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DSC 640

Assignment 2.2

24 September 2020

- line plot
- step plot

In [1]:
```
# Import required packages
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
```

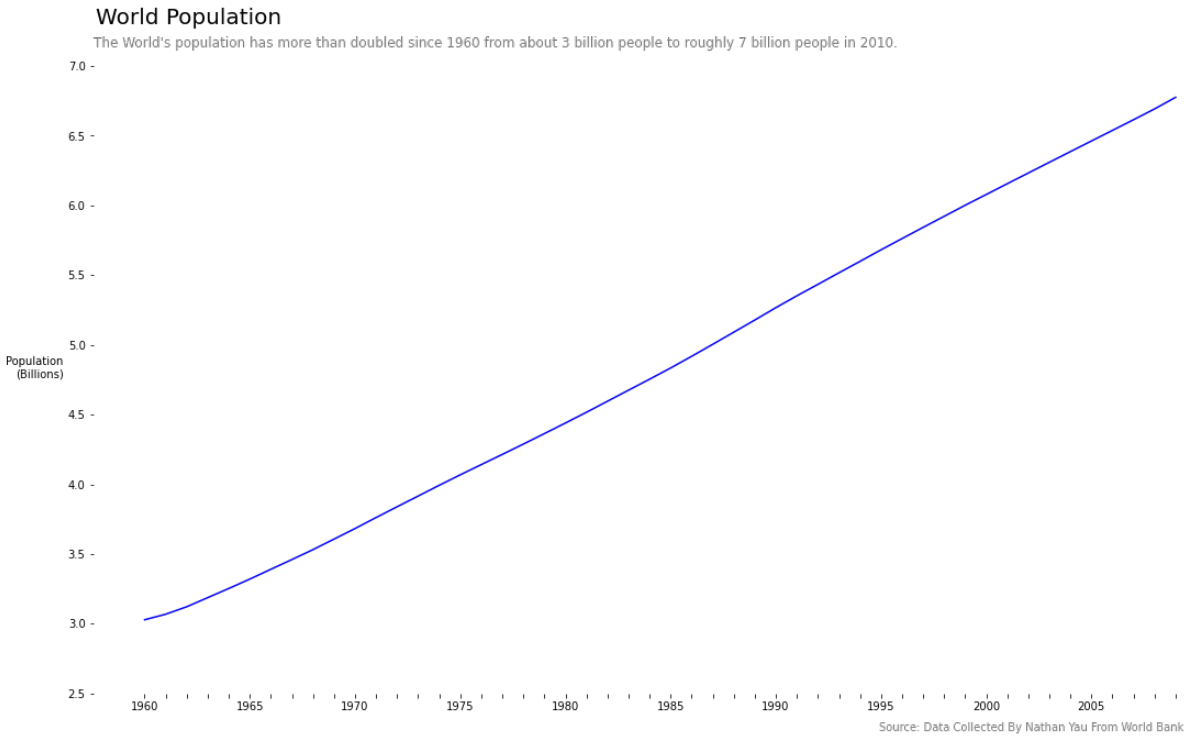
In [2]:
```
# Load dataset
url = '~/Desktop/DSC 640/ex2-2/world-population.xlsm'
data = pd.read_excel(url)
```

In [3]:
```
data.head()
```

Out[3]:

	Year	Population
0	1960	3028654024
1	1961	3068356747
2	1962	3121963107
3	1963	3187471383
4	1964	3253112403

In [6]:
```
# Create axes and figure
fig = plt.figure()
ax1 = fig.add_subplot(111)

# Set figure size
fig.set_size_inches(18.5, 10.5)

# Add plot to figure
ax1.plot(np.arange(len(data['Year'])), data['Population']/1000000000,
color = 'blue')

# Change x-axis values
plt.xticks(np.arange(len(data['Year'])), data['Year'])

# set axis interval
for index, label in enumerate(ax1.xaxis.get_ticklabels()):
    if index % 5 != 0:
        label.set_visible(False)

# set y axis limit
ax1.set_ylim([2.5,7])

# Set titles, caption and axis labels
fig.suptitle("World Population", x = 0.19, y = 0.95, fontsize=20)
fig.text(.87, .08, 'Source: Data Collected By Nathan Yau From World Ba
nk', ha = 'right', color = 'gray')
ax1.set_title("The World's population has more than doubled since 1960
from about 3 billion people to roughly 7 billion people in 2010.", y =
1.02, loc='left', color = 'gray')
ax1.set_ylabel("Population\n(Billions)", rotation = 0, ha = 'right')

# move exponent for y axis
ax1.get_yaxis().get_offset_text().set_x(-0.045)

# Remove frame
plt.box(on = None)

# Show plot
plt.show

# save file
fig.savefig("python_line.png")
```


World Population
The World's population has more than doubled since 1960 from about 3 billion people to roughly 7 billion people in 2010.
Population (Billions)
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
Source: Data Collected By Nathan Yau From World Bank

In [7]:
```
# Create axes and figure
fig = plt.figure()
ax1 = fig.add_subplot(111)

# Set figure size
fig.set_size_inches(18.5, 10.5)

# Add plot to figure
ax1.step(np.arange(len(data['Year'])), data['Population']/1000000000,
color = 'blue')

# Change x-axis values
plt.xticks(np.arange(len(data['Year'])), data['Year'])

# set axis interval
for index, label in enumerate(ax1.xaxis.get_ticklabels()):
    if index % 5 != 0:
        label.set_visible(False)

# set y axis limit
ax1.set_ylim([2.5,7])

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ax1.set_ylabel("Population\n(Billions)", rotation = 0, ha = 'right')

# move exponent for y axis
ax1.get_yaxis().get_offset_text().set_x(-0.045)

# Remove frame
plt.box(on = None)

# Show plot
plt.show

# save file
fig.savefig("python_step.png")
```

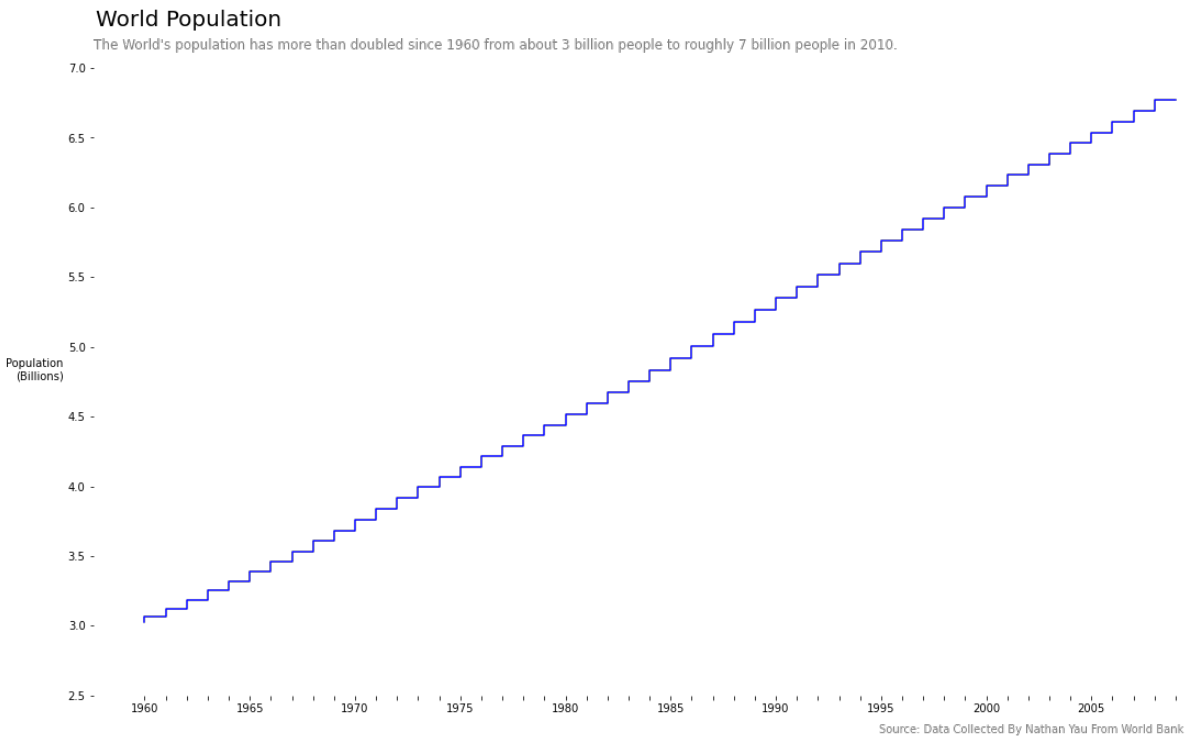
World Population
The World's population has more than doubled since 1960 from about 3 billion people to roughly 7 billion people in 2010.
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In [ ]: