DSC 640: Weeks 3 – 4
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Exercise 2.2 Charts

Line Charts

Python

```
plt.rcdefaults()

fig, ax = plt.subplots(figsize=(10, 6))


# plot bar chart

ax.plot(population_df['Year'], (population_df['Population'] / 1000000000))


# set labels

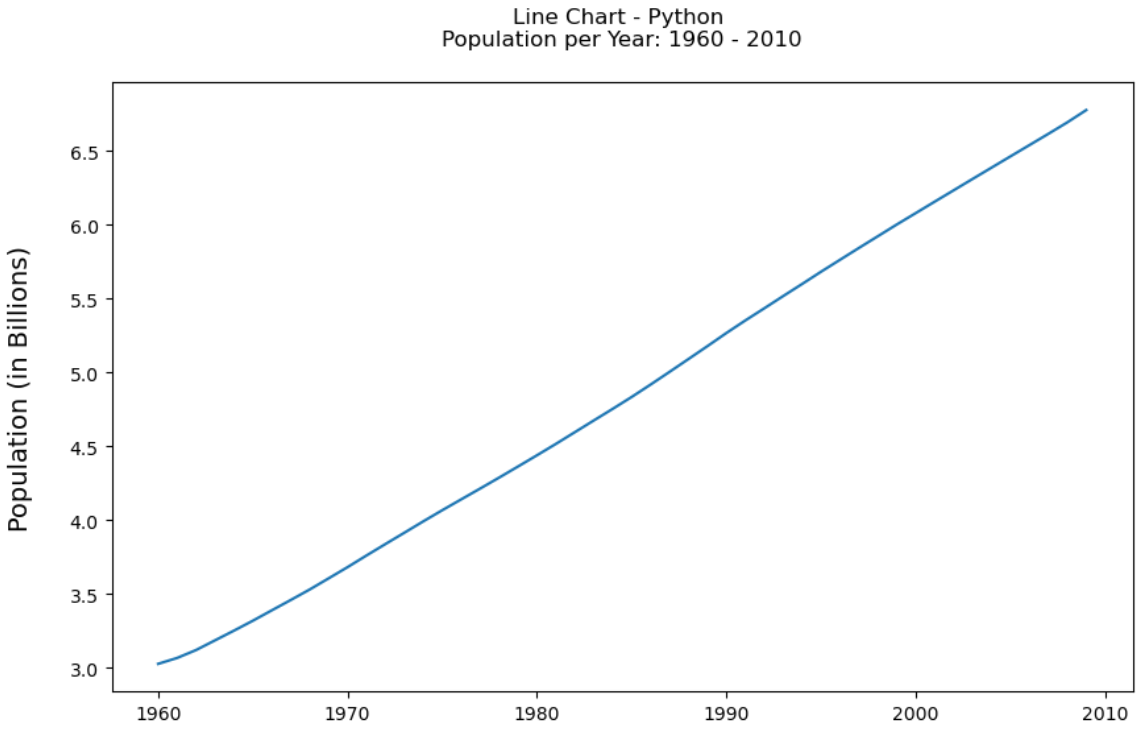
ax.set_ylabel('Population (in Billions)', fontsize = 14)

ax.ticklabel_format(useOffset = False, style = 'plain')

ax.set_title('Line Chart - Python \nPopulation per Year: 1960 - 2010', pad = 20)

ax.yaxis.labelpad = 20.0


plt.show()
```



R

```
```{r}
#| label: linechart
#| fig-width: 6.5

fig <- plot_ly(population_df, x = ~Year, y = ~Population,
               type = 'scatter', mode = 'lines')

fig <- fig %>%
  layout(
    title = "Line Chart - R \nWorld Population per Year",
    xaxis = list(showgrid = FALSE,
                 title = ""),
    yaxis = list(showgrid = FALSE,
                 title = "Population (billions)",
                 titlefont = list(size = 22)),
    margin = list(l = 5, r = 5, b = 10, t = 30, pad = 10)
  )


export(fig, file = "images/linechart-r.png")
```
```

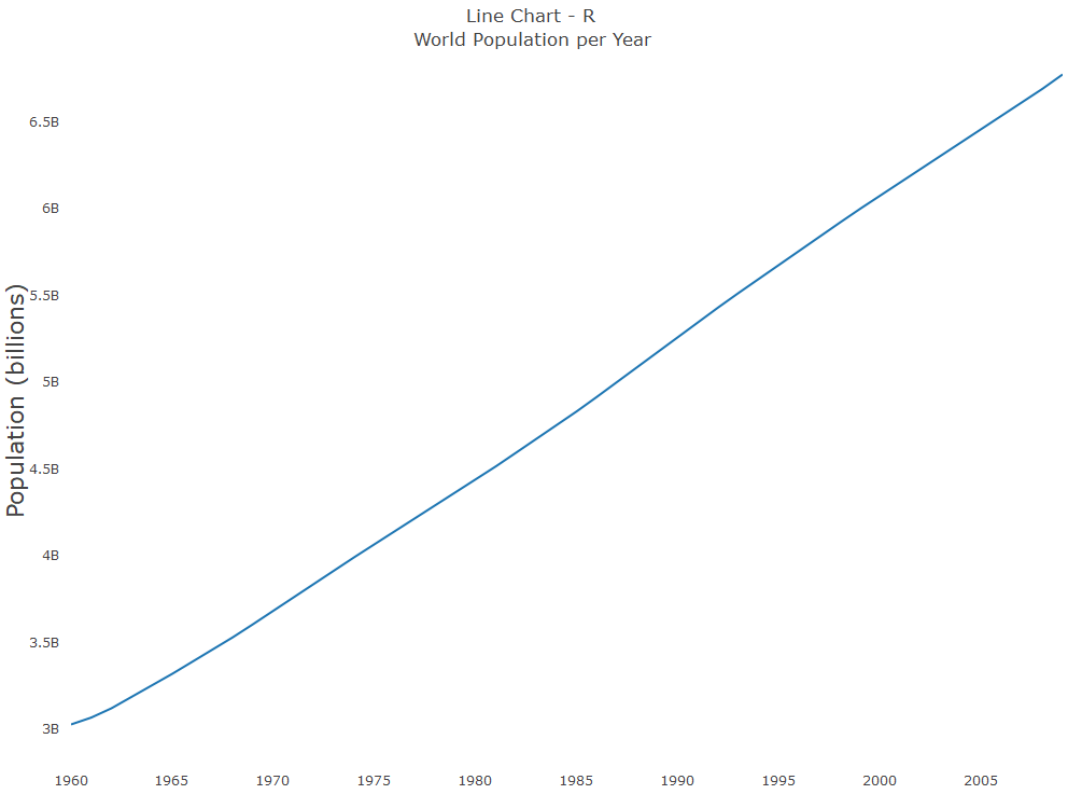
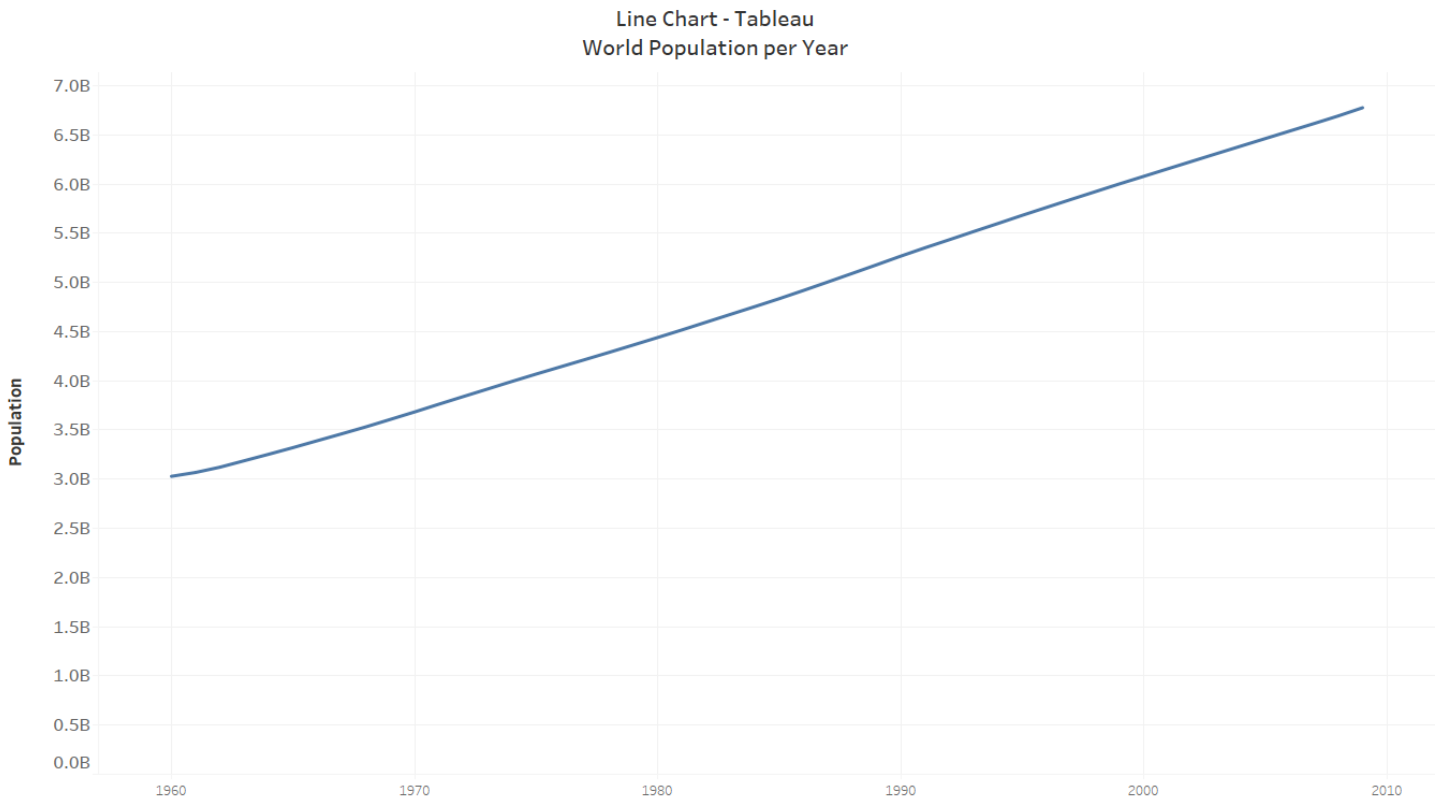


Tableau
(Please see Weeks3-4_Tableau.twb for code)



Step Charts

Python

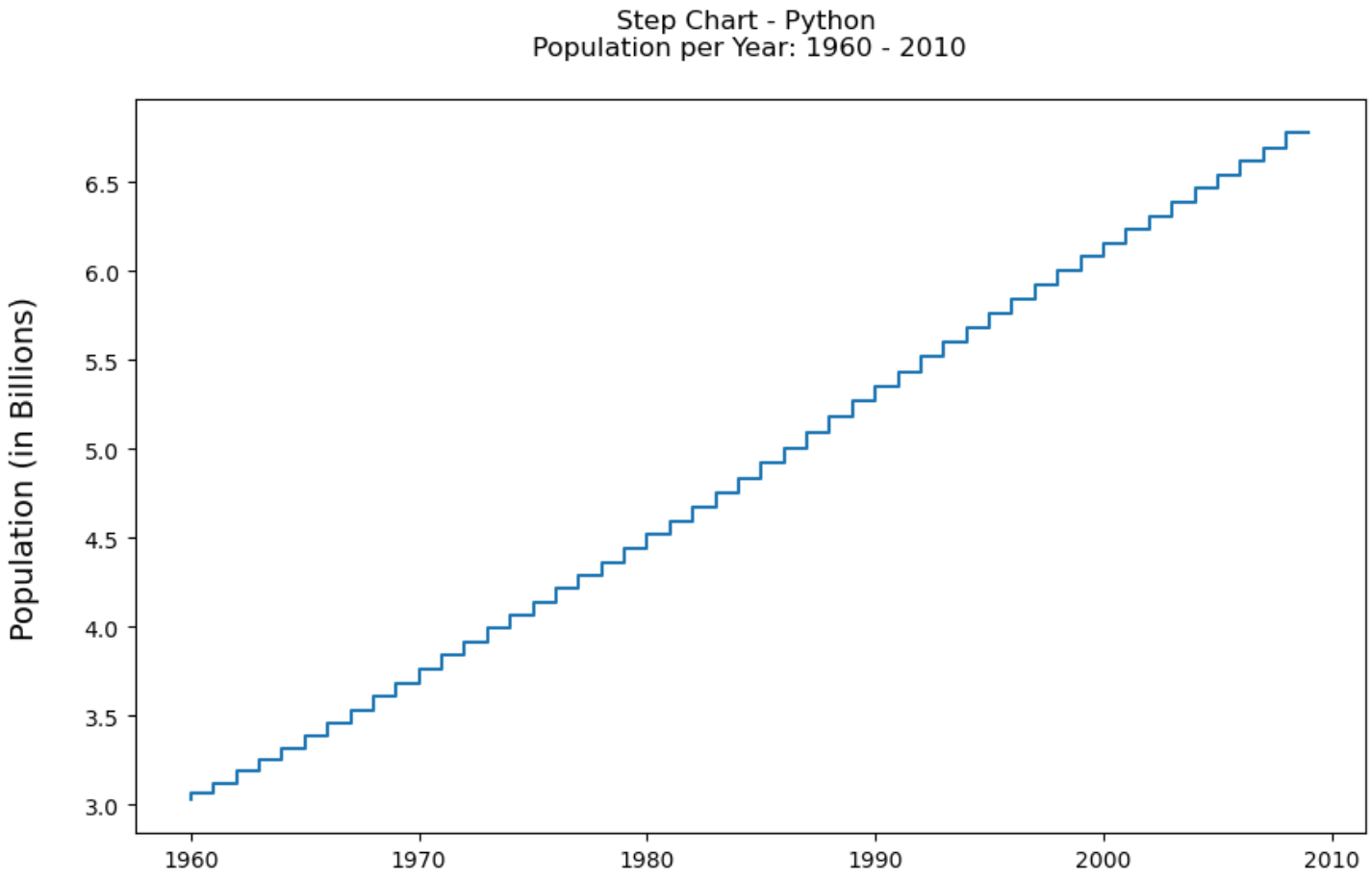
```
plt.rcdefaults()
fig, ax = plt.subplots(figsize=(10, 6))

# plot bar chart
ax.step(population_df['Year'], (population_df['Population'] / 1000000000))

# set labels
ax.set_ylabel('Population (in Billions)', fontsize = 14)
ax.ticklabel_format(useOffset = False, style = 'plain')
ax.set_title('Step Chart - Python \nPopulation per Year: 1960 - 2010', pad = 20)
ax.yaxis.labelpad = 20.0

plt.show()

# Save figure
ax.get_figure().savefig('images/stepchart-python.png',
        bbox_inches = 'tight',
        transparent = True)
```



R

```
```{r}
#| label: stepchart
#| fig-width: 6.5

fig <- plot_ly(population_df, x = ~Year, y = ~Population,
               mode = "lines", type = 'scatter',
               line = list(shape = "hv"))

fig <- fig %>%
  layout(
    title = "Step Chart - R \nWorld Population per Year",
    xaxis = list(showgrid = FALSE,
                 title = ""),
    yaxis = list(showgrid = FALSE,
                 title = "Population (billions)",
                 titlefont = list(size = 22)),
    margin = list(l = 5, r = 5, b = 10, t = 30, pad = 10)
  )


export(fig, file = "images/stepchart-r.png")
```
```

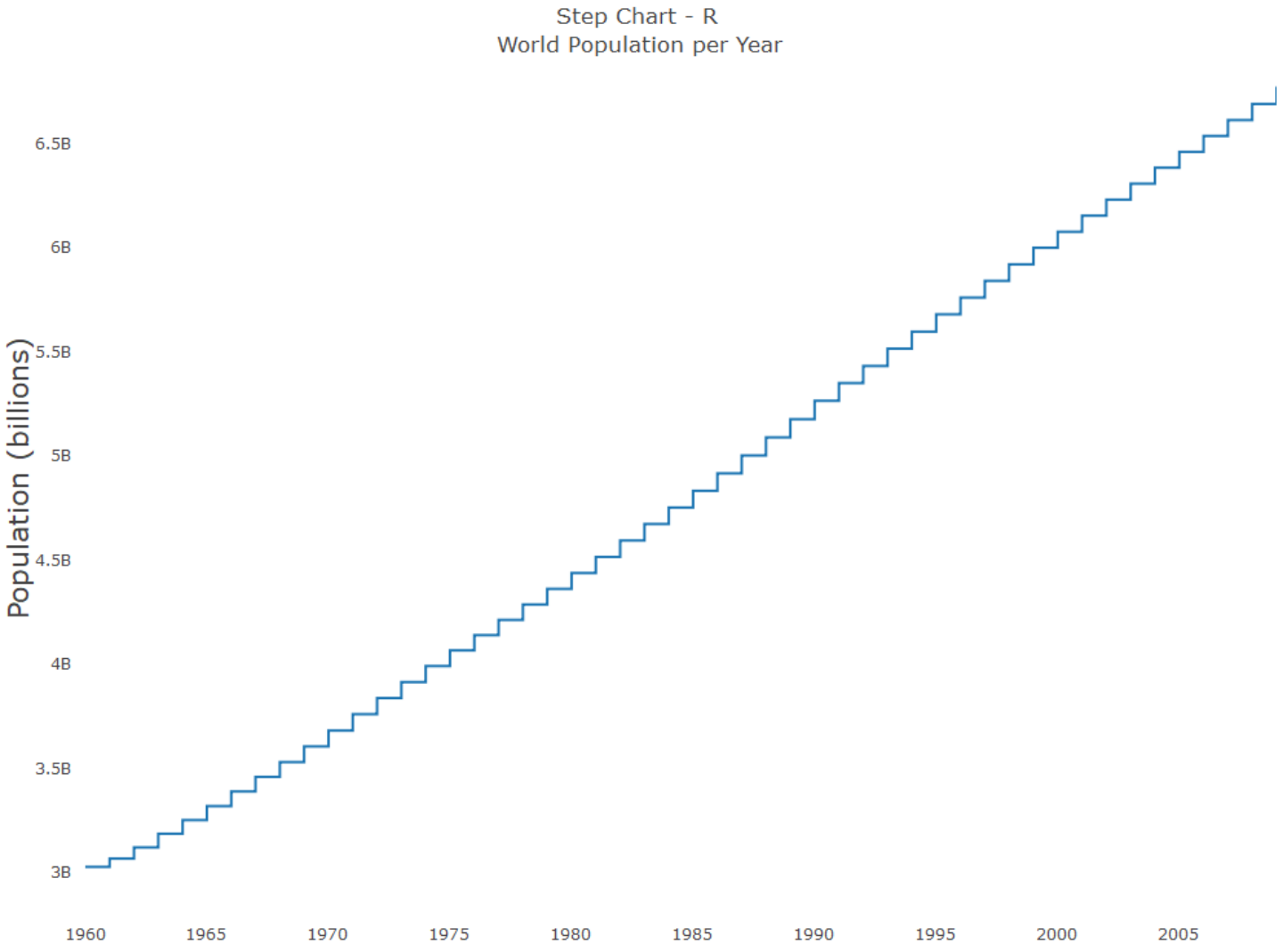


Tableau
(Please see Weeks3-4_Tableau.twb for code)