

```
In [1]: import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
```

```
In [2]: unemployment = pd.read_csv("C:/Users/danie/OneDrive/DSC-640/week3_4/unemployment-rate-
us_postage = pd.read_excel("C:/Users/danie/OneDrive/DSC-640/week3_4/us-postage.xlsm")
world_population = pd.read_excel("C:/Users/danie/OneDrive/DSC-640/week3_4/world-populat
```

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

```
Out[3]:
```

| | Series id | Year | Period | Value |
|---|-------------|------|--------|-------|
| 0 | LNS14000000 | 1948 | M01 | 3.4 |
| 1 | LNS14000000 | 1948 | M02 | 3.8 |
| 2 | LNS14000000 | 1948 | M03 | 4.0 |
| 3 | LNS14000000 | 1948 | M04 | 3.9 |
| 4 | LNS14000000 | 1948 | M05 | 3.5 |

```
In [4]: us_postage.head()
```

```
Out[4]:
```

| | Year | Price |
|---|------|-------|
| 0 | 1991 | 0.29 |
| 1 | 1995 | 0.32 |
| 2 | 1999 | 0.33 |
| 3 | 2001 | 0.34 |
| 4 | 2002 | 0.37 |

```
In [5]: world_population.head()
```

```
Out[5]:
```

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

```
In [29]: # Data Manipulation
import pandas as pd
# Treemap Plotting
```

```

import squarify
# Matplotlib and Seaborn imports
import matplotlib
from matplotlib import style
import matplotlib.pyplot as plt
import seaborn as sns
# Activate Seaborn
sns.set()
%matplotlib inline
# Large Plot
matplotlib.rcParams['figure.figsize'] = (16.0, 9.0)
# Use ggplot style
style.use('ggplot')

mini = min(us_postage["Year"])
maxi = max(us_postage["Year"])

cmap = matplotlib.cm.coolwarm
norm = matplotlib.colors.Normalize(vmin=mini, vmax=maxi)
colors = [cmap(norm(value)) for value in us_postage["Year"]]

us_postage["label"] = us_postage["Year"].astype(str) + " : " + us_postage["Price"].astype(str)
plt.axis('off')

plt.title("Year and Price", fontsize=32)

squarify.plot(sizes=us_postage["Price"], label=us_postage["label"], alpha=0.8, color =

```

Out[29]: <AxesSubplot:title={'center':'Year and Price'}>

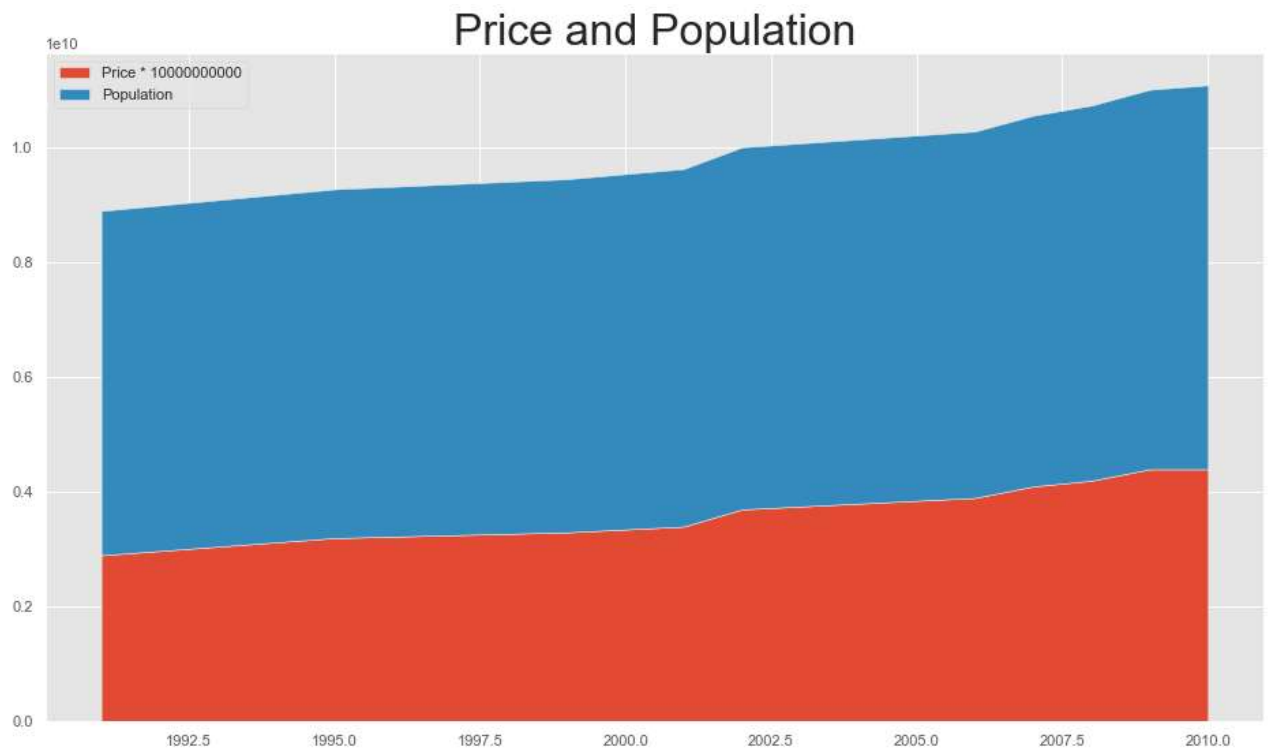


```

In [44]: plt.stackplot(us_postage["Year"], us_postage["Price"] * 10000000000, world_population["
plt.legend(loc='upper left')
plt.title("Price and Population", fontsize=32)

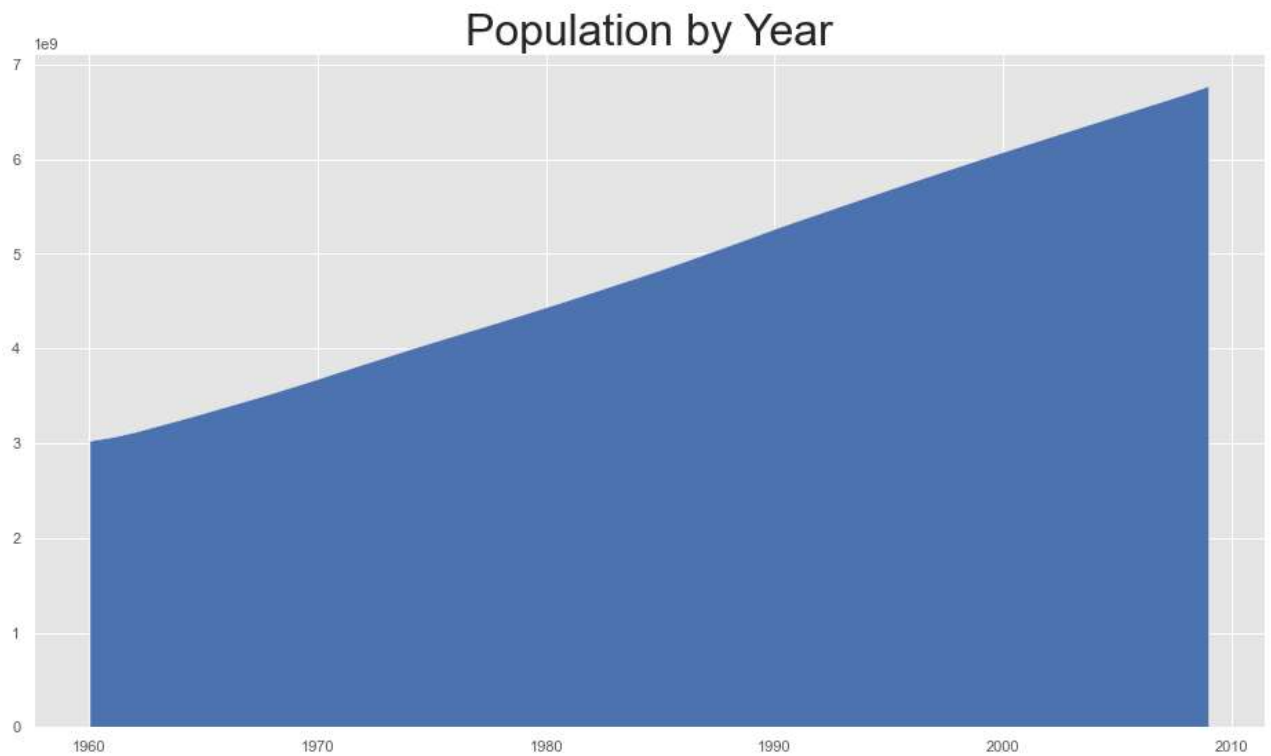
```

Out[44]: Text(0.5, 1.0, 'Price and Population')



```
In [45]: plt.stackplot(world_population["Year"], world_population["Population"], labels=['Popula
plt.title("Population by Year", fontsize=32)
```

```
Out[45]: Text(0.5, 1.0, 'Population by Year')
```



```
In [82]: unemployment.groupby('Period').mean()
```

```
Out[82]:      Year      Value
```

| Period | Year | Value |
|--------|------|-------|
|--------|------|-------|

| Period | Year | Value |
|--------|--------|----------|
| M01 | 1979.0 | 5.671429 |
| M02 | 1979.0 | 5.677778 |
| M03 | 1978.5 | 5.630645 |
| M04 | 1978.5 | 5.637097 |
| M05 | 1978.5 | 5.643548 |
| M06 | 1978.5 | 5.666129 |
| M07 | 1978.5 | 5.664516 |
| M08 | 1978.5 | 5.662903 |
| M09 | 1978.5 | 5.661290 |
| M10 | 1978.5 | 5.690323 |
| M11 | 1978.5 | 5.685484 |
| M12 | 1978.5 | 5.706452 |

```
In [97]: newFrame = unemployment.groupby('Period').mean()
newFrame["Period"] = newFrame.index
```

```
In [98]: plt.plot(newFrame["Period"], newFrame["Value"], drawstyle='steps', linestyle='-', label
```

```
Out[98]: [<matplotlib.lines.Line2D at 0x22ce82454c8>]
```

