In [3]:

```
import pandas as pd
import plotly as px
import numpy as np
import plotly.express as pxe

pd.options.plotting.backend = "plotly"

life = pd.read_csv(r'C:\Users\Master\Desktop\Jupyter\Life expectancy.csv')
life.describe()
```

Out[3]:

	Year	Life expectancy
count	3253.000000	3253.000000
mean	1908.066093	48.680380
std	62.613962	17.965669
min	1800.000000	8.108836
25%	1854.000000	32.000000
50%	1908.000000	41.880001
75%	1962.000000	66.820000
max	2016.000000	83.940002

In [4]:

```
life
```

Out[4]:

	Entity	Year	Life expectancy
0	Australia	1802	34.049999
1	Australia	1803	34.049999
2	Australia	1804	34.049999
3	Australia	1805	34.049999
4	Australia	1806	34.049999
...	...	...	...
3248	United States	2012	78.940002
3249	United States	2013	78.959999
3250	United States	2014	78.940002
3251	United States	2015	78.870003
3252	United States	2016	78.860001

3253 rows × 3 columns

In [5]:

```
life1 = life.rename(columns={'Entity':'Country'})
```

In [6]:

```
life.isnull().sum()
```

Out[6]:

```
Entity             0
Year               0
Life expectancy    0
dtype: int64
```

In [7]:

```
Country = life1['Country'].value_counts()
Country
```

Out[7]:

```
China             217
Japan             217
Russia            217
Italy             217
United States     217
France            217
Brazil            217
Germany           217
Mexico            217
Canada            217
Switzerland       217
United Kingdom    217
India             217
Spain             217
Australia         215
Name: Country, dtype: int64
```

In [ ]:

In [8]:

```
life['Life expectancy'].max()
```

Out[8]:

```
83.940002
```

In [9]:

```
MaiorEspectativadeVida = life1.loc[life1['Life expectancy']==83.940002]
MaiorEspectativadeVida
```

Out[9]:

	Country	Year	Life expectancy
1950	Japan	2016	83.940002

In [10]:

```
life['Life expectancy'].min()
```

Out[10]:

```
8.1088362
```

In [11]:

```
MenorExpectativadeVida = life1.loc[life1['Life expectancy']==8.1088362]
MenorExpectativadeVida
```

Out[11]:

	Country	Year	Life expectancy
1418	India	1918	8.108836

In [12]:

```
Brazil = life1[life1.Country =='Brazil']
Brazil
```

Out[12]:

	Country	Year	Life expectancy
215	Brazil	1800	32.000000
216	Brazil	1801	31.999807
217	Brazil	1802	31.999613
218	Brazil	1803	31.999420
219	Brazil	1804	31.999228
...	...	...	...
427	Brazil	2012	74.639999
428	Brazil	2013	74.839996
429	Brazil	2014	75.010002
430	Brazil	2015	75.139999
431	Brazil	2016	75.239998

217 rows × 3 columns

In [13]:

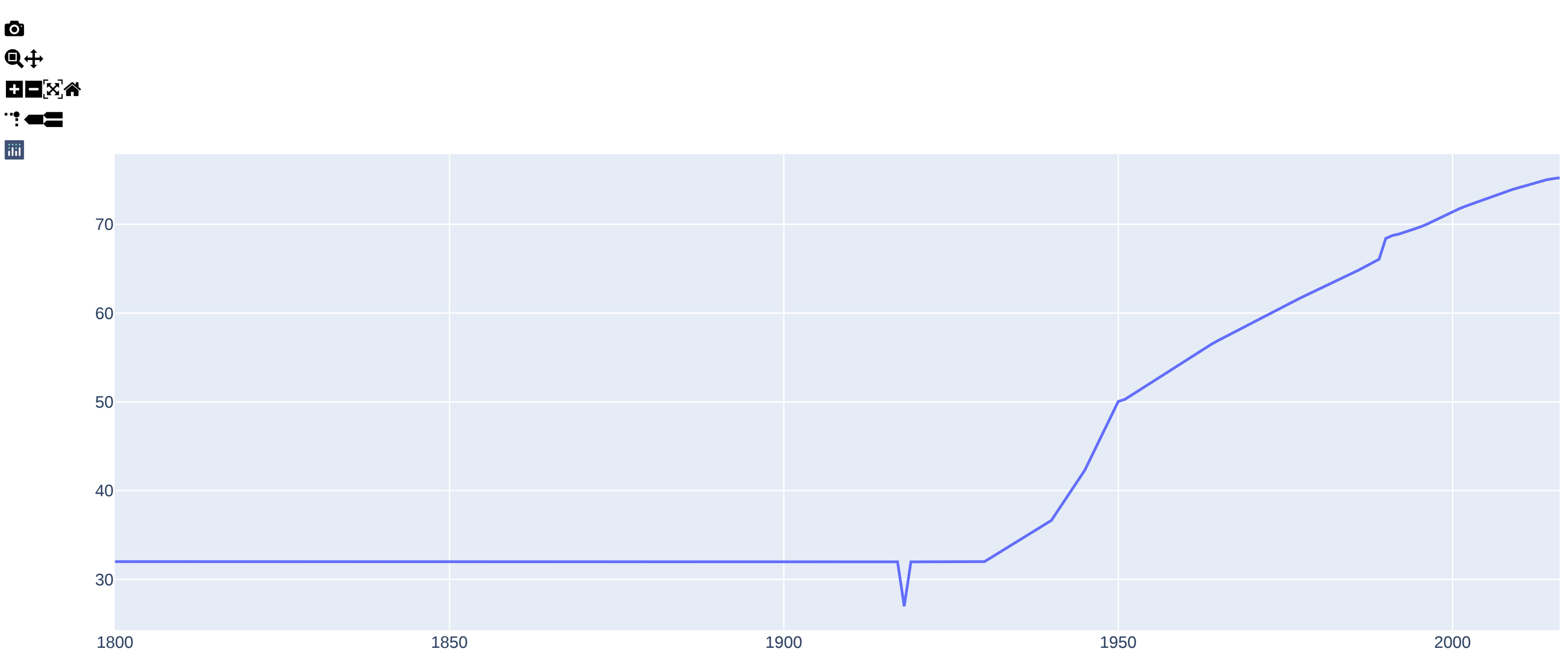
```
MediaDeVidaBrazil = Brazil['Life expectancy'].mean()
MediaDeVidaBrazil
```

Out[13]:

```
42.39229225806453
```

In [14]:

```
Brazil.plot(x='Year',y='Life expectancy', title='Expectativa de Vida Brail',kind='line')
```



In [15]:

```
EstadosUnidos = life1[life1.Country == 'United States']
EstadosUnidos
```

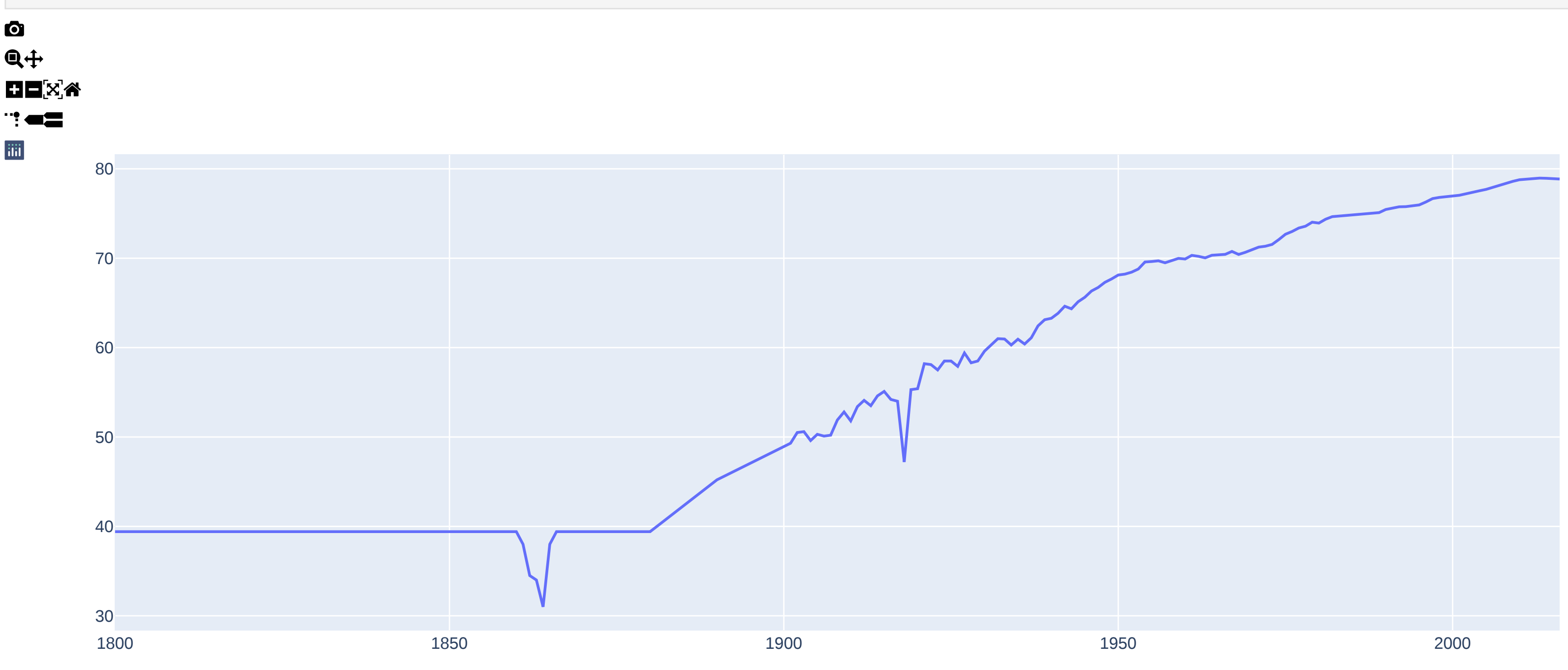
Out[15]:

	Country	Year	Life expectancy
3036	United States	1800	39.410000
3037	United States	1801	39.410000
3038	United States	1802	39.410000
3039	United States	1803	39.410000
3040	United States	1804	39.410000
...	...	...	...
3248	United States	2012	78.940002
3249	United States	2013	78.959999
3250	United States	2014	78.940002
3251	United States	2015	78.870003
3252	United States	2016	78.860001

217 rows × 3 columns

In [16]:

```
EstadosUnidos.plot(x='Year', y='Life expectancy', kind='line',title='Expectativa de vida Estados Unidos')
```



In [17]:

```
Japan = life1[life1.Country=='Japan']
Japan
```

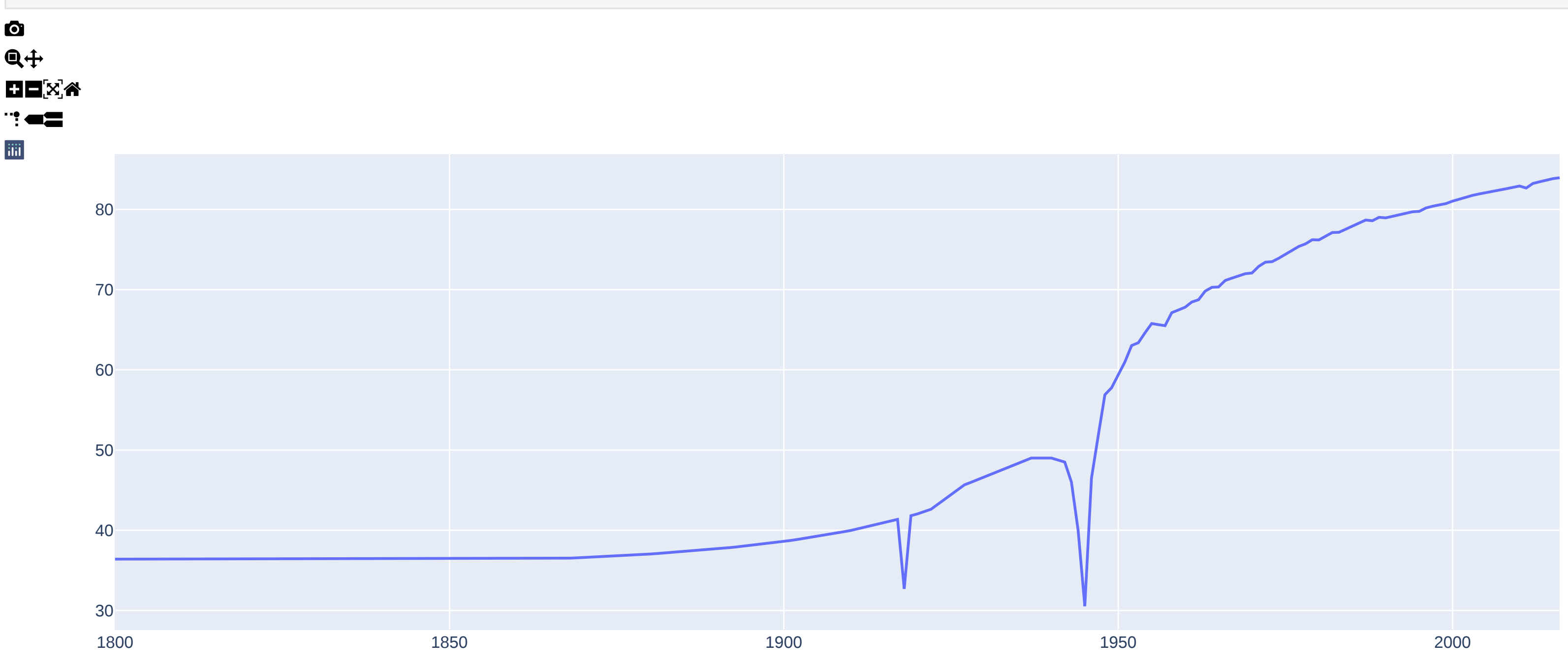
Out[17]:

	Country	Year	Life expectancy
1734	Japan	1800	36.400002
1735	Japan	1801	36.400398
1736	Japan	1802	36.400795
1737	Japan	1803	36.401192
1738	Japan	1804	36.401588
...	...	...	...
1946	Japan	2012	83.230003
1947	Japan	2013	83.440002
1948	Japan	2014	83.690002
1949	Japan	2015	83.830002
1950	Japan	2016	83.940002

217 rows × 3 columns

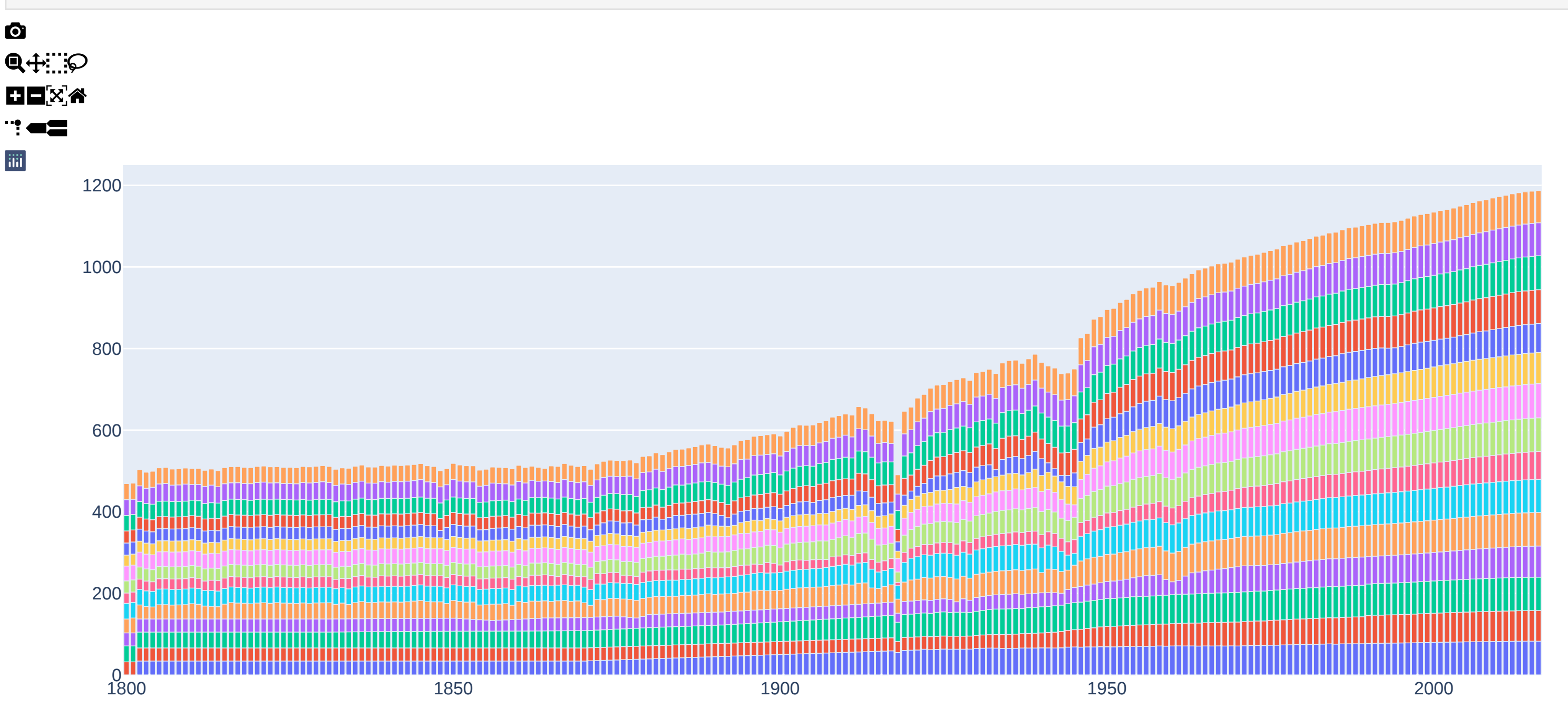
In [18]:

```
Japan.plot(x='Year',y='Life expectancy',kind='line', title= 'Expectativa de vida Japão')
```



In [24]:

```
pxe.bar(life1,  x='Year', y='Life expectancy', color='Country',title='Comparação Expectativa de Vida')
```



In [60]:

```
BrazilEUA = life1[life1['Country'].isin(['Brazil','United States','Japan','China'])]
BrazilEUA
```

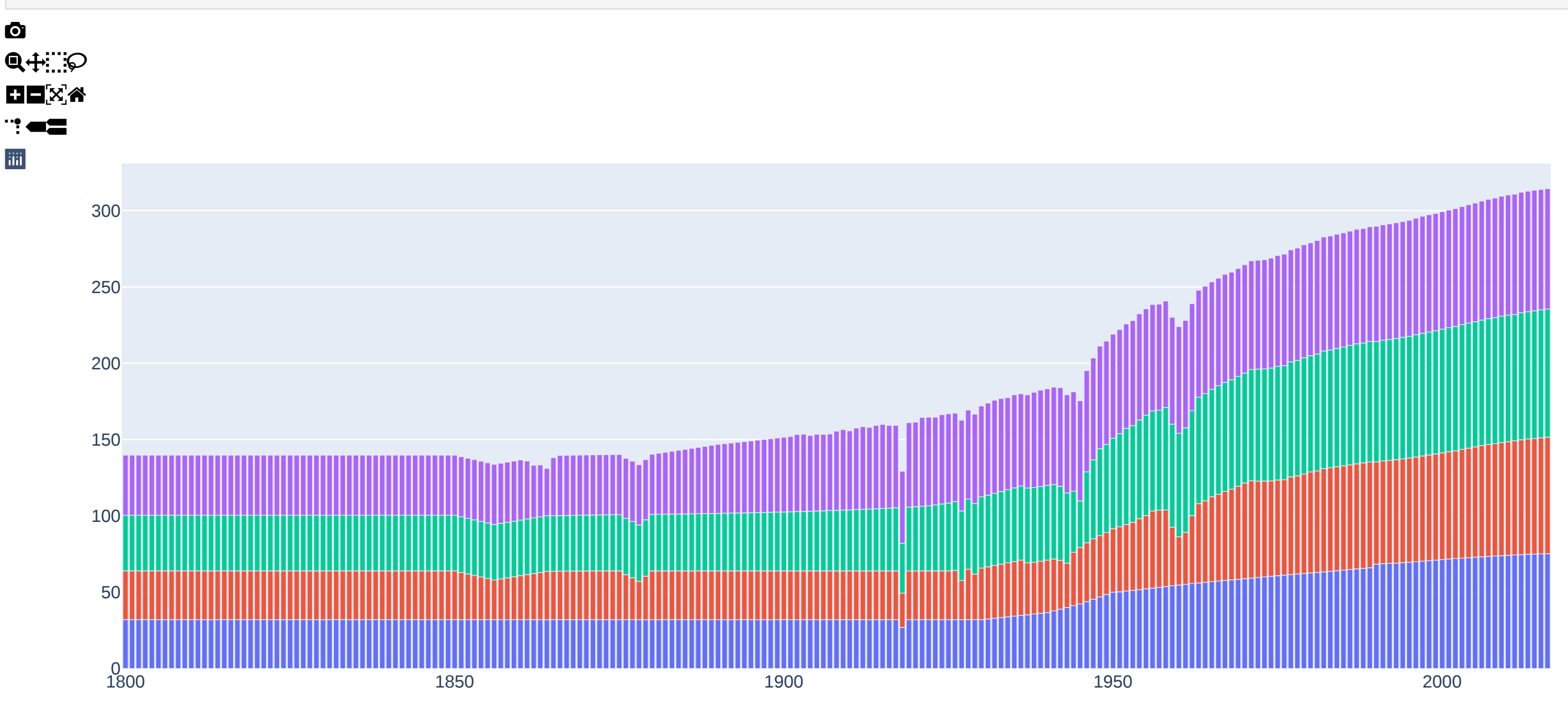
Out[60]:

	Country	Year	Life expectancy
215	Brazil	1800	32.000000
216	Brazil	1801	31.999807
217	Brazil	1802	31.999613
218	Brazil	1803	31.999420
219	Brazil	1804	31.999228
...	...	...	...
3248	United States	2012	78.940002
3249	United States	2013	78.959999
3250	United States	2014	78.940002
3251	United States	2015	78.870003
3252	United States	2016	78.860001

868 rows × 3 columns

In [61]:

```
pxe.bar(BrazilEUA, x='Year',y='Life expectancy',color='Country',title='Comparação Brazil com EstadosUnidos')
```



In [62]:

```
pxe.line(BrazilEUA, x='Year', y='Life expectancy',color='Country')
```