

```
In [1]: import pandas as pd
import sqlite3
```

```
In [5]: gdp_data = pd.read_csv('gdp_data.csv')
gdp_data
```

```
Out[5]:
```

	Characteristic	GDP in billion U.S. dollars
0	2027*	5,365.55
1	2026*	4,947.39
2	2025*	4,547.16
3	2024*	4,170.22
4	2023*	3,820.57
5	2022	3,468.57
6	2021	3,176.30
7	2020	2,667.69
8	2019	2,831.55
9	2018	2,702.93
10	2017	2,651.47
11	2016	2,294.12
12	2015	2,103.59
13	2014	2,039.13
14	2013	1,856.72
15	2012	1,827.64
16	2011	1,823.05
17	2010	1,708.46
18	2009	1,365.37
19	2008	1,224.10
20	2007	1,238.70
21	2006	949.12
22	2005	834.22
23	2004	721.59
24	2003	618.37
25	2002	523.77
26	2001	493.93
27	2000	476.64
28	1999	466.84
29	1998	428.77
30	1997	423.19
31	1996	399.79
32	1995	366.6
33	1994	333.01
34	1993	284.19
35	1992	293.26
36	1991	274.84
37	1990	326.61
38	1989	300.19
39	1988	299.65
40	1987	283.75

```
In [6]: conn = sqlite3.connect('gdp.db')
```

```
In [8]: gdp_data.to_sql('year',conn)
```

```
Out[8]: 41
```

```
In [9]: %load_ext sql
```

```
In [11]: %sql sqlite:///gdp.db
```

```
In [12]: %%sql
SELECT * FROM year
```

```
* sqlite:///gdp.db
Done.
```

```
Out[12]:
```

index	Characteristic	GDP in billion U.S. dollars
0	2027*	5,365.55
1	2026*	4,947.39
2	2025*	4,547.16
3	2024*	4,170.22
4	2023*	3,820.57
5	2022	3,468.57
6	2021	3,176.30
7	2020	2,667.69
8	2019	2,831.55
9	2018	2,702.93
10	2017	2,651.47
11	2016	2,294.12
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35	1992	293.26
36	1991	274.84
37	1990	326.61
38	1989	300.19
39	1988	299.65
40	1987	283.75

```
In [17]: %%sql
SELECT COUNT(*) FROM gdp
```

```
* sqlite:///gdp.db
Done.
```

Out[17]: **COUNT(\*)**

41

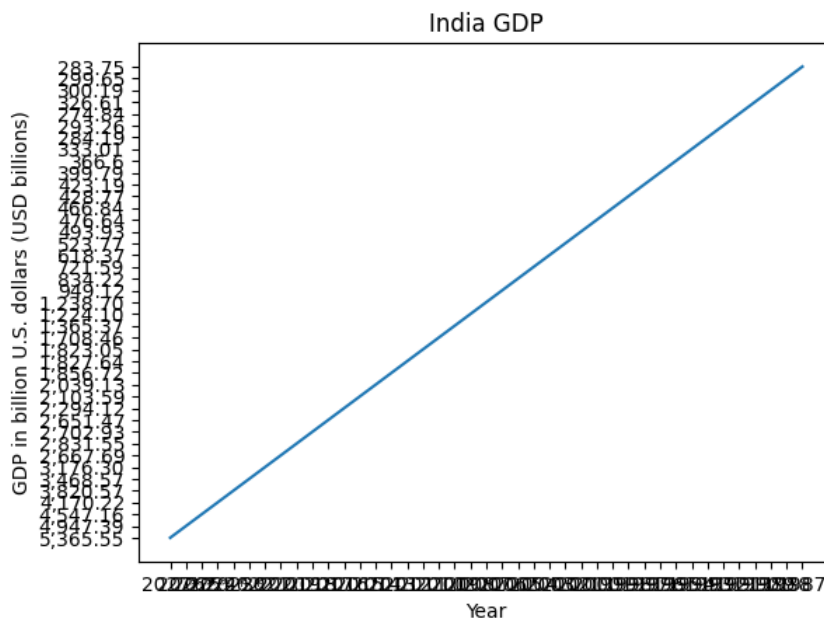
```
In [18]: gdp_data = pd.read_sql_query('SELECT * FROM gdp',conn)
```

```
In [20]: import requests
```

```
In [21]: response = requests.get('https://api.exchangerate-api.com/v4/latest/USD')
data = response.json()
usd_to_inr = data['rates']['INR']
```

```
In [22]: import matplotlib.pyplot as plt
```

```
In [27]: plt.plot(gdp_data['Characteristic'], gdp_data['GDP in billion U.S. dollars'])
plt.xlabel('Year')
plt.ylabel('GDP in billion U.S. dollars (USD billions)')
plt.title('India GDP')
plt.show()
```



In [ ]:

```
In [38]: def convert_to_inr():
    gdp_data['GDP in billion U.S. dollars'] = gdp_data['GDP in billion U.S. dollars'] * usd_to_inr / 1e9
    plt.plot(df['Characteristic'], gdp_data['GDP in billion U.S. dollars'])
    plt.xlabel('Characteristic')
    plt.ylabel('GDP in billion U.S. dollars (INR billions)')
    plt.title('India GDP (INR)')

    button = plt.Button(plt.axes([0.8, 0.95, 0.15, 0.05]), 'Convert to INR')
    button.on_clicked(convert_to_inr)
    plt.show()
```

Convert to INR

```
In [37]: def convert_to_inr(event):
    plt.gca().yaxis.set_major_formatter(plt.FormatStrFormatter('%0.2f'))
    plt.gca().set_ylim([0, df['gdp_usd'].max()*conversion_factor])
    plt.ylabel('GDP (in INR billions)')

    button = plt.Button(plt.axes([0.8, 0.95, 0.15, 0.05]), 'Convert to INR')
    button.on_clicked(convert_to_inr)

    plt.show()
```

Convert to INR

In [ ]: