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:

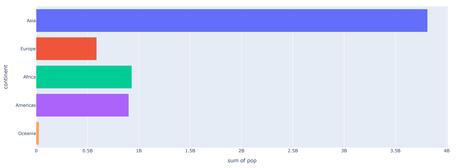
Recreate the barplot below that shows the population of different continents for the year 2007.

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_world = px.data.gapminder()
data_year = df_world.query('year==2007')

fig = px.histogram(data_year, x='pop', y='continent', orientation='h', color='continent')
fig.update_layout(showlegend=False)
fig.show()
```



Question 2:

Sort the order of the continent for the visualisation

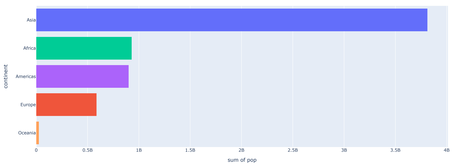
Hint: Use axis layout setting

In [11]:
```
# YOUR CODE HERE
df_world = px.data.gapminder()
data_year = df_world.query('year==2007')

fig = px.histogram(data_year, x='pop', y='continent', orientation='h', color='continent')

fig.update_layout(showlegend=False, yaxis={'categoryorder':'total ascending'})

fig.show()
```



Question 3:

Add text to each bar that represents the population

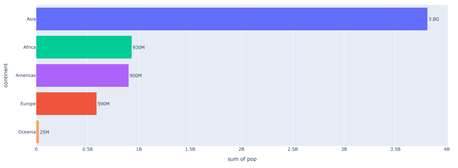
In [12]:
```
# YOUR CODE HERE
df_world = px.data.gapminder()
data_year = df_world.query('year==2007')

fig = px.histogram(data_year, x='pop', y='continent', orientation='h', color='continent')

fig.update_layout(showlegend=False, yaxis={'categoryorder':'total ascending'})

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

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

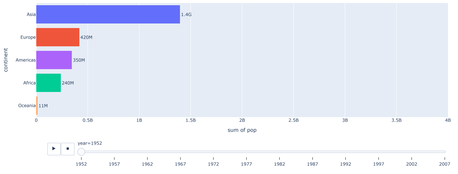
In [19]:
```
# YOUR CODE HERE
df_world = px.data.gapminder()

fig = px.histogram(df_world, x='pop', y='continent', orientation='h', animation_frame='year', color='continent', range_x=[0,4000000000])

fig.update_layout(showlegend=False, yaxis={'categoryorder':'total ascending'})

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

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

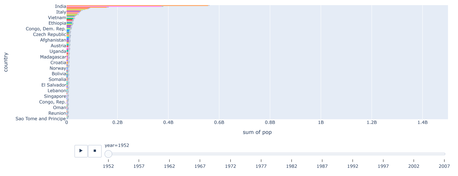
In [20]:
```
# YOUR CODE HERE
df_world = px.data.gapminder()

fig = px.histogram(df_world, x='pop', y='country', orientation='h', animation_frame='year', color='country', range_x=[0,1500000000])

fig.update_layout(showlegend=False, yaxis={'categoryorder':'total ascending'})

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

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

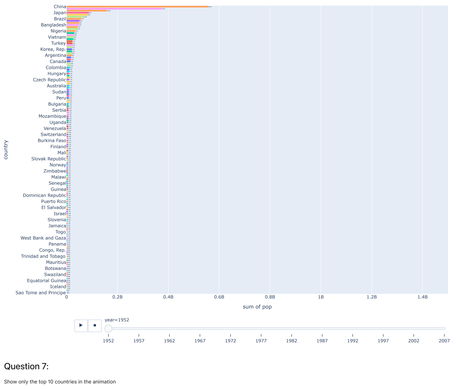
In [28]:
```
# YOUR CODE HERE
df_world = px.data.gapminder()

fig = px.histogram(df_world, x='pop', y='country', orientation='h', animation_frame='year', color='country', range_x=[0,1500000000])

fig.update_layout(showlegend=False, yaxis={'categoryorder':'total ascending'}, height=1000)

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

fig.show()
```



Question 7:

Show only the top 10 countries in the animation

Hint: Use the axis limit to set this.

In [25]:
```
df['country'].describe()
```

Out[25]:
```
count          1704
unique          142
top     Afghanistan
freq             12
Name: country, dtype: object
```

In [38]:
```
# YOUR CODE HERE
df_world = px.data.gapminder()

fig = px.histogram(df_world, x='pop', y='country', orientation='h', animation_frame='year', color='country', range_x=[0,1500000000], range_y=[132,141])

fig.update_layout(showlegend=False, yaxis={'categoryorder':'total ascending'})

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

fig.show()
```