Matplotlib

In [8]:

data.describe

```
import matplotlib as mpl
In [3]:
         import matplotlib.pyplot as plt
         import pandas as pd
         import numpy as np
         data = pd.read_csv('C:/Users/coviddistrict.csv')
In [5]:
         data.head(15)
         #it lists the first 15 datasets
Out[5]:
                  district active confirmed recovered deceased
          0 Ahmadnagar
                             17
                                       42
                                                  23
                                                             2
          1
                             69
                                       79
                                                  10
                                                             0
                Yavatmal
                                        2
          2
                 Washim
                              1
                                                   1
                                                             0
          3
                             93
                                       99
                                                   0
                                                             6
                  Solapur
                                        2
               Sindhudurg
                              1
                                                   1
                                                             0
          4
                                       32
                                                   9
                                                             2
          5
                  Satara
                             21
          6
                   Sangli
                              3
                                       29
                                                  25
                                                             1
                              2
          7
                                        8
                                                   5
                 Ratnagiri
                                                             1
          8
                 Raigarh
                             44
                                       71
                                                  24
                                                             3
                 Parbhani
                                        2
                                                             0
          9
         10
                  Palghar
                            119
                                       169
                                                  46
                                                             4
                                        3
                                                   3
         11
              Osmanabad
                              0
                                                             0
         12
                  Nashik
                            179
                                       197
                                                   6
                                                            12
         13
               Nandurbar
                             10
                                        11
                                                   0
                                                             1
                 Nanded
                                        3
                                                   0
                                                             0
In [6]:
         data.tail(15)
         #it lists the bottom 15 datasets
Out[6]:
                  district active confirmed recovered deceased
                             30
                                       40
                                                   1
                                                             9
         19
                 Jalgaon
         20
                  Hingoli
                             14
                                        15
                                                             0
                              0
                                        1
                                                   1
                                                             0
         21
                 Gondiya
                                       25
                                                   0
         22
                   Dhule
                             22
                                                             3
                                        2
                                                   2
         23
              Chandrapur
                              0
                                                             0
                              3
                                       21
                                                  17
         24
                 Buldana
                              0
                                         1
                                                   1
         25
                     Bid
                                                             0
                                         1
                                                   0
                                                             0
         26
                Bhandara
         27
                            102
                                       131
                                                  22
                                                             7
              Aurangabad
                                       28
         28
                             17
                                                   4
                 Amravati
                                                             7
                                                   8
         29
                   Akola
                             30
                                       39
                                                             1
         30
             Ahmadnagar
                             17
                                       42
                                                  23
                                                             2
                                      7061
                                                1092
                                                           290
         31
                 Mumbai
                           5679
         32
                   Thane
                            755
                                      943
                                                 172
                                                            16
         33
                    Pune
                            912
                                      1248
                                                 248
                                                            88
```

```
<bound method NDFrame.describe of</pre>
                                                   district active confirmed recovered deceased
Out[8]:
             Ahmadnagar
                             17
                                                     23
               Yavatmal
                              69
                                         79
                                                     10
                                                                 0
                 Washim
                                                                 0
                                                      1
                                                                 6
        3
                Solapur
                              93
                                         99
                                                      0
                                          2
                                                                 0
            Sindhudurg
                              1
                                                      1
                 Satara
                              21
                                                      9
        6
                                         29
                                                     25
                                                                 1
                 Sangli
                              3
        7
             Ratnagiri
                               2
                                          8
                                                      5
                                                                 1
                                         71
                                                     24
                                                                 3
        8
               Raigarh
                              44
               Parbhani
                              1
                                          2
                                                      1
                                                                 0
        10
                            119
                                        169
                                                     46
                                                                 4
               Palghar
             0smanabad
                                                                 0
        11
                              0
                                          3
                                                      3
        12
                 Nashik
                             179
                                        197
                                                      6
                                                                12
                                                                 1
        13
              Nandurbar
                             10
                                         11
                                                      0
                                                                 0
        14
                 Nanded
                              3
                                                      0
        15
                 Nagpur
                             100
                                        139
                                                     37
                                                                 2
        16
                                                      8
                  Latur
                                         12
               Kolhapur
                                                      4
                                                                 0
        17
                             10
                                         14
                                                     17
        18
                Buldana
                              3
                                         21
                                                                 1
        19
                Jalgaon
                                         40
                                                                 9
        20
                              14
                                         15
                                                      1
                                                                 0
                Hingoli
                                                                 0
        21
                Gondiya
                              Θ
                                          1
                                                      1
        22
                  Dhule
                              22
                                         25
                                                      0
                                                                 3
        23
            Chandrapur
                              0
                                                      2
                                                                 0
        24
                                         21
                                                     17
                                                                 1
                Buldana
                              3
        25
                              0
                                                                 0
                    Bid
                                          1
                                                      1
        26
               Bhandara
                              1
                                          1
                                                      0
                                                                 0
                                                                 7
        27
            Aurangabad
                             102
                                        131
                                                     22
                                                                 7
                                                      4
        28
                             17
                                         28
               Amravati
        29
                  Akola
                             30
                                         39
                                                      8
                                                                 1
            Ahmadnagar
                             17
                                         42
                                                     23
                                                                 2
                            5679
        31
                 Mumbai
                                       7061
                                                   1092
                                                               290
        32
                  Thane
                            755
                                        943
                                                    172
                                                                16
        33
                             912
                                       1248
                                                    248
```

In [9]: data.describe()

Out[9]:

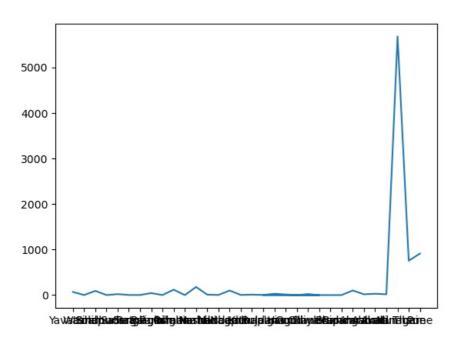
	active	confirmed	recovered	deceased
count	34.000000	34.000000	34.000000	34.000000
mean	242.970588	309.794118	53.294118	13.529412
std	980.593867	1220.754108	190.232000	51.136321
min	0.000000	1.000000	0.000000	0.000000
25%	2.250000	4.250000	1.000000	0.000000
50%	15.500000	26.500000	5.500000	1.000000
75%	62.750000	77.000000	22.750000	3.750000
max	5679.000000	7061.000000	1092.000000	290.000000

Simple Line Graph

```
In [13]: Y = data.iloc[1:,1].values
    R = data.iloc[1:,2].values
    D = data.iloc[1:,3].values
    W = data.iloc[1:,4].values
    X = data.iloc[1:,0]

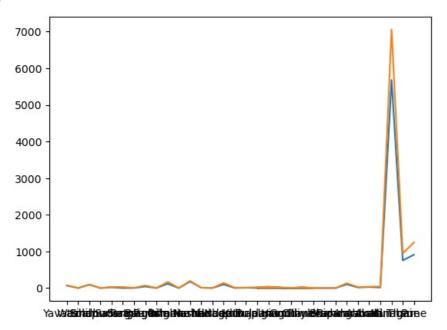
#line plot between district(X) and active cases(Y)
plt.plot(X, Y)
```

Out[13]: [<matplotlib.lines.Line2D at 0x235471f9670>]

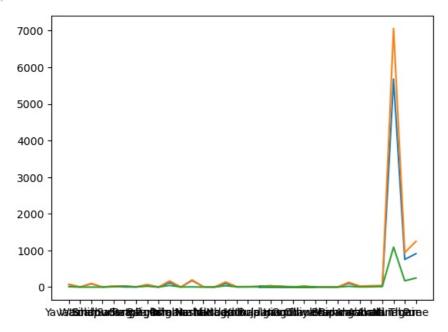


```
In [15]: #Line plot between District(X) and Active cases(Y)
plt.plot(X, Y)
#Line plot between District(X) and Confirmed cases(R)
plt.plot(X, R)
```

Out[15]: [<matplotlib.lines.Line2D at 0x235472f2f40>]

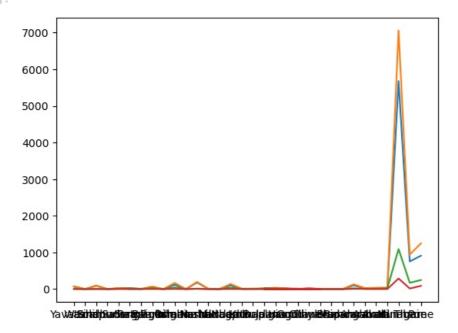


```
In [16]: #Line plot between District(X) and Active cases(Y)
plt.plot(X, Y)
#Line plot between District(X) and Confirmed cases(R)
plt.plot(X, R)
#Line plot between District(X) and Recovered cases(D)
plt.plot(X, D)
```



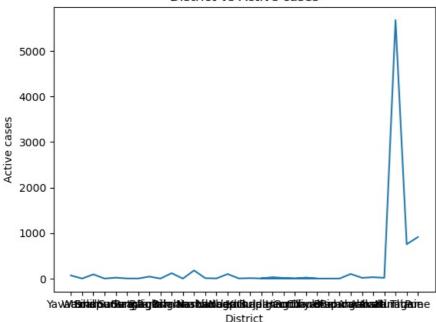
```
In [17]: #Line plot between District(X) and Active cases(Y)
    plt.plot(X, Y)
    #Line plot between District(X) and Confirmed cases(R)
    plt.plot(X, R)
    #Line plot between District(X) and Recovered cases(D)
    plt.plot(X, D)
    #Line plot between District(X) and Deceased cases(W)
    plt.plot(X, W)
```

Out[17]: [<matplotlib.lines.Line2D at 0x235474a2850>]

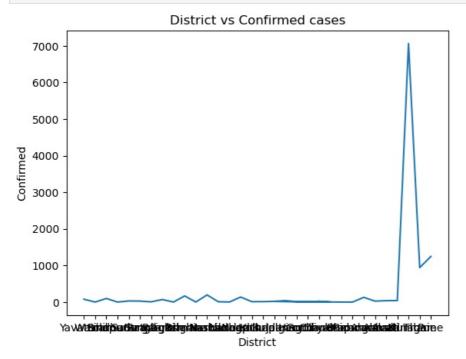


```
In [18]: plt.plot(X, Y)
   plt.xlabel('District')
   plt.ylabel('Active cases')
   plt.title('District vs Active cases')
   plt.show()
```

District vs Active cases

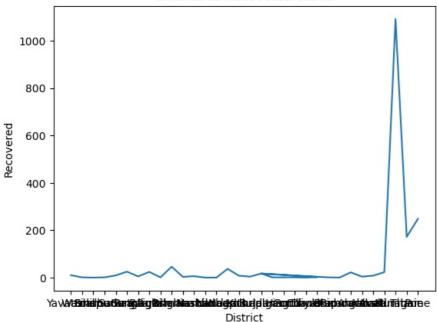


```
In [19]: plt.plot(X, R)
   plt.xlabel('District')
   plt.ylabel('Confirmed')
   plt.title('District vs Confirmed cases')
   plt.show()
```

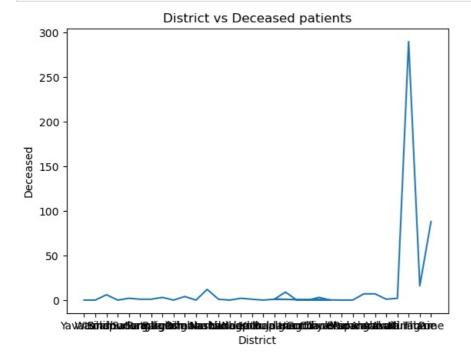


```
In [20]: plt.plot(X, D)
    plt.xlabel('District')
    plt.ylabel('Recovered')
    plt.title('District vs Recovered cases')
    plt.show()
```

District vs Recovered cases

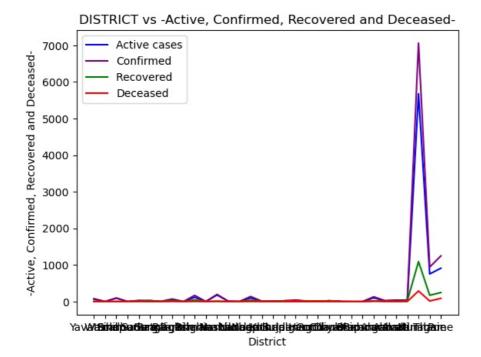


```
In [21]: plt.plot(X, W)
   plt.xlabel('District')
   plt.ylabel('Deceased')
   plt.title('District vs Deceased patients')
   plt.show()
```



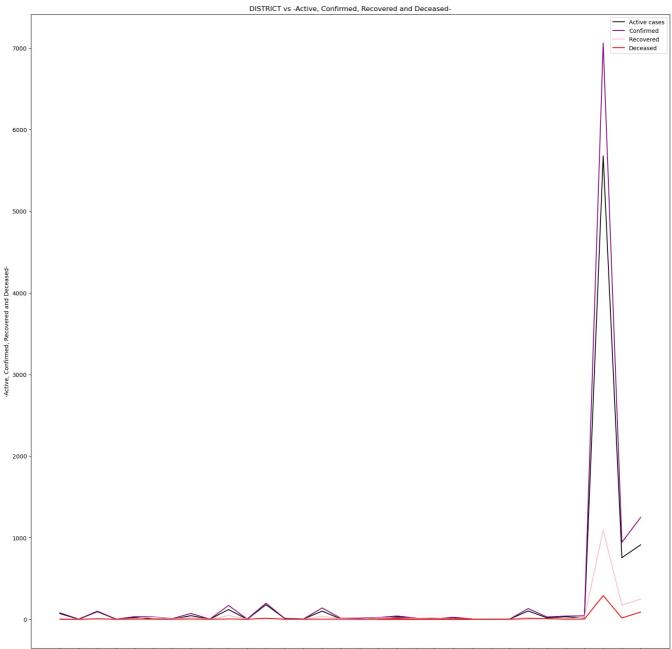
Adding legends for the graph

```
In [23]: # District vs Active cases
plt.plot(X, Y, label="Active cases", color ="blue")
# District vs Confirmed cases
plt.plot(X, R, label="Confirmed", color = "purple")
# District vs Recovered cases
plt.plot(X, D, label="Recovered", color ="Green")
# District vs Deceased patients
plt.plot(X, W, label="Deceased", color ="red")
plt.xlabel('District')
plt.ylabel('-Active, Confirmed, Recovered and Deceased-')
plt.title('DISTRICT vs -Active, Confirmed, Recovered and Deceased-')
plt.legend()
plt.show()
```



Customization in the graph

```
In [40]: plt.figure(figsize=(20,20))
# District vs Active cases
plt.plot(X, Y, label="Active cases", color ="black")
# District vs Confirmed cases
plt.plot(X, R, label="Confirmed", color = "purple")
# District vs Recovered cases
plt.plot(X, D, label="Recovered " , color ="pink")
# District vs Deceased patients
plt.plot(X, W, label="Deceased", color ="red")
plt.xlabel('District')
plt.ylabel('-Active, Confirmed, Recovered and Deceased-')
plt.title('DISTRICT vs -Active, Confirmed, Recovered and Deceased-')
plt.legend()
plt.show()
```

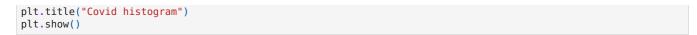


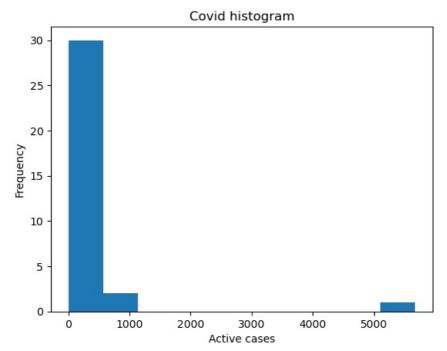
Yavatm Washir6ola psindhudu6gtara SangRatnagRaigarParbharRaigi0smanabMashNandurbNandedlagpur LaturKolhap@uldanjalgaorHingol6ondiyaDhufahandrapu8id BhandarangaAmadavatAkAfbmadnagambalThane Pune District

```
In [39]: plt.figure(figsize=(20,30))
# District vs Active cases
# By writing linewidth, we can increase or decrease the width of the line in line graph.
# By writing marker, we can designate the end point of the line graph as a marker.
plt.plot(X, Y, label="Active cases", color ="blue", linewidth = 4, marker ='o', markersize='15')
# District vs Confirmed cases
plt.plot(X, R, label="Confirmed", color = "purple", linewidth = 4, marker ='x', markersize='15')
# District vs Recovered cases
plt.plot(X, D, label="Recovered", color ="pink", linewidth = 4, marker ='*', markersize='15')
# District vs Deceased patients
plt.plot(X, W, label="Deceased", color ="red", linewidth = 4, marker ='+', markersize='15')
plt.xlabel('District')
plt.ylabel('-Active, Confirmed, Recovered and Deceased-')
plt.title('DISTRICT vs -Active, Confirmed, Recovered and Deceased-')
plt.legend()
plt.show()
```

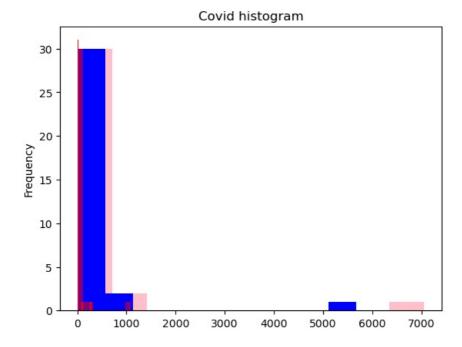
Yavatmillashirfsolagsindhudusgtara Sang Ratnag Raigarfferbharffalg lössmanabhlashNandurbhlandedlagpur LaturKolhap läxildan jalgaorHingollsondiya Dhutkhandrap u Bid Bhandaranga hardavatik kollamadna njamba Thane Pune District

Histogram



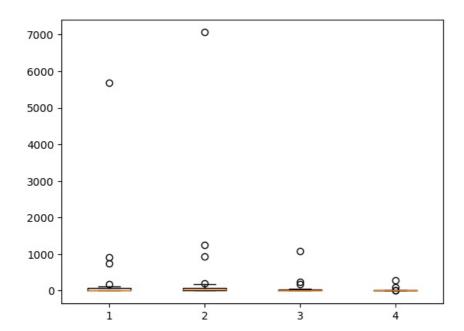


```
In [41]:
    plt.hist(R, label="Confirmed",color="pink")
    plt.hist(Y, label="Active Cases",color="blue")
    plt.hist(D, label="Recovered",color="purple")
    plt.hist(W, label="Deceseaed",color="red")
    plt.ylabel("Frequency")
    plt.title("Covid histogram")
    plt.show()
```



Box Plot

```
In [30]: collections = [Y, R, D, W]
plt.boxplot(collections)
plt.show()
```



Bar Graph

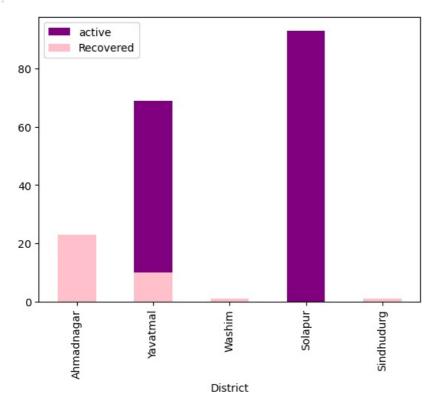
```
In [34]:

df = pd.DataFrame({
    'District': ['Ahmadnagar', 'Yavatmal', 'Washim', 'Solapur', 'Sindhudurg'],
    'active': [17,69,1,93,1],
    'Confirmed': [42,79,2,99,2],
    'Recovered': [23,10,1,0,1],
    'Deceased': [2,0,0,6,0]

})

ax = df.plot(x="District", y="active", kind="bar", color="purple")
    df.plot(x="District", y="Recovered", kind="bar", ax=ax, color="pink")
```

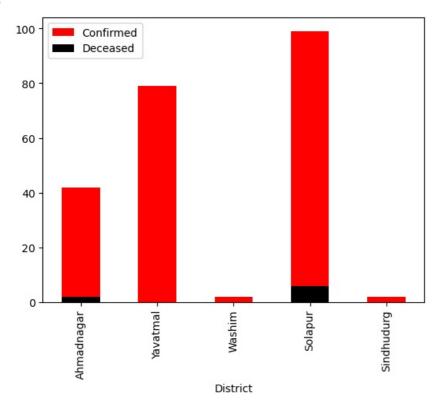
Out[34]: <AxesSubplot:xlabel='District'>



```
In [36]:
    df = pd.DataFrame({
        'District': ['Ahmadnagar', 'Yavatmal', 'Washim', 'Solapur', 'Sindhudurg'],
        'active':[17,69,1,93,1],
        'Confirmed': [42,79,2,99,2],
        'Recovered':[23,10,1,0,1],
        'Deceased':[2,0,0,6,0]

})
    ax = df.plot(x="District",y="Confirmed",kind="bar",color="red")
    df.plot(x="District", y="Deceased", kind="bar", ax=ax, color="black")
```

Out[36]: <AxesSubplot:xlabel='District'>



Loading [MathJax]/jax/output/CommonHTML/fonts/TeX/fontdata.js