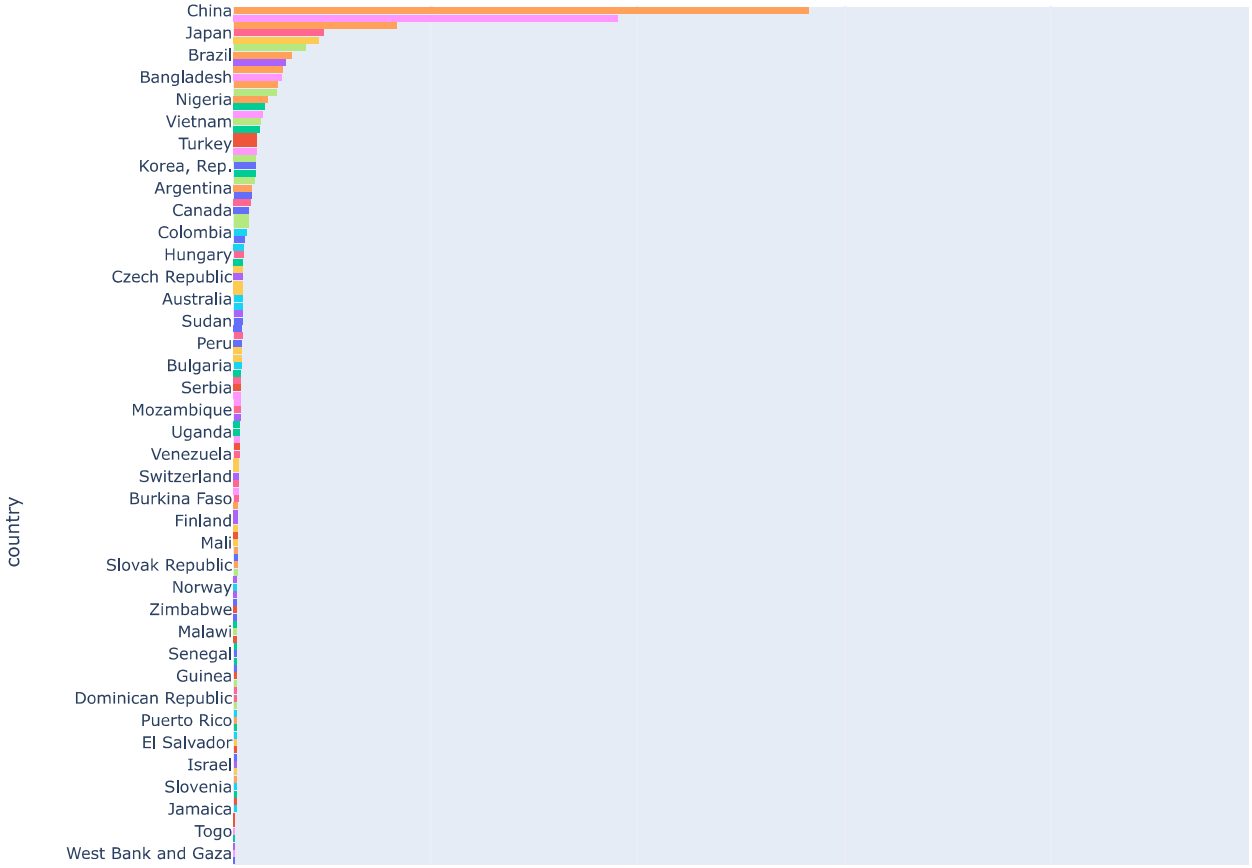
In [8]:
```
# YOUR CODE HERE
df_new = df.groupby('country').sum()
```

```
fig = px.histogram(df, x="pop", y='country', animation_group='country', animation_frame = 'year', color='country', range_x=[0,1400000
fig.update_layout(showlegend=False)
fig = fig.update_yaxes(categoryorder = 'total ascending')

fig.show()
```

```
C:\Users\SID-DRW\AppData\Local\Temp\ipykernel_21952\1020674411.py:2: FutureWarning:

The default value of numeric_only in DataFrameGroupBy.sum is deprecated. In a future version, numeric_only will default to False. Ei
ther specify numeric_only or select only columns which should be valid for the function.
```

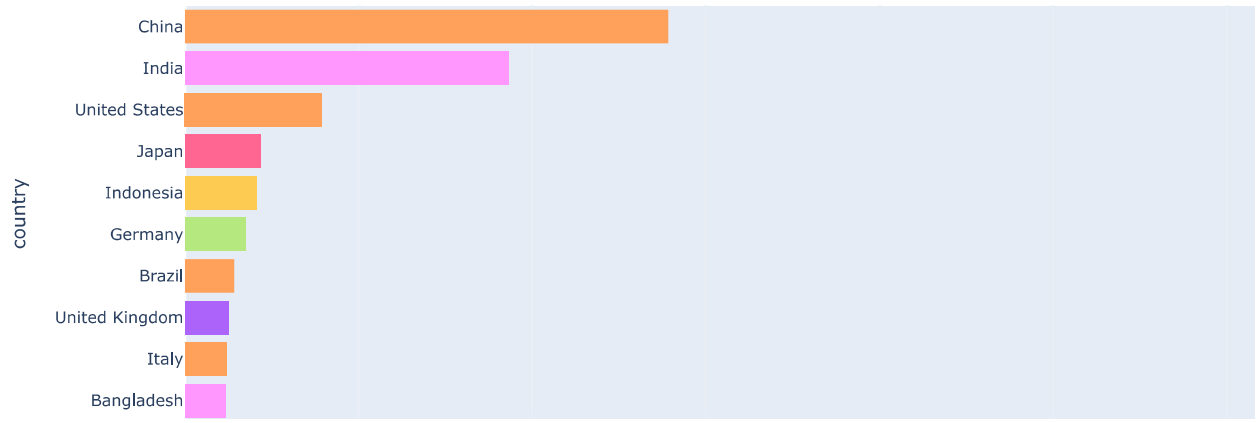


Question 7:

Show only the top 10 countries in the animation

Hint: Use the axis limit to set this.

In [9]:
```
# YOUR CODE HERE
fig = px.histogram(df, x="pop", y='country', animation_group='country', animation_frame = 'year', orientation = "h",
           color='country',range_y=[131.5,141.5], range_x = [0,1500000000])
fig.update_yaxes(categoryorder='max ascending')
fig.show()
```


China
India
United States
Japan
Indonesia
Germany
Brazil
United Kingdom
Italy
Bangladesh
country

In [ ]: