-pandas is used for handle data frames. dataframes(tables) . -organization data stored in databse an data store in table format ,rows*column -pandas is powerful dataanalysis tool kit and it is a package. 1.it handle missing data 2.colums can be inserted and deleted fronm the dataframe 3.data alignment(series) 4.group by fuctions 5.pd+np+plt+sns 6.slicing and indexing 7. merging and joining 8.reshaping and piovoting 9.pandass can read excel file,csv file,xml,html,.h5 file 10.timeseries excel shet---.dataset number->numerical data text->categorical adat numb+text dataset-->numerical da

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

In [2]:
```
pd.__version__
```

Out[2]:
```
'2.3.1'
```

In [3]:
```
df=pd.read_csv(r"C:\Users\IPL4\Desktop\work\data - data (1).csv")

df
```

Out[3]:

	CountryName	CountryCode	BirthRate	InternetUsers	IncomeGroup
0	Aruba	ABW	10.244	78.9	High income
1	Afghanistan	AFG	35.253	5.9	Low income
2	Angola	AGO	45.985	19.1	Upper middle income
3	Albania	ALB	12.877	57.2	Upper middle income
4	United Arab Emirates	ARE	11.044	88.0	High income
...	...	...	...	...	...
190	Yemen, Rep.	YEM	32.947	20.0	Lower middle income
191	South Africa	ZAF	20.850	46.5	Upper middle income
192	Congo, Dem. Rep.	COD	42.394	2.2	Low income
193	Zambia	ZMB	40.471	15.4	Lower middle income
194	Zimbabwe	ZWE	35.715	18.5	Low income

195 rows × 5 columns

In [4]:
```
df.info() #information about the data frames
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 195 entries, 0 to 194
Data columns (total 5 columns):
 #   Column         Non-Null Count  Dtype  
---  ------         --------------  -----  
 0   CountryName    195 non-null    object 
 1   CountryCode    195 non-null    object 
 2   BirthRate      195 non-null    float64
 3   InternetUsers  195 non-null    float64
 4   IncomeGroup    195 non-null    object 
dtypes: float64(2), object(3)
memory usage: 7.7+ KB
```

In [5]:
```
len(df)
```

Out[5]: 195

In [6]:
```
df.shape
```

Out[6]: (195, 5)

In [7]:
```
df.columns
```

Out[7]:
```
Index(['CountryName', 'CountryCode', 'BirthRate', 'InternetUsers',
       'IncomeGroup'],
      dtype='object')
```

In [8]:
```
len(df.columns)
```

Out[8]: 5

In [9]:
```
df.isnull()
```

Out[9]:

	CountryName	CountryCode	BirthRate	InternetUsers	IncomeGroup
0	False	False	False	False	False
1	False	False	False	False	False
2	False	False	False	False	False
3	False	False	False	False	False
4	False	False	False	False	False
...	...	...	...	...	...
190	False	False	False	False	False
191	False	False	False	False	False
192	False	False	False	False	False
193	False	False	False	False	False
194	False	False	False	False	False

195 rows × 5 columns

In [10]:
```
df.isnull().sum()  #to check count of missing values
```

Out[10]:
```
CountryName      0
CountryCode      0
BirthRate        0
InternetUsers    0
IncomeGroup      0
dtype: int64
```

In [ ]: