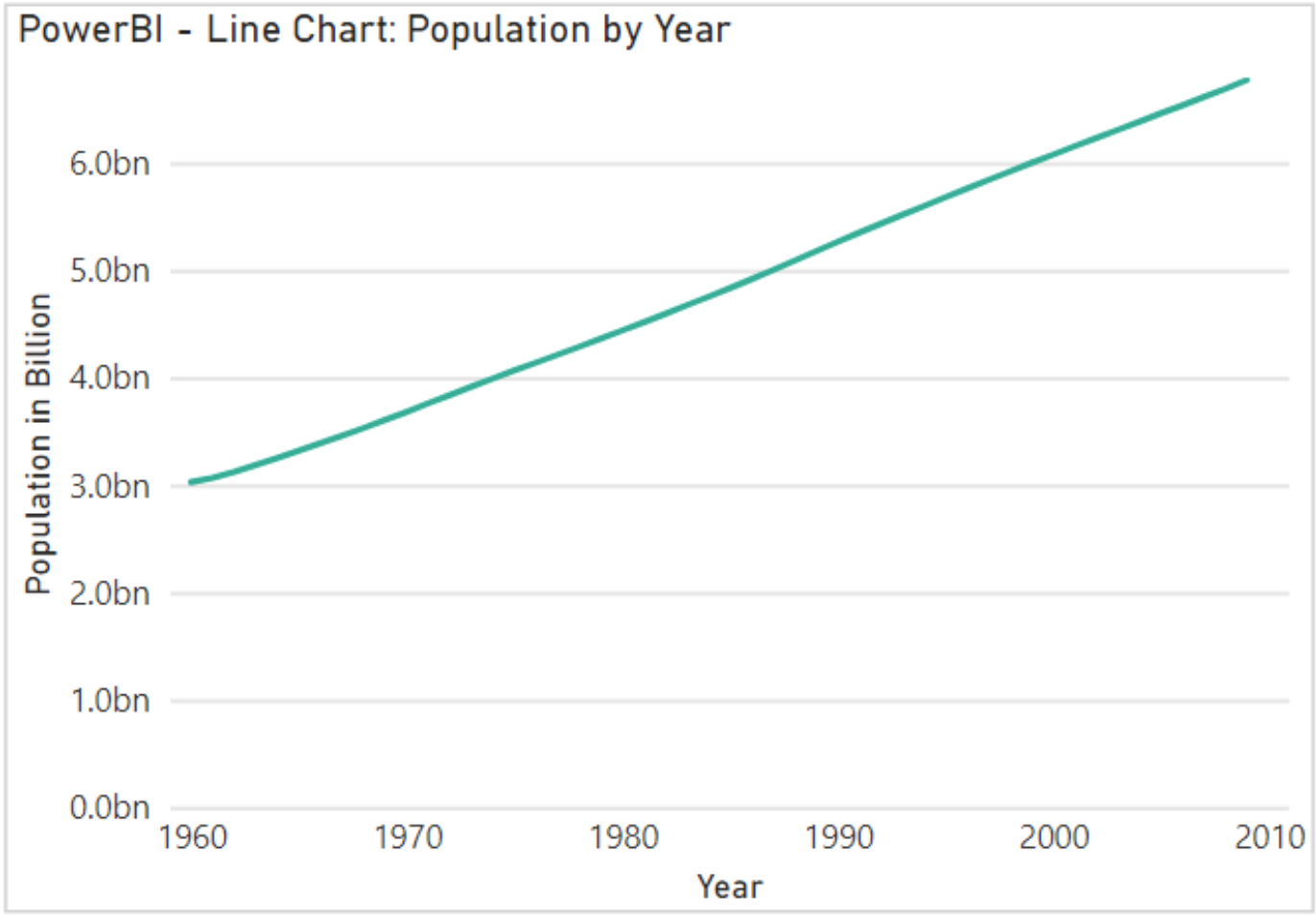
Assignment 2.2 Charts

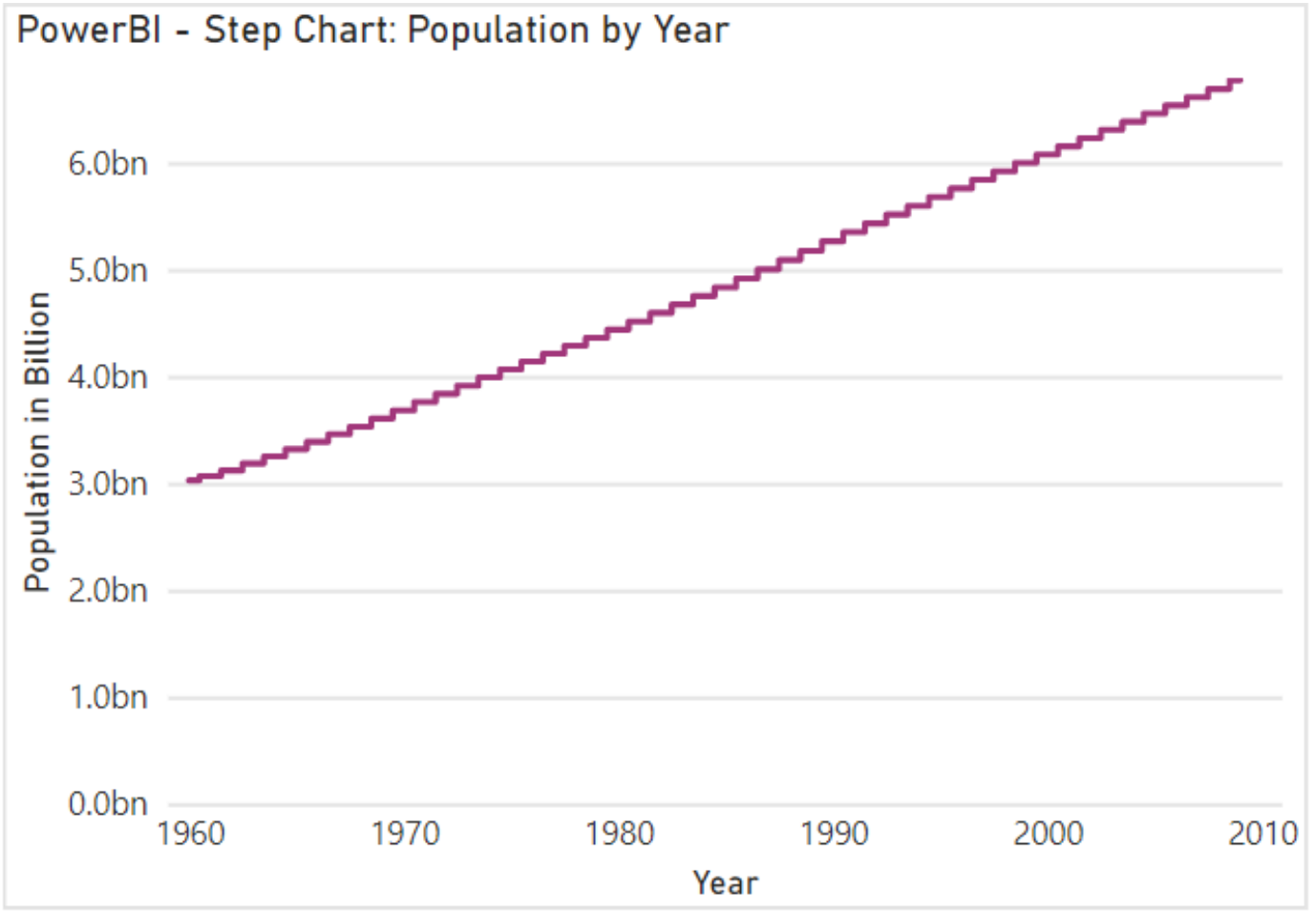
DSC640

Taniya Adhikari

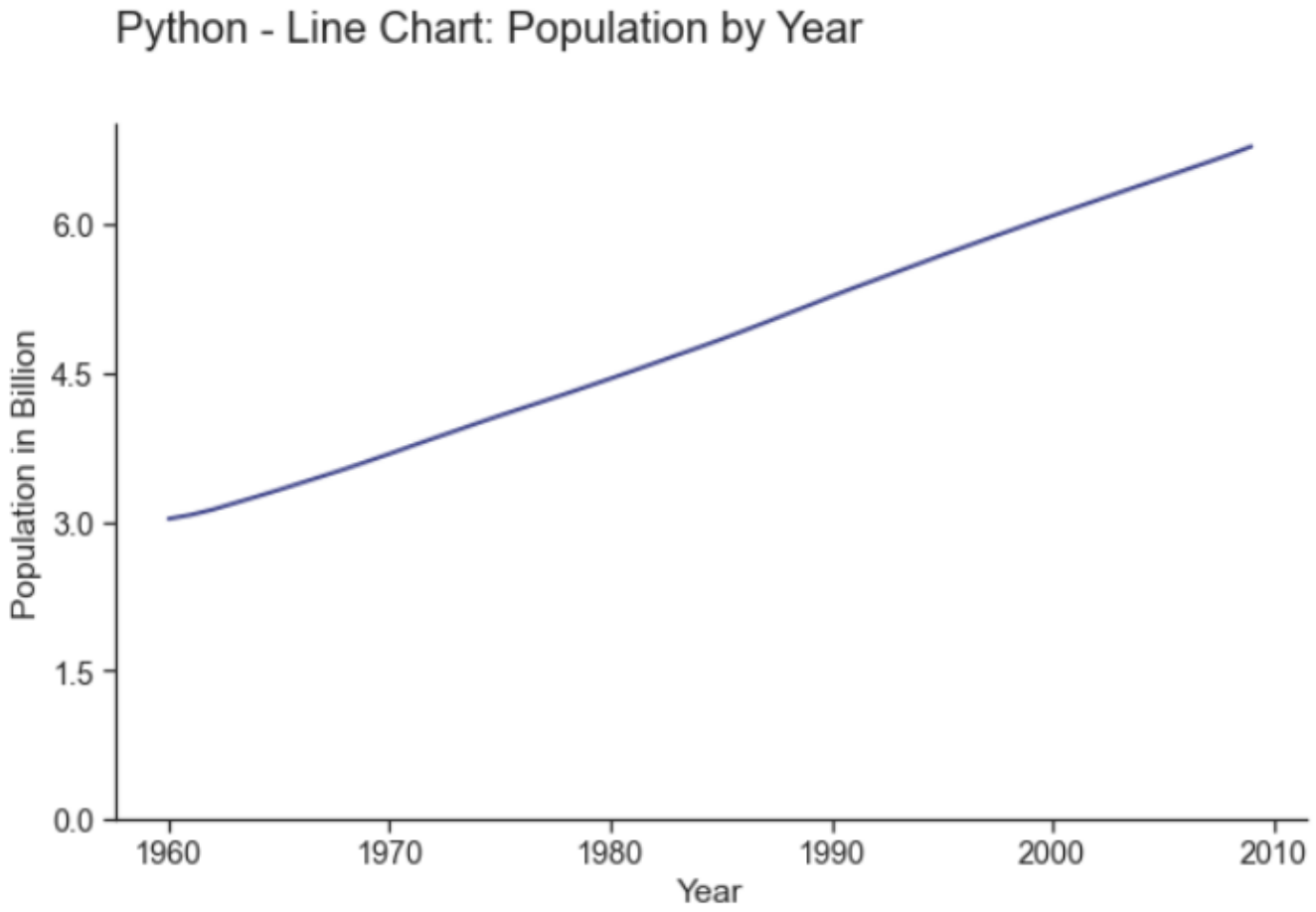
PowerBI – Line Chart



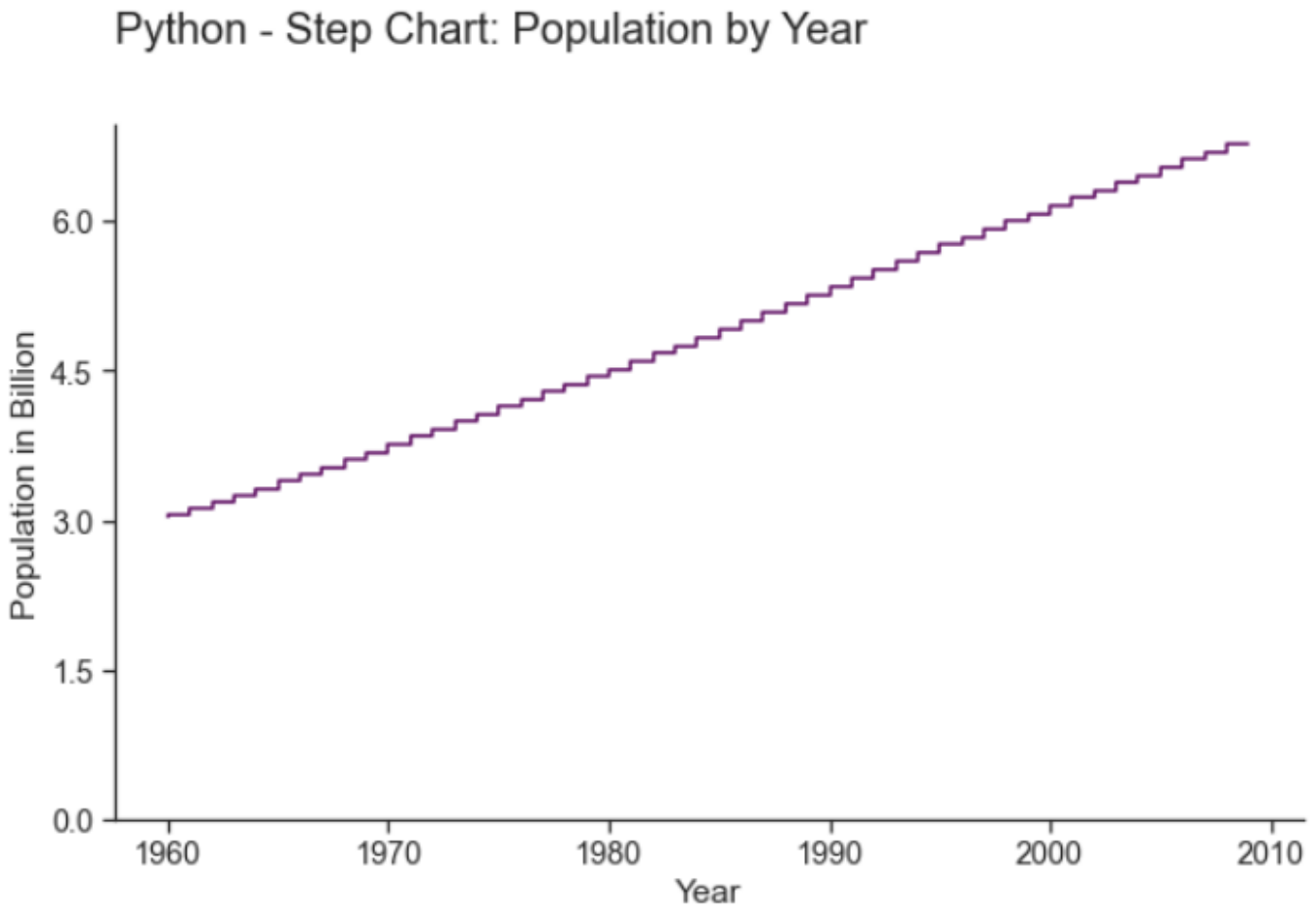
PowerBI – Step Chart



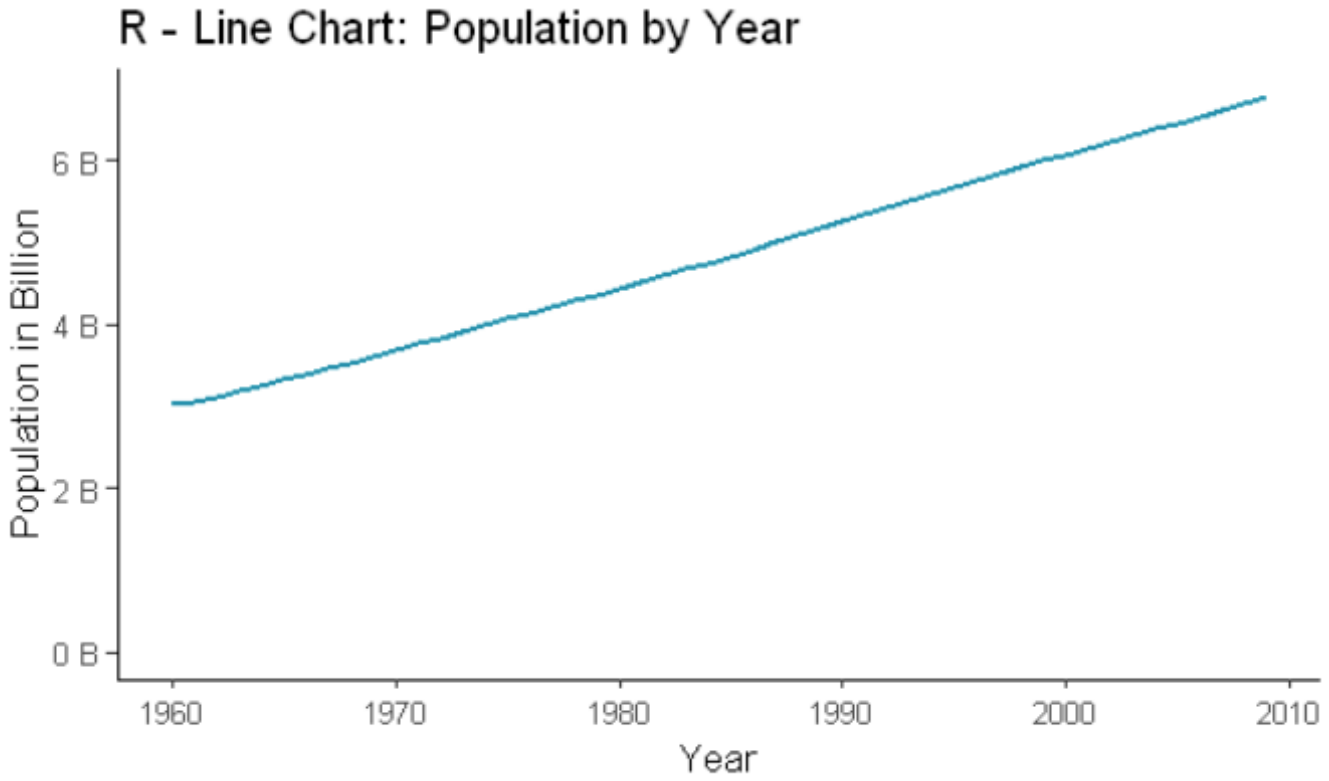
Python – Line Chart



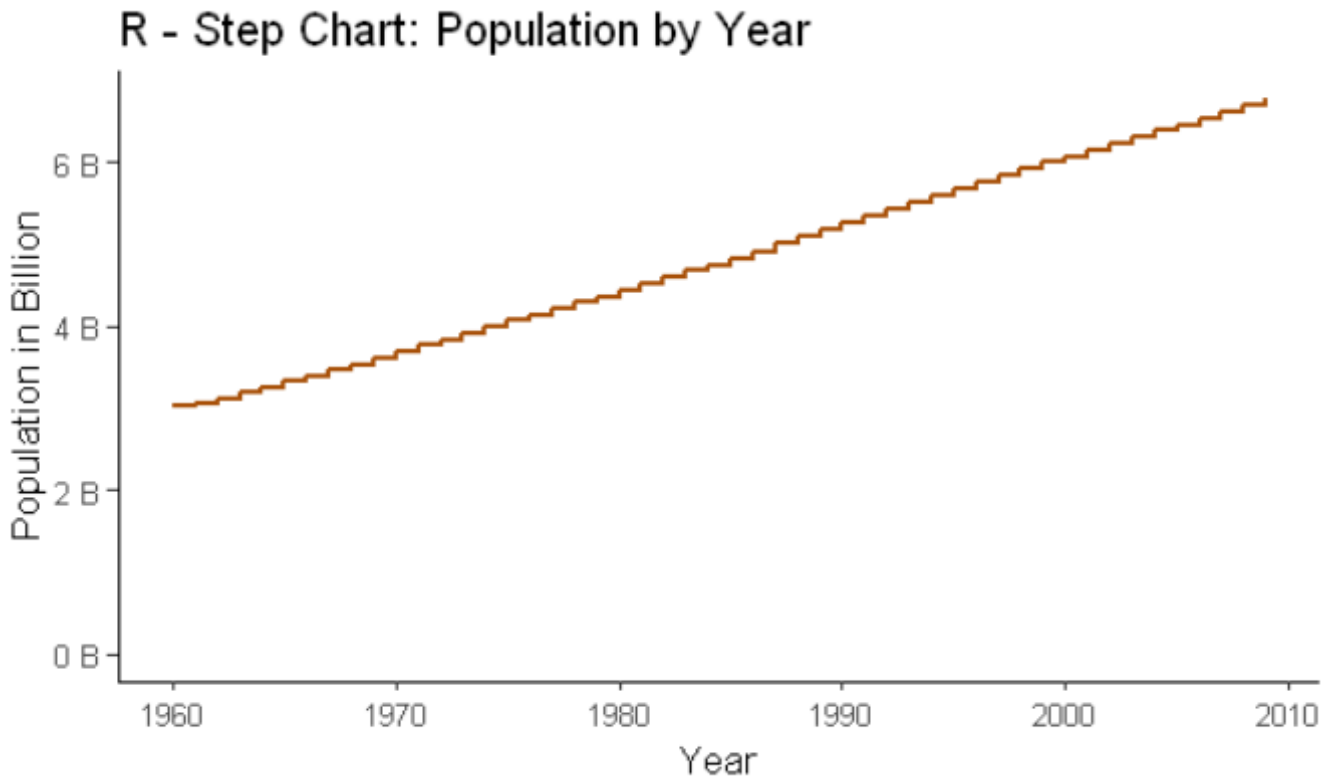
Python – Step Chart



R – Line Chart


R - Line Chart: Population by Year
Population in Billion
6 B
4 B
2 B
0 B
1960
1970
1980
1990
2000
2010
Year

R – Step Chart


R - Step Chart: Population by Year
Population in Billion
6 B
4 B
2 B
0 B
1960
1970
1980
1990
2000
2010
Year

Supplemental Files

- Python Code
- R Code
- PowerBI Files

Python Code

In [2]:
```
import pandas as pd
import numpy as np
import seaborn as sns
import matplotlib.pyplot as plt
%matplotlib inline
from numerize import numerize
import matplotlib.ticker as ticker
from matplotlib.ticker import FuncFormatter
```

In [3]:
```
df = pd.read_excel('world-population.xlsm', sheet_name='world-population')

plt.rcParams['figure.figsize'] = [10,6]

sns.set(font_scale = 1.3)
sns.set_style("ticks")

def billions(x, pos):
    return f'{x / 1000000000}'


## Line Chart
ax = sns.lineplot(data=df, x="Year", y="Population", color= '#484890', lw=2)
ax.set_title("Python - Line Chart: Population by Year", loc='left', y=1.1, fontsize=20)
ax.yaxis.set_major_formatter(ticker.FuncFormatter(billions))
ax.set_ylim(0, 7e9)
plt.yticks([0,1.5e9, 3e9, 4.5e9, 6e9])
ax.set_xlabel("Year")
ax.set_ylabel("Population in Billion")

sns.despine()
plt.show()


## Step Chart
plt.rcParams['figure.figsize'] = [10,6]

sns.set(font_scale = 1.3)
sns.set_style("ticks")

ax = sns.lineplot(data=df, x="Year", y="Population", color= '#600060',drawstyle='steps-pre')
ax.set_title("Python - Step Chart: Population by Year", loc='left', y=1.1, fontsize=20)
ax.yaxis.set_major_formatter(ticker.FuncFormatter(billions))
plt.yticks([0,1.5e9, 3e9, 4.5e9, 6e9])
ax.set_xlabel("Year")
ax.set_ylabel("Population in Billion")

sns.despine()
plt.show()
```

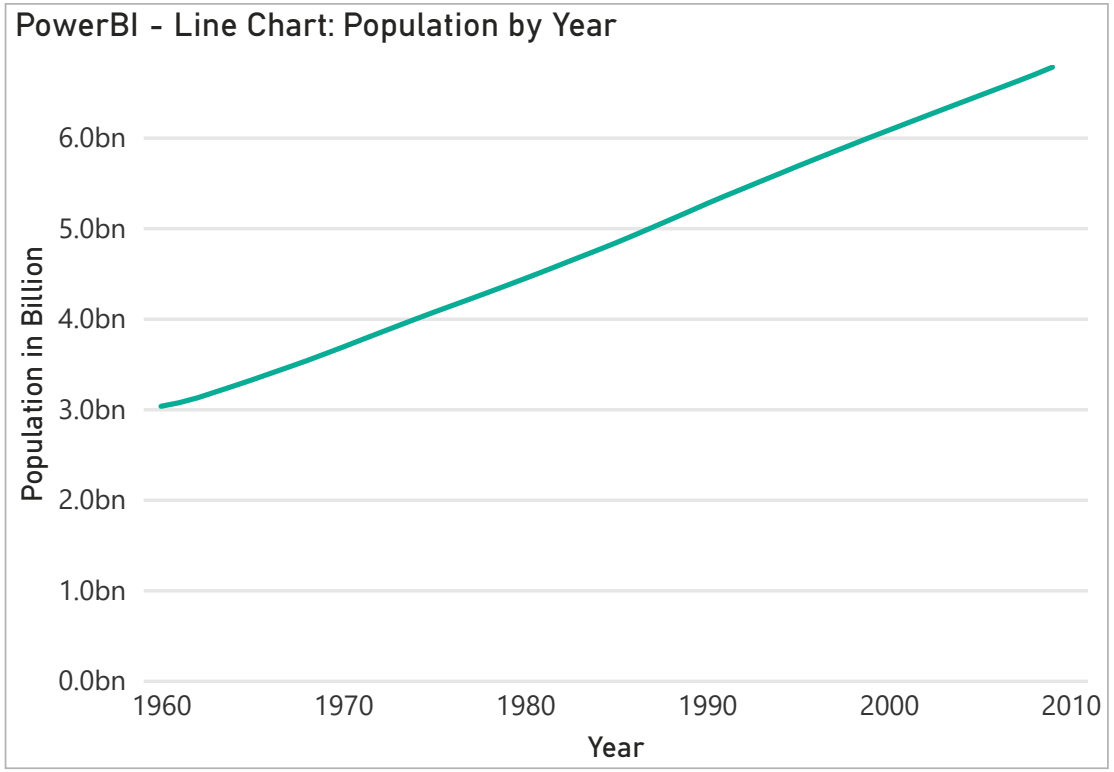
R Code

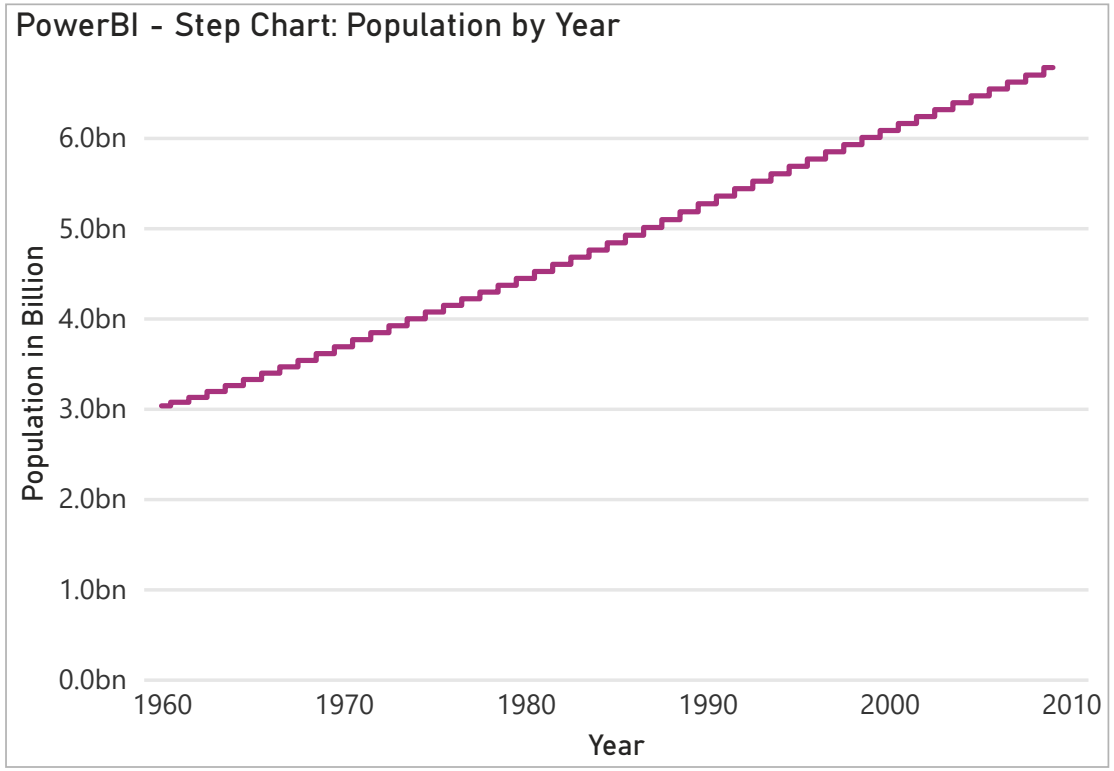
In [6]:
```
library(ggplot2)
library(readxl)
library(scales)


df <- read_excel("world-population.xlsm", sheet ="world-population")
head(df)


options(repr.plot.width = 5, repr.plot.height = 3)
ggplot(df, aes(x =Year, y =Population)) +
   geom_line(size = .6, color='#008FAD') +
   theme_classic() +
   theme(text = element_text(family="sans",size =10, color="black"), element_line(size = .4),
         plot.title = element_text(size = 12)) +
   expand_limits(y = c(0, NA)) +
   scale_y_continuous(labels = unit_format(unit = "B", scale = 1e-9)) +
   xlab("Year") + ylab("Population in Billion") +
   ggtitle("R - Line Chart: Population by Year")


options(repr.plot.width = 5, repr.plot.height = 3)
ggplot(df, aes(x =Year, y =Population)) +
   geom_step(size = .6, color='#AD5203') +
   theme_classic() +
   theme(text = element_text(family="sans",size =10, color="black"), element_line(size = .4),
         plot.title = element_text(size = 12)) +
   expand_limits(y = c(0, NA)) +
   scale_y_continuous(labels = unit_format(unit = "B", scale = 1e-9)) +
   xlab("Year") + ylab("Population in Billion") +
   ggtitle("R - Step Chart: Population by Year")
```


PowerBI - Line Chart: Population by Year
6.0bn
5.0bn
4.0bn
3.0bn
2.0bn
1.0bn
0.0bn
Population in Billion
1960
1970
1980
1990
2000
2010
Year


PowerBI - Step Chart: Population by Year
6.0bn
5.0bn
4.0bn
3.0bn
2.0bn
1.0bn
0.0bn
Population in Billion
1960
1970
1980
1990
2000
2010
Year