In [3]:
```
#Importing the libraries
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
```

In [5]:
```
#Importing the dataset
df=pd.read_csv('/content/drive/MyDrive/Data sets/Internet users.csv')
df.head()
```

Out[5]:

	Country Name	Indicator Name	2000	2001	2002	2003	2004	2005	2006	2007	...	2012	2013	2014	2015	2016	
0	Aruba	Individuals using the Internet (% of population)	15.442823	17.100000	18.800000	20.800000	23.000000	25.400000	28.000000	30.900000	...	74.000000	78.900000	83.780000	88.661227	93.542454	97.17
1	Africa Eastern and Southern	Individuals using the Internet (% of population)	0.774218	0.961552	1.131629	1.430398	1.716047	1.805523	2.058102	2.773274	...	8.534750	10.126945	12.237716	14.593148	16.378025	18.09
2	Afghanistan	Individuals using the Internet (% of population)	NaN	0.004723	0.004561	0.087891	0.105809	1.224148	2.107124	1.900000	...	5.454545	5.900000	7.000000	8.260000	11.000000	13.50
3	Africa Western and Central	Individuals using the Internet (% of population)	0.139445	0.210153	0.412122	0.657938	1.176318	2.322416	3.458341	4.233399	...	10.293655	12.577756	14.923441	18.179203	21.829266	25.17
4	Angola	Individuals using the Internet (% of population)	0.105046	0.136014	0.270377	0.370682	0.464815	1.143367	1.500000	1.700000	...	7.700000	13.000000	21.400000	22.000000	23.200000	26.00

5 rows × 24 columns

Understanding Data

In [6]:
```
#Getting the information about data
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 266 entries, 0 to 265
Data columns (total 24 columns):
 #   Column          Non-Null Count  Dtype  
---  ------          --------------  -----  
 0   Country Name    266 non-null    object 
 1   Indicator Name  266 non-null    object 
 2   2000            243 non-null    float64
 3   2001            247 non-null    float64
 4   2002            250 non-null    float64
 5   2003            244 non-null    float64
 6   2004            247 non-null    float64
 7   2005            248 non-null    float64
 8   2006            247 non-null    float64
 9   2007            252 non-null    float64
 10  2008            250 non-null    float64
 11  2009            250 non-null    float64
 12  2010            249 non-null    float64
 13  2011            252 non-null    float64
 14  2012            250 non-null    float64
 15  2013            249 non-null    float64
 16  2014            249 non-null    float64
 17  2015            248 non-null    float64
 18  2016            251 non-null    float64
 19  2017            253 non-null    float64
 20  2018            209 non-null    float64
 21  2019            203 non-null    float64
 22  2020            198 non-null    float64
 23  2021            74 non-null     float64
dtypes: float64(22), object(2)
memory usage: 50.0+ KB
```

In [7]:
```
#Checking the total null values
df.isnull().sum()
```

Out[7]:
```
Country Name        0
Indicator Name      0
2000               23
2001               19
2002               16
2003               22
2004               19
2005               18
2006               19
2007               14
2008               16
2009               16
2010               17
2011               14
2012               16
2013               17
2014               17
2015               18
2016               15
2017               13
2018               57
2019               63
2020               68
2021              192
dtype: int64
```

In [8]:
```
#Knowing the number of rows and columns
df.shape
#There are 266 rows and 24 columns
```

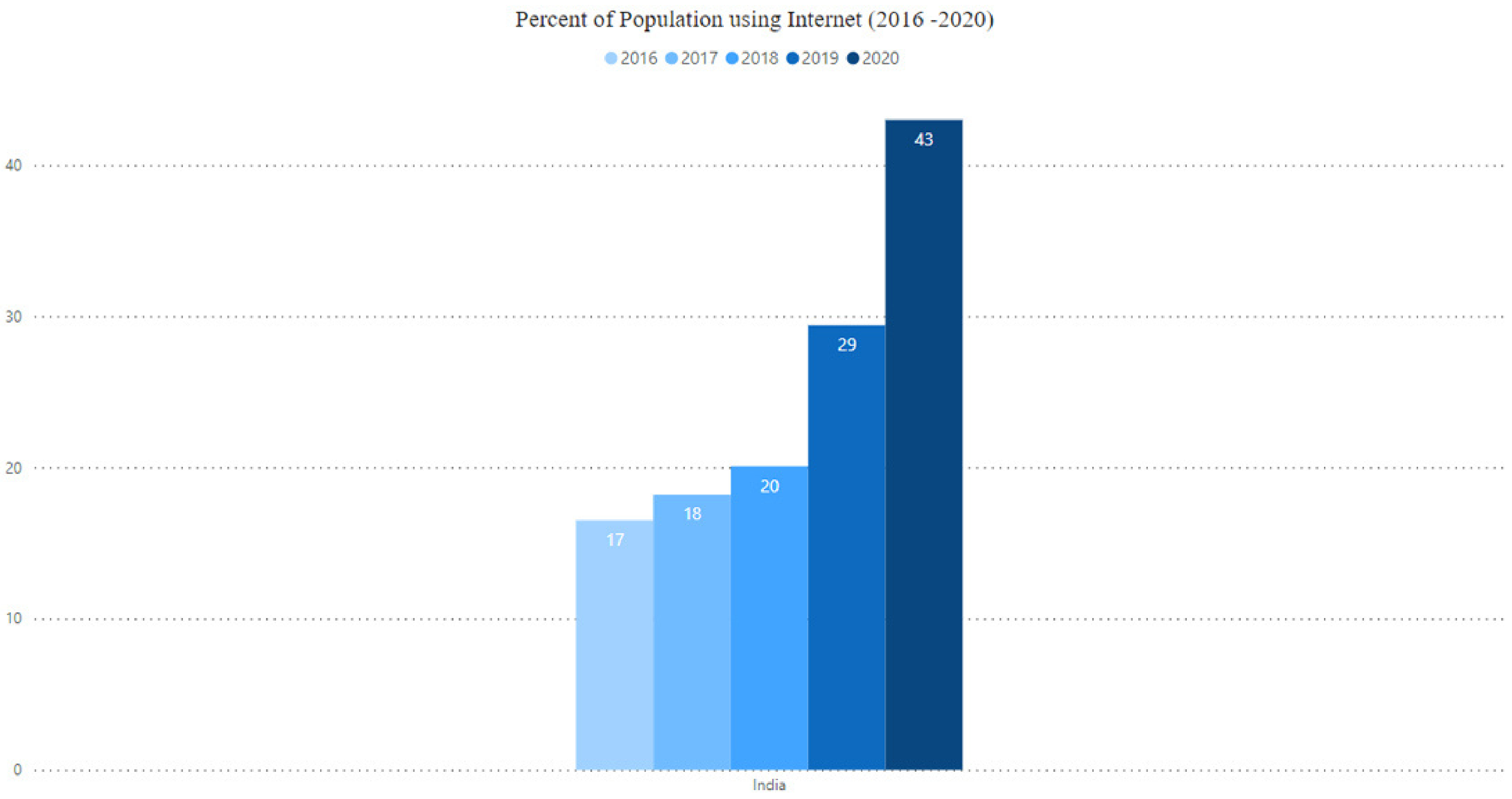
Out[8]:
```
(266, 24)
```

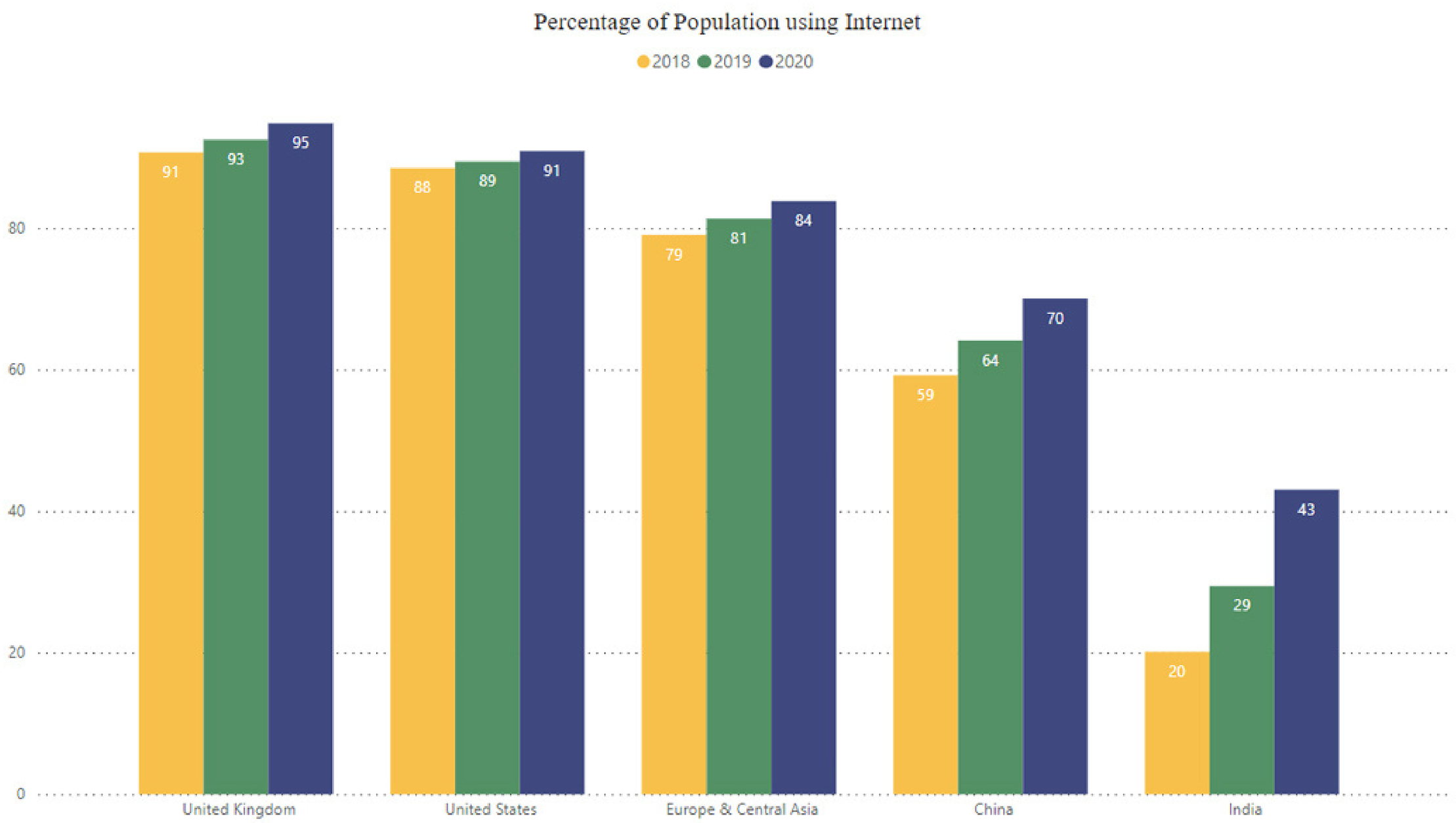
In [29]:

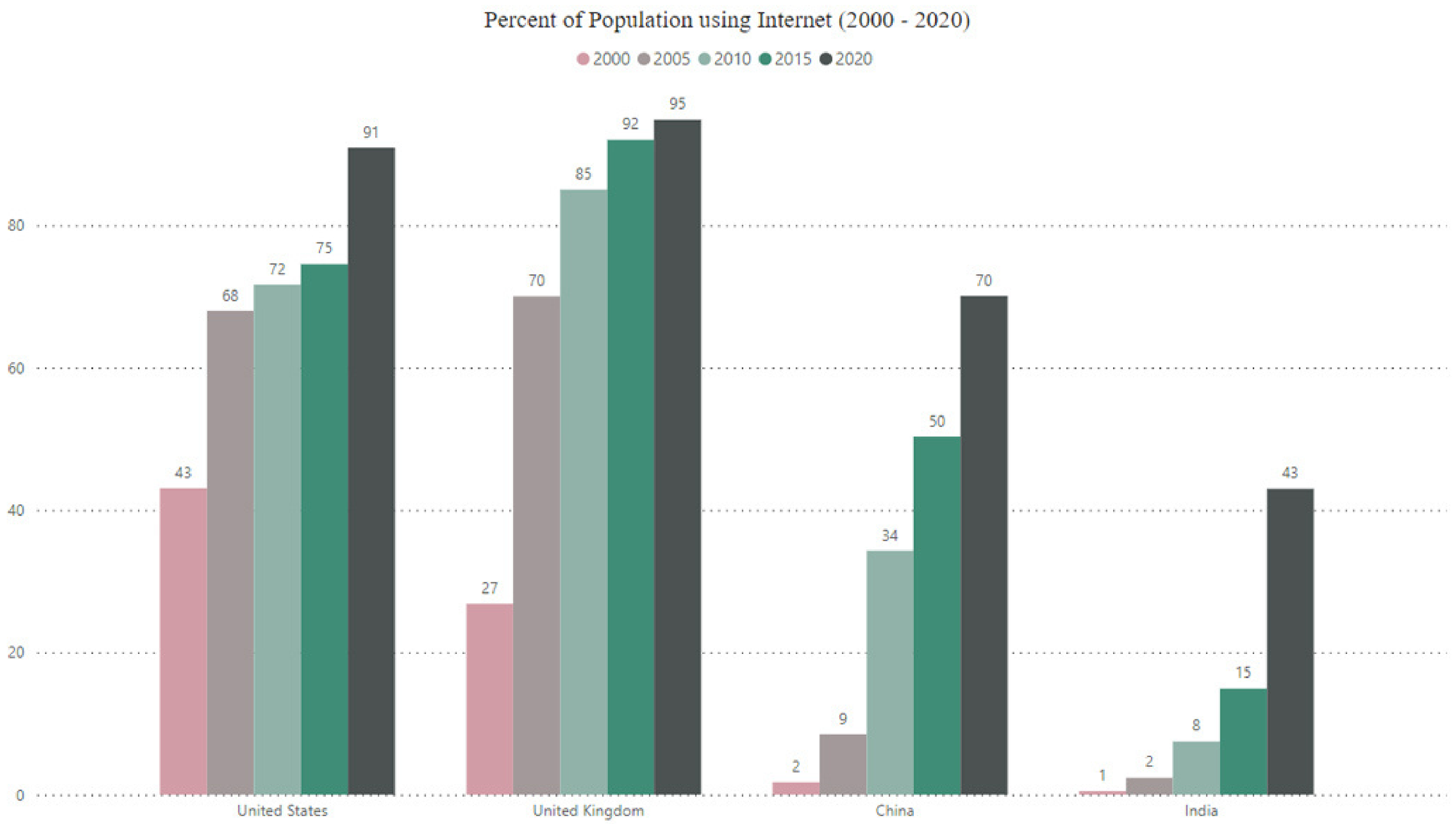
```
#Filling the null values
df.fillna(0)
```

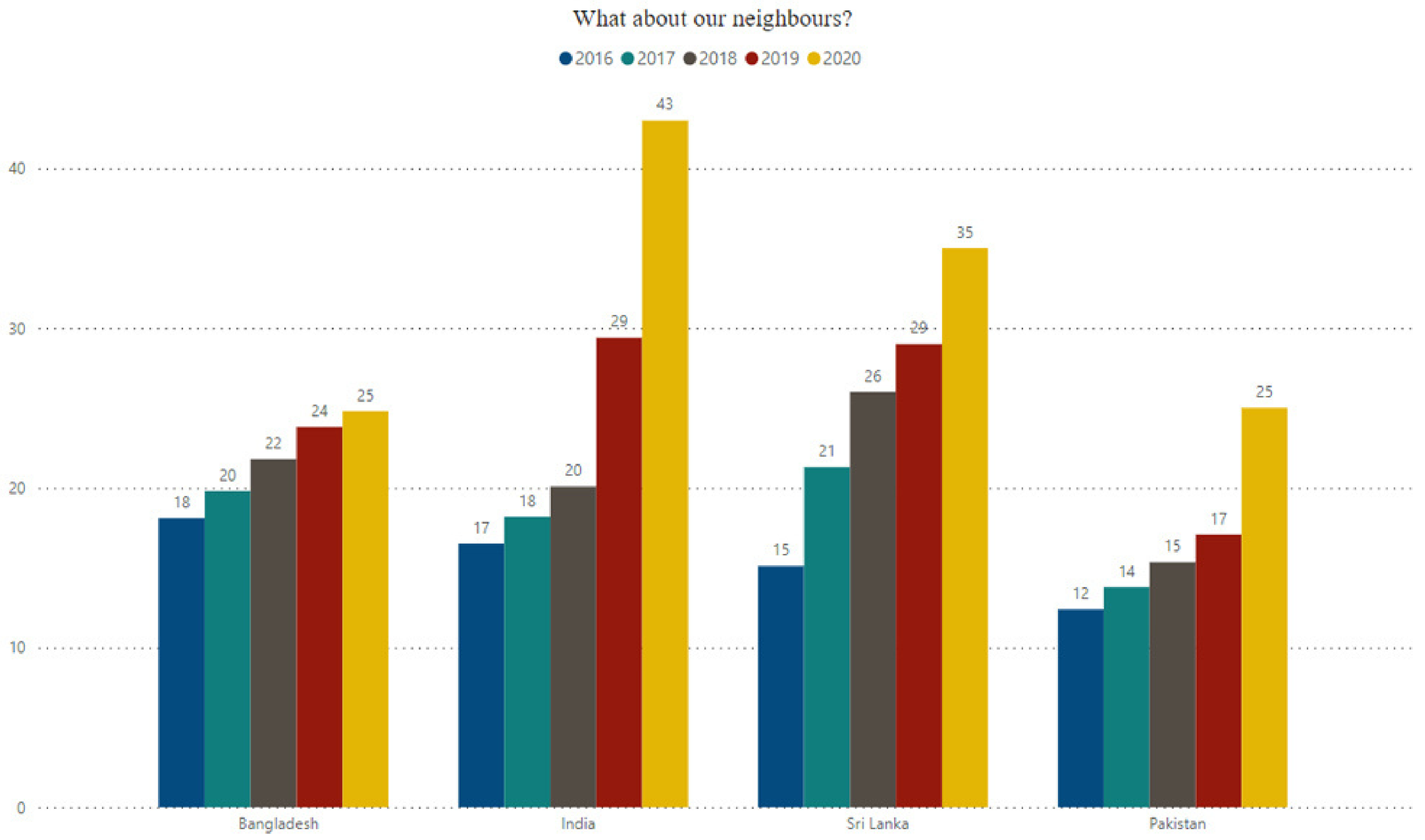
Out[29]:

	Country Name	Indicator Name	2000	2001	2002	2003	2004	2005	2006	2007	...	2012	2013	2014	2015	2016	
0	Aruba	Individuals using the Internet (% of population)	15.442823	17.100000	18.800000	20.800000	23.000000	25.400000	28.000000	30.900000	...	74.000000	78.900000	83.780000	88.661227	93.542454	97
1	Africa Eastern and Southern	Individuals using the Internet (% of population)	0.774218	0.961552	1.131629	1.430398	1.716047	1.805523	2.058102	2.773274	...	8.534750	10.126945	12.237716	14.593148	16.378025	18
2	Afghanistan	Individuals using the Internet (% of population)	0.000000	0.004723	0.004561	0.087891	0.105809	1.224148	2.107124	1.900000	...	5.454545	5.900000	7.000000	8.260000	11.000000	13
3	Africa Western and Central	Individuals using the Internet (% of population)	0.139445	0.210153	0.412122	0.657938	1.176318	2.322416	3.458341	4.233399	...	10.293655	12.577756	14.923441	18.179203	21.829266	25
4	Angola	Individuals using the Internet (% of population)	0.105046	0.136014	0.270377	0.370682	0.464815	1.143367	1.500000	1.700000	...	7.700000	13.000000	21.400000	22.000000	23.200000	26
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
261	Kosovo	Individuals using the Internet (% of population)	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	...	0.000000	0.000000	0.000000	0.000000	0.000000	83
262	Yemen, Rep.	Individuals using the Internet (% of population)	0.082500	0.090802	0.518796	0.604734	0.881223	1.048598	1.247824	5.010000	...	17.446500	20.000000	22.550000	24.085409	24.579208	26
263	South Africa	Individuals using the Internet (% of	5.348560	6.346619	6.710322	7.007692	8.425119	7.488543	7.607140	8.065375	...	41.000000	46.500000	49.000000	51.919116	54.000000	56


Percent of Population using Internet (2016 -2020)
2016
2017
2018
2019
2020
40
30
20
10
0
17
18
20
29
43
India


Percentage of Population using Internet
2018
2019
2020
0
20
40
60
80
91
93
95
88
89
91
79
81
84
59
64
70
20
29
43
United Kingdom
United States
Europe & Central Asia
China
India


Percent of Population using Internet (2000 - 2020)
2000
2005
2010
2015
2020
80
60
40
20
0
43
68
72
75
91
27
70
85
92
95
2
9
34
50
70
1
2
8
15
43
United States
United Kingdom
China
India


What about our neighbours?
2016
2017
2018
2019
2020
40
30
20
10
0
18
20
22
24
25
17
18
20
29
43
15
21
26
29
35
12
14
15
17
25
Bangladesh
India
Sri Lanka
Pakistan

INSIGHTS

1) The growth of the internet in India has been phenomenal compared to other superpowers in the world.

2) The early adaptation to the internet has been a significant factor in the growth of superpowers such as The USA, the UK and China.

3) The tremendous growth in India can be attributed to the cheap data rates offered by Jio, which was launched in 2016.

4) Sri Lanka, our nearest neighbour, is experiencing rapid growth in terms of the percentage of its population using the internet.

INSIGHTS

The graphs are not as simple as they look. There is factor that we are forgetting, that is the growth of the population. So, let is calculte the number of internet users by using the population data:

2016 - 227 Million users

2017 - 384 Million users

2018 - 462 Million users

2019 - 574 Million users

2020 - 622 Million users