Matplotlib

In [1]:
```
import matplotlib as mpl
import matplotlib.pyplot as plt
import numpy as np
import pandas as pd
```

In [2]:
```
%matplotlib inline
```

In [8]:
```
data = pd.read_csv('District.csv')
```

In [9]:
```
data.head(10)
```

Out[9]:

	district	active	confirmed	recovered	deceased
0	Ahmadnagar	17	42	23	2
1	Yavatmal	69	79	10	0
2	Washim	1	2	1	0
3	Solapur	93	99	0	6
4	Sindhudurg	1	2	1	0
5	Satara	21	32	9	2
6	Sangli	3	29	25	1
7	Ratnagiri	2	8	5	1
8	Raigarh	44	71	24	3
9	Parbhani	1	2	1	0

In [10]:
```
data.tail(10)
```

Out[10]:

	district	active	confirmed	recovered	deceased
24	Buldana	3	21	17	1
25	Bid	0	1	1	0
26	Bhandara	1	1	0	0
27	Aurangabad	102	131	22	7
28	Amravati	17	28	4	7
29	Akola	30	39	8	1
30	Ahmadnagar	17	42	23	2
31	Mumbai	5679	7061	1092	290
32	Thane	755	943	172	16
33	Pune	912	1248	248	88

In [11]:
```
data.describe
```

Out[11]:
```
<bound method NDFrame.describe of       district  active  confirmed  recovered  de
ceased
0   Ahmadnagar      17         42         23         2
1     Yavatmal      69         79         10         0
2       Washim       1          2          1         0
3      Solapur      93         99          0         6
4   Sindhudurg       1          2          1         0
5       Satara      21         32          9         2
6       Sangli       3         29         25         1
7    Ratnagiri       2          8          5         1
8      Raigarh      44         71         24         3
9     Parbhani       1          2          1         0
10     Palghar     119        169         46         4
11   Osmanabad       0          3          3         0
12      Nashik     179        197          6        12
13   Nandurbar      10         11          0         1
14      Nanded       3          3          0         0
15      Nagpur     100        139         37         2
16       Latur       3         12          8         1
17    Kolhapur      10         14          4         0
18     Buldana       3         21         17         1
19     Jalgaon      30         40          1         9
20     Hingoli      14         15          1         0
21     Gondiya       0          1          1         0
22       Dhule      22         25          0         3
23  Chandrapur       0          2          2         0
24     Buldana       3         21         17         1
25         Bid       0          1          1         0
26    Bhandara       1          1          0         0
27  Aurangabad     102        131         22         7
28    Amravati      17         28          4         7
29       Akola      30         39          8         1
30  Ahmadnagar      17         42         23         2
31      Mumbai    5679       7061       1092       290
32       Thane     755        943        172        16
33        Pune     912       1248        248        88>
```

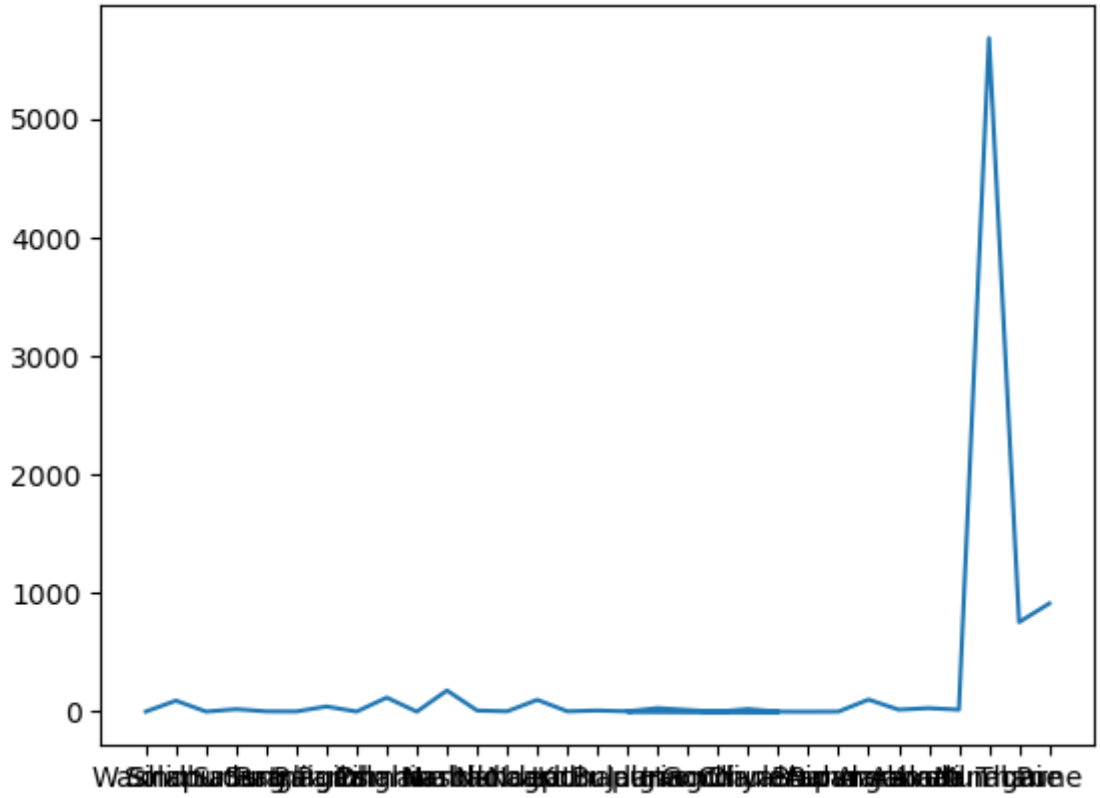
In [12]:
```
data.shape
```

Out[12]:
```
(34, 5)
```

Line plot

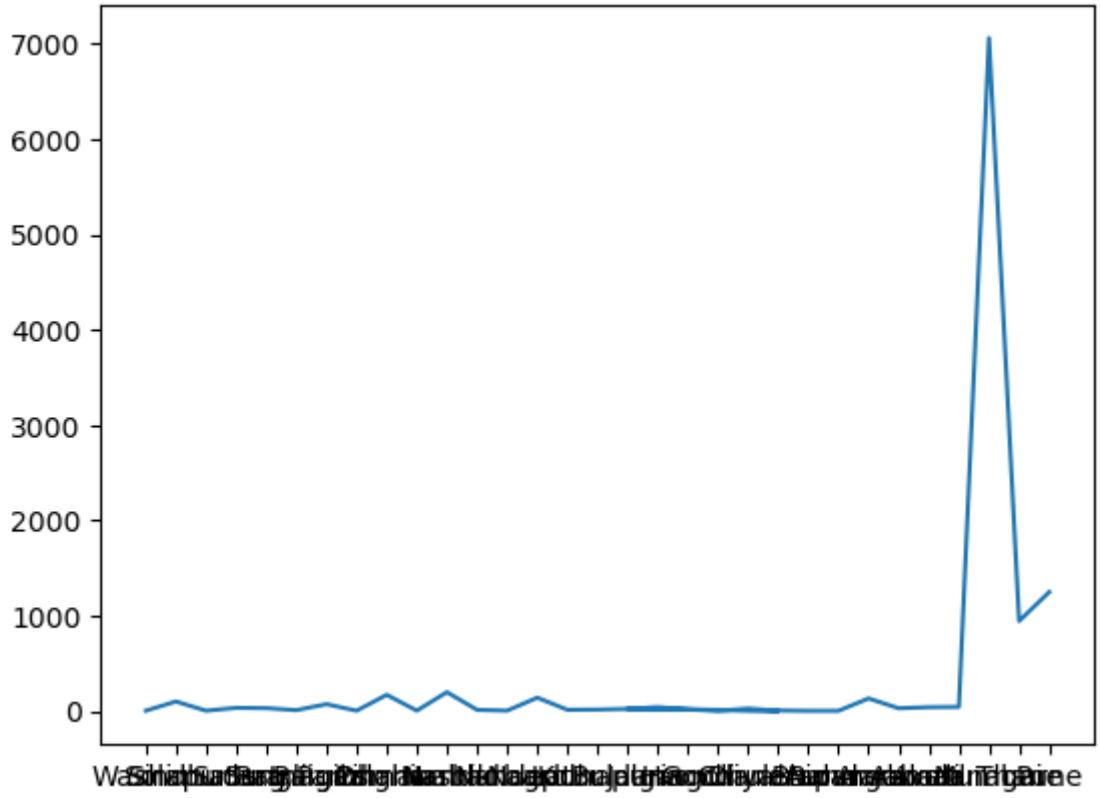
In [15]:
```
Y = data.iloc[2:,1].values
E = data.iloc[2:,2].values
H = data.iloc[2:,3].values
Q = data.iloc[2:,4].values
X = data.iloc[2:,0]
plt.plot(X, Y)
```

Out[15]:
```
[<matplotlib.lines.Line2D at 0x2330e00ef10>]
```



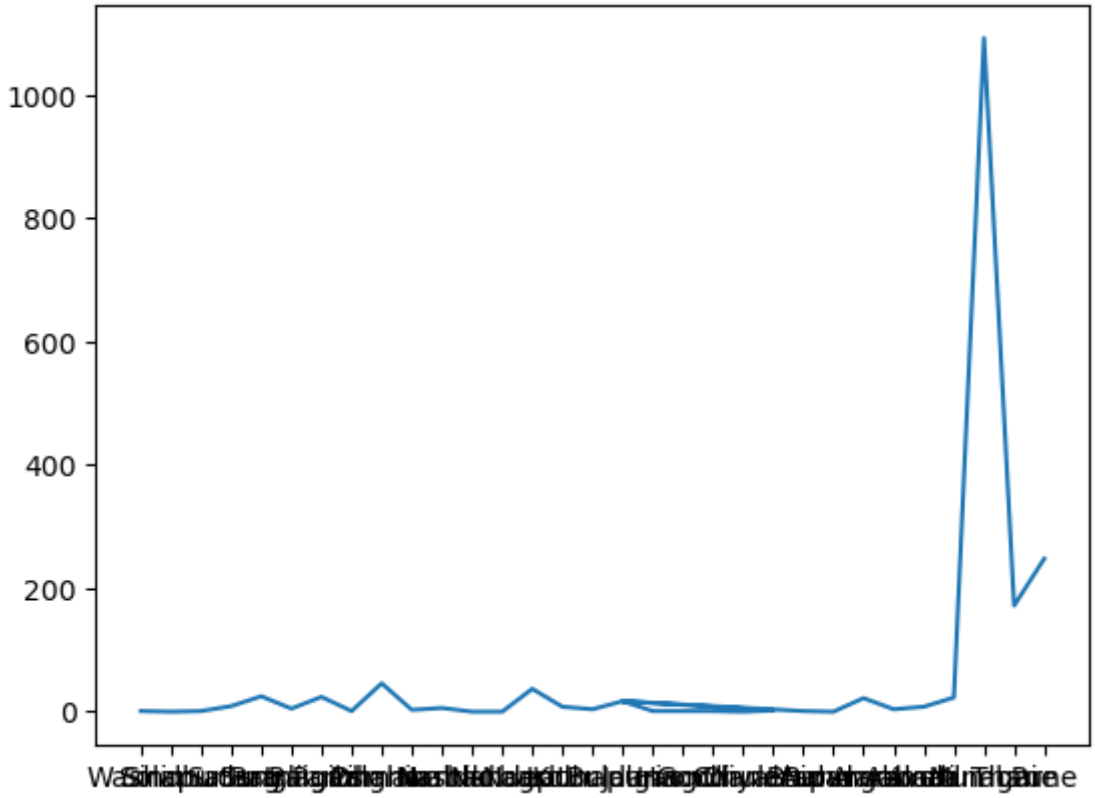
In [16]:
```
plt.plot(X,E)
```

Out[16]:
```
[<matplotlib.lines.Line2D at 0x2330e0a4e50>]
```



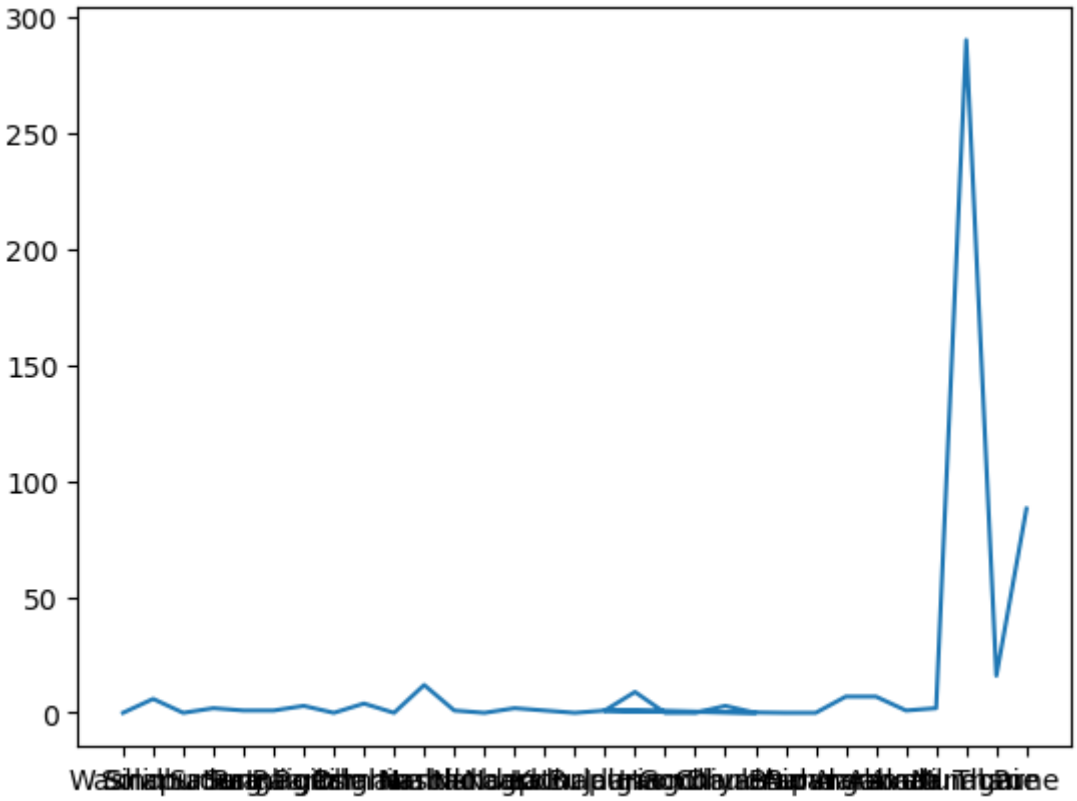
In [17]:
```
plt.plot(X, H)
```

Out[17]:
```
[<matplotlib.lines.Line2D at 0x2330e2563d0>]
```



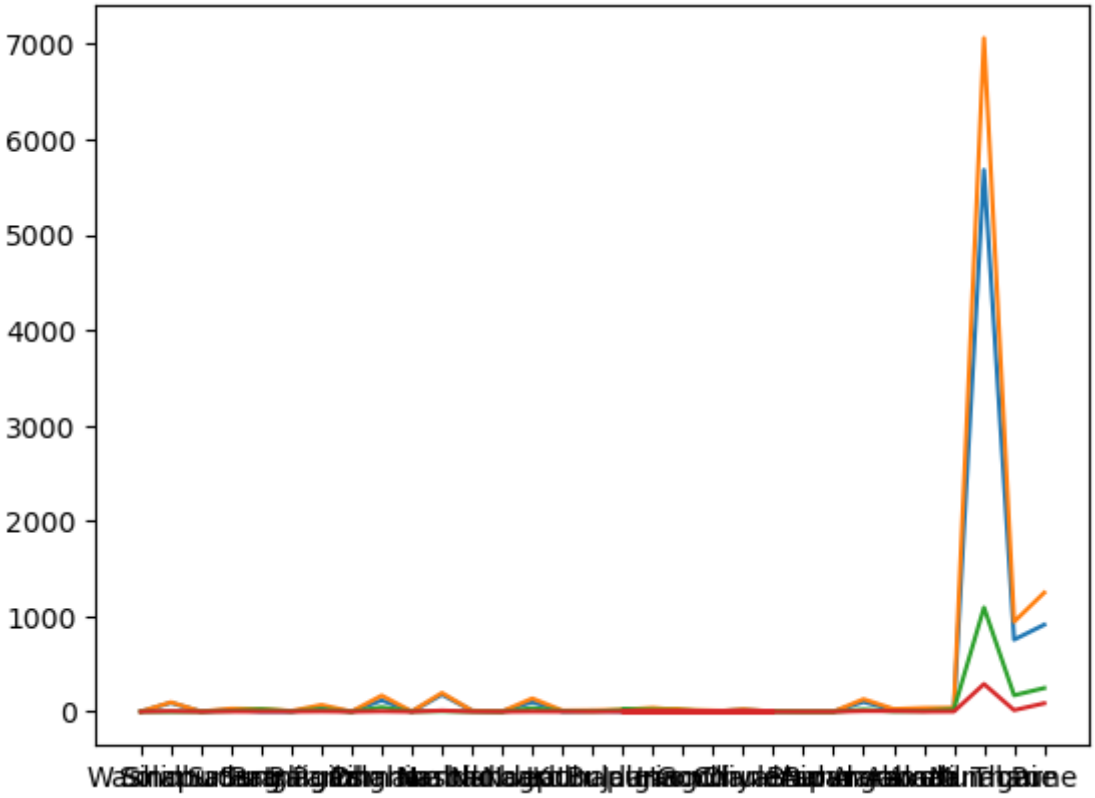
In [18]:
```
plt.plot(X,Q)
```

Out[18]:
```
[<matplotlib.lines.Line2D at 0x2330f2dc220>]
```



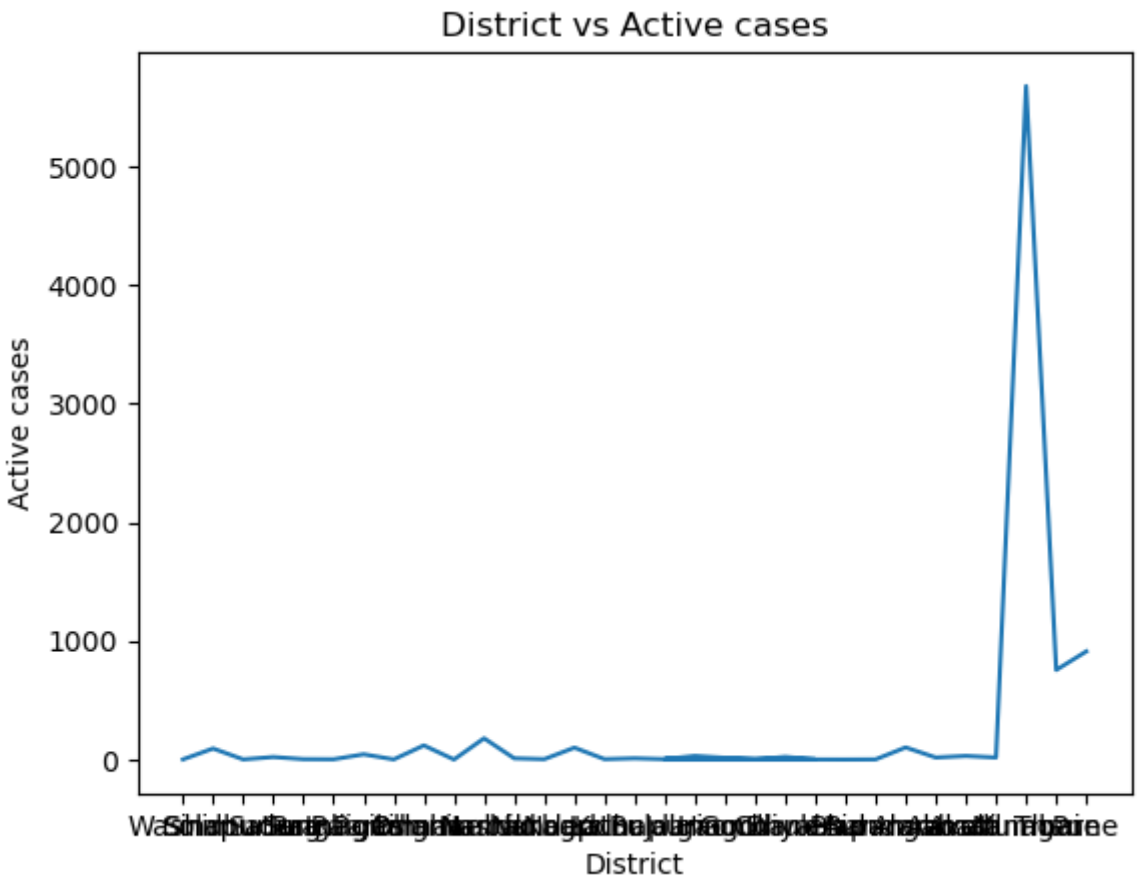
In [19]:
```
plt.plot(X,Y)
plt.plot(X,E)
plt.plot(X,H)
plt.plot(X,Q)
```

Out[19]:
```
[<matplotlib.lines.Line2D at 0x2330f4bdfa0>]
```

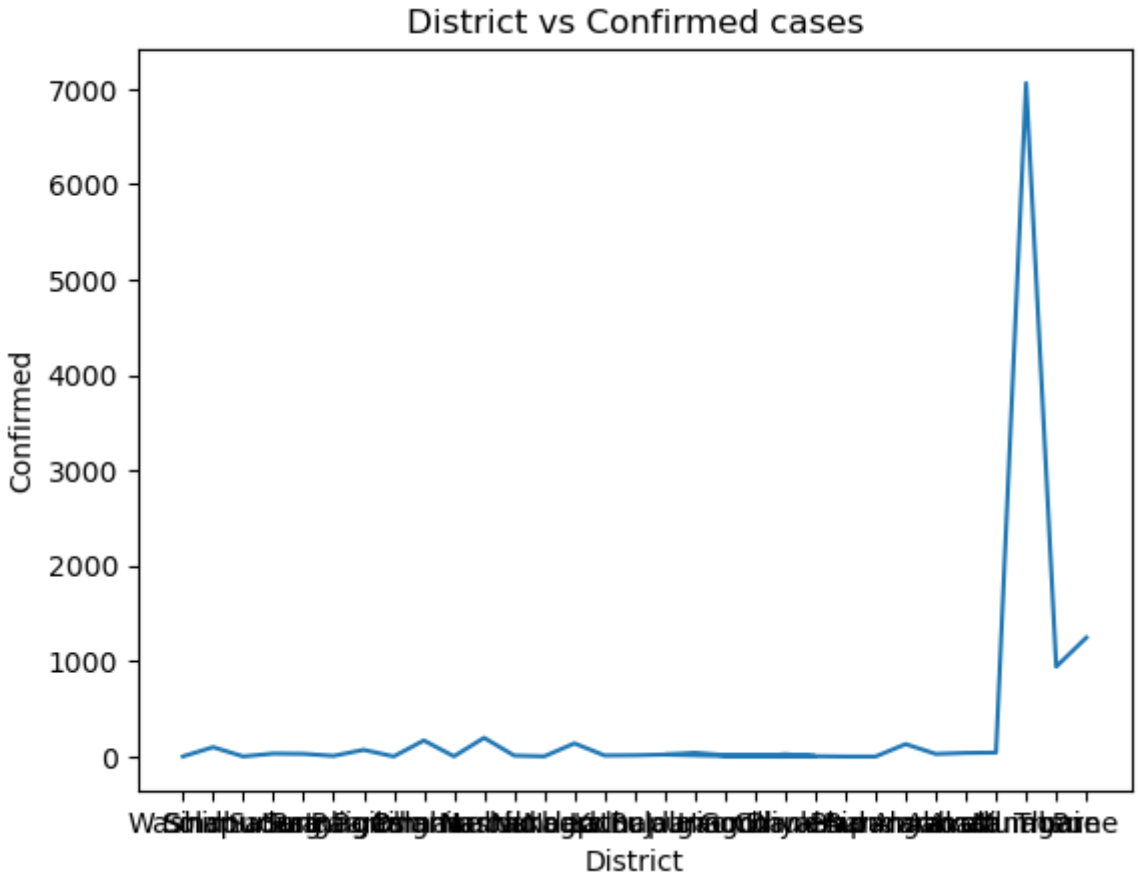


labels and titles

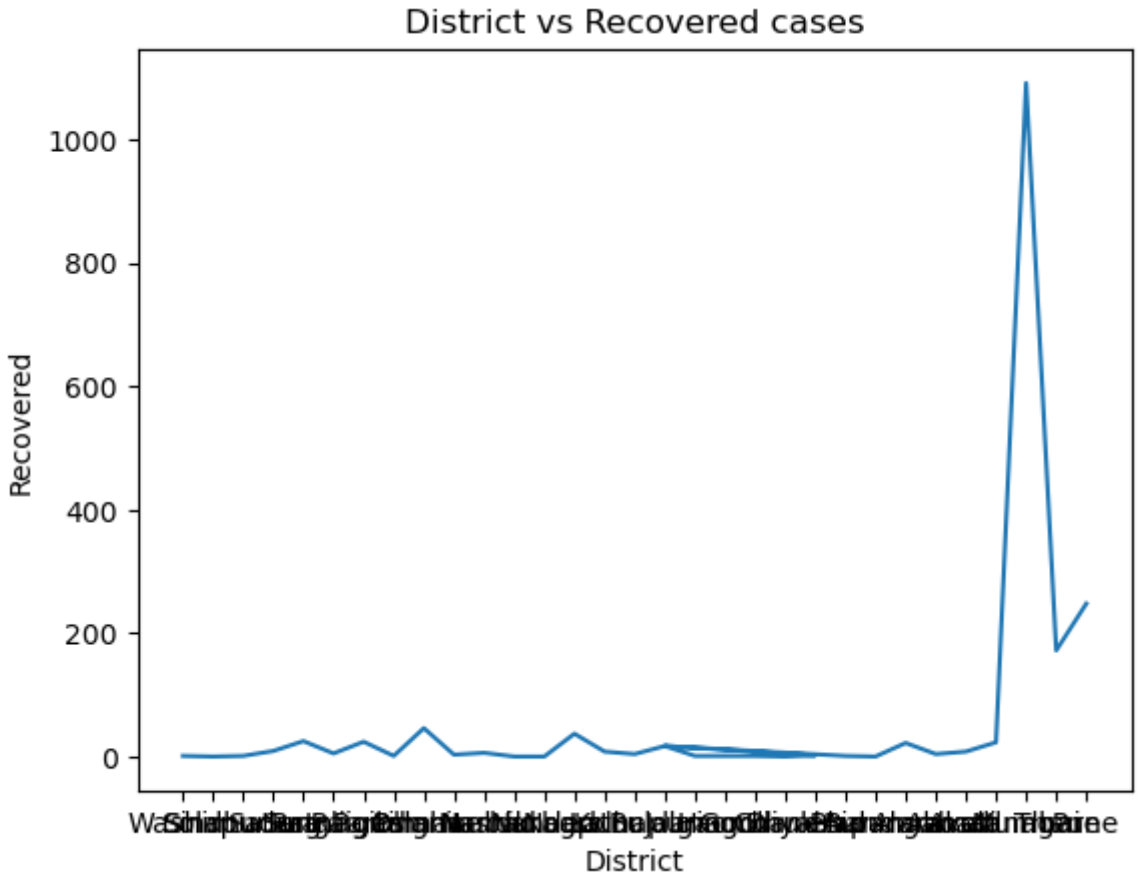
In [20]:
```
plt.plot(X, Y)
plt.xlabel('District')
plt.ylabel('Active cases')
plt.title('District vs Active cases')
plt.show()
```



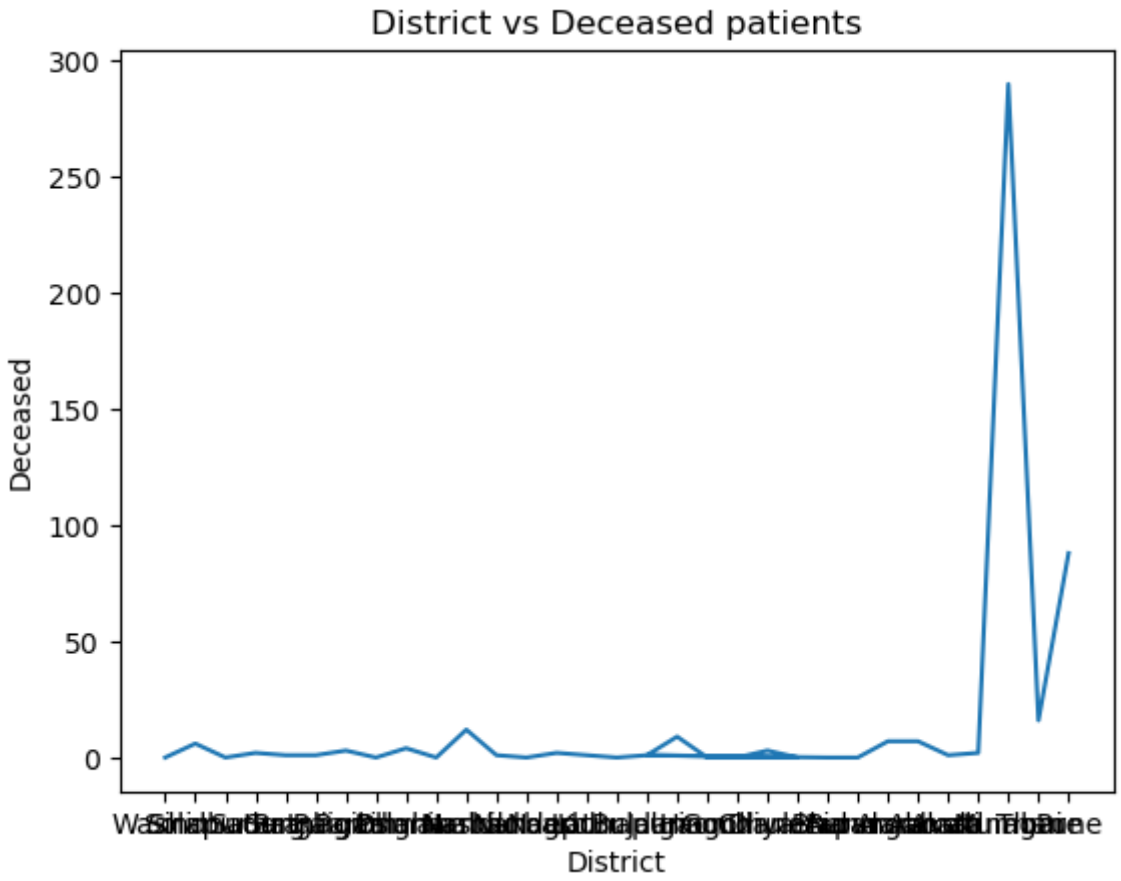
In [21]:
```
plt.plot(X, E)
plt.xlabel('District')
plt.ylabel('Confirmed')
plt.title('District vs Confirmed cases')
plt.show()
```



In [22]:
```
plt.plot(X, H)
plt.xlabel('District')
plt.ylabel('Recovered')
plt.title('District vs Recovered cases')
plt.show()
```

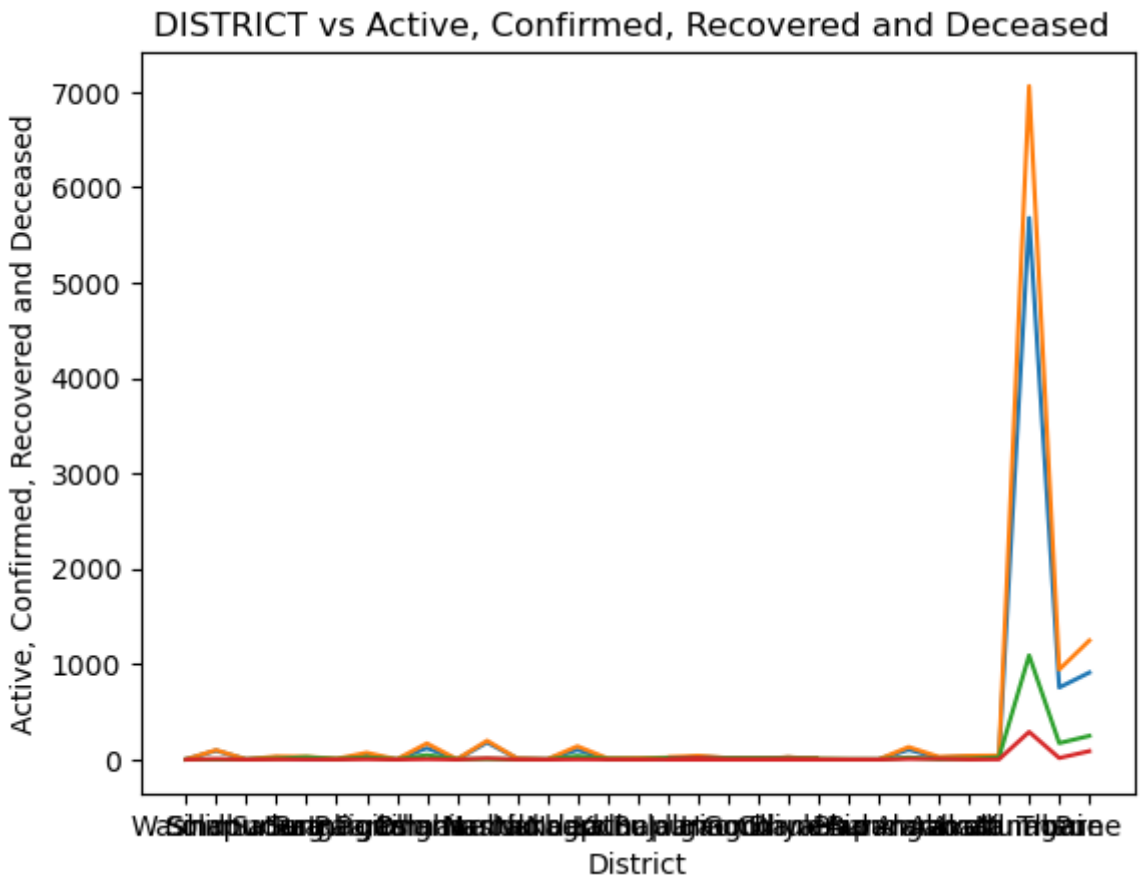


In [23]:
```
plt.plot(X, Q)
plt.xlabel('District')
plt.ylabel('Deceased')
plt.title('District vs Deceased patients')
plt.show()
```



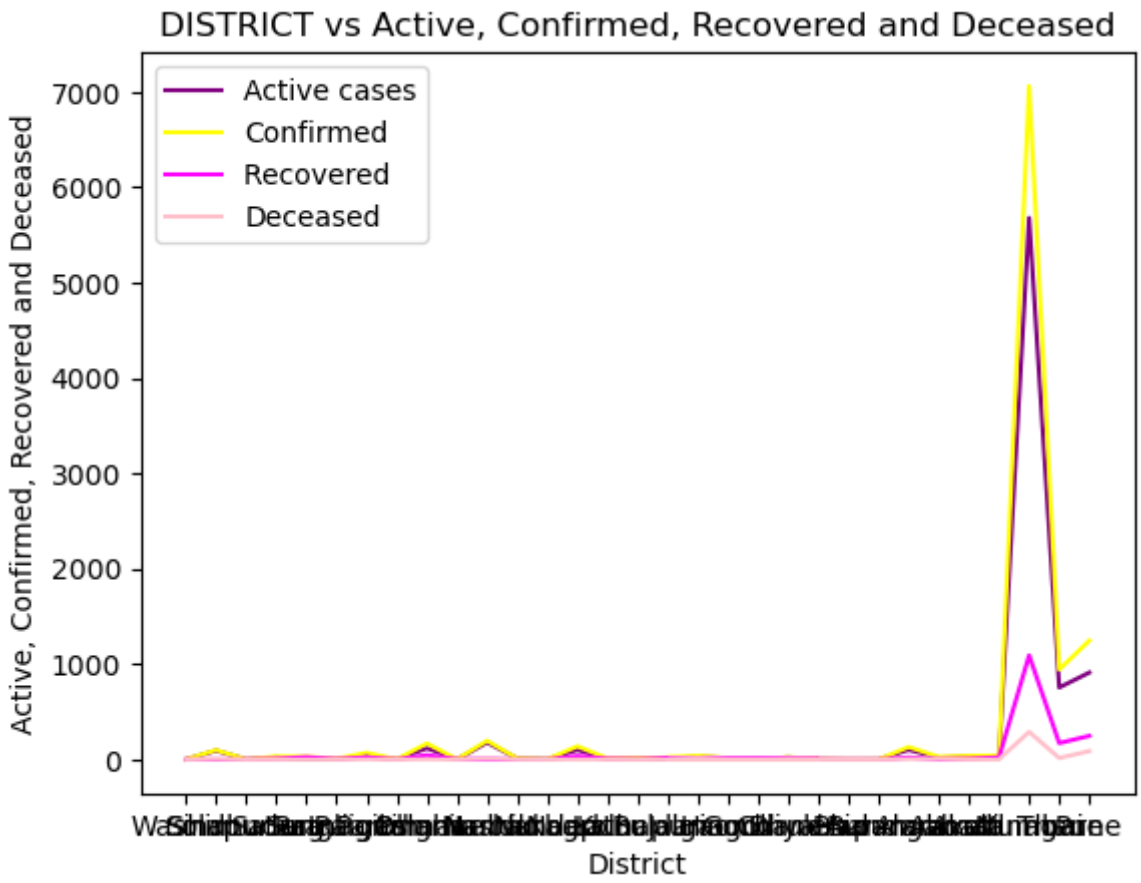
In [24]:
```
plt.plot(X,Y)
plt.plot(X,E)
plt.plot(X,H)
plt.plot(X,Q)


plt.xlabel('District')
plt.ylabel('Active, Confirmed, Recovered and Deceased')
plt.title('DISTRICT vs Active, Confirmed, Recovered and Deceased ')
plt.show()
```



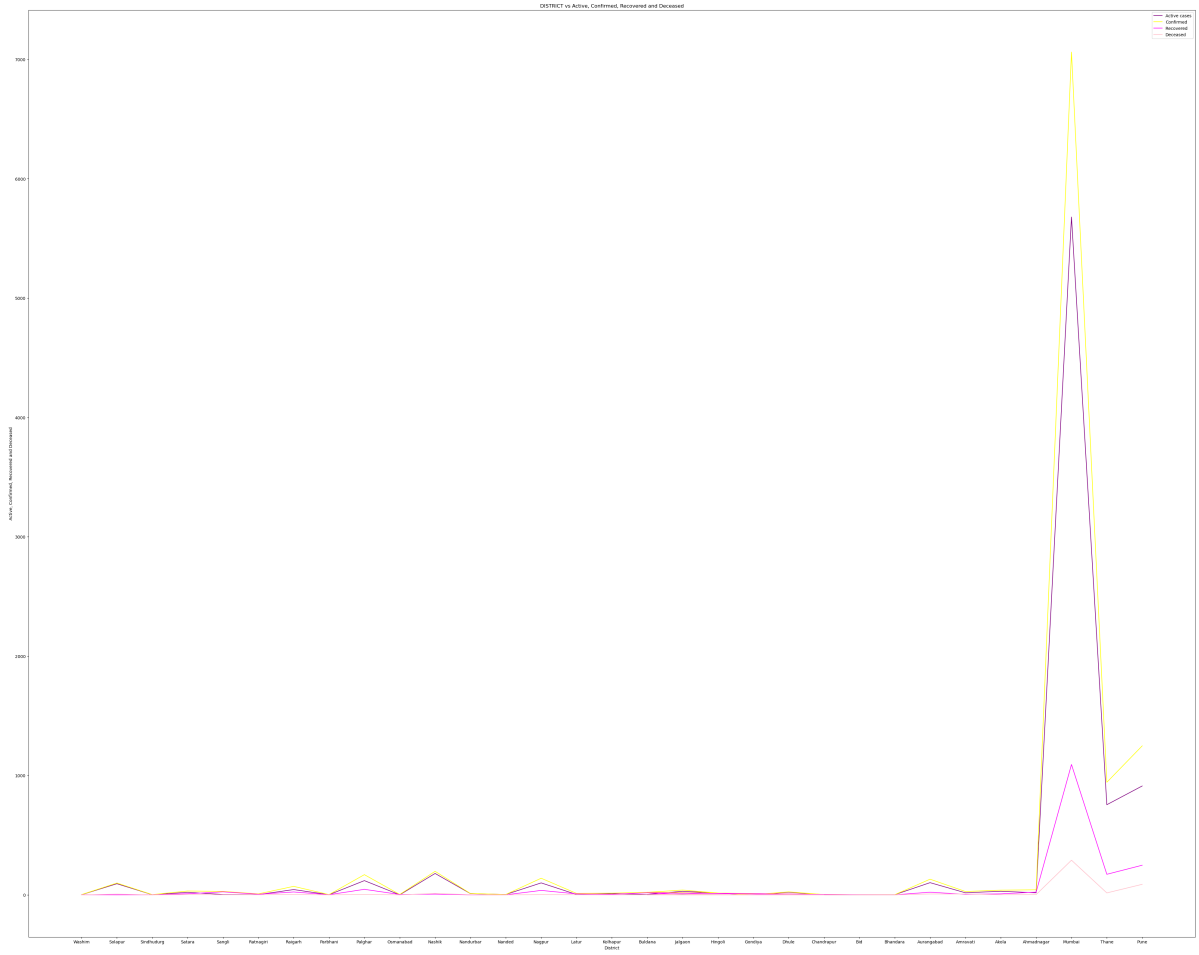
legends for the graphs

In [26]:
```
plt.plot(X, Y, label="Active cases", color ="purple")
plt.plot(X, E, label="Confirmed", color = "yellow")
plt.plot(X, H, label="Recovered " , color ="magenta")
plt.plot(X, Q, label="Deceased", color ="pink")
plt.xlabel('District')
plt.ylabel('Active, Confirmed, Recovered and Deceased')
plt.title('DISTRICT vs Active, Confirmed, Recovered and Deceased')
plt.legend()
plt.show()
```

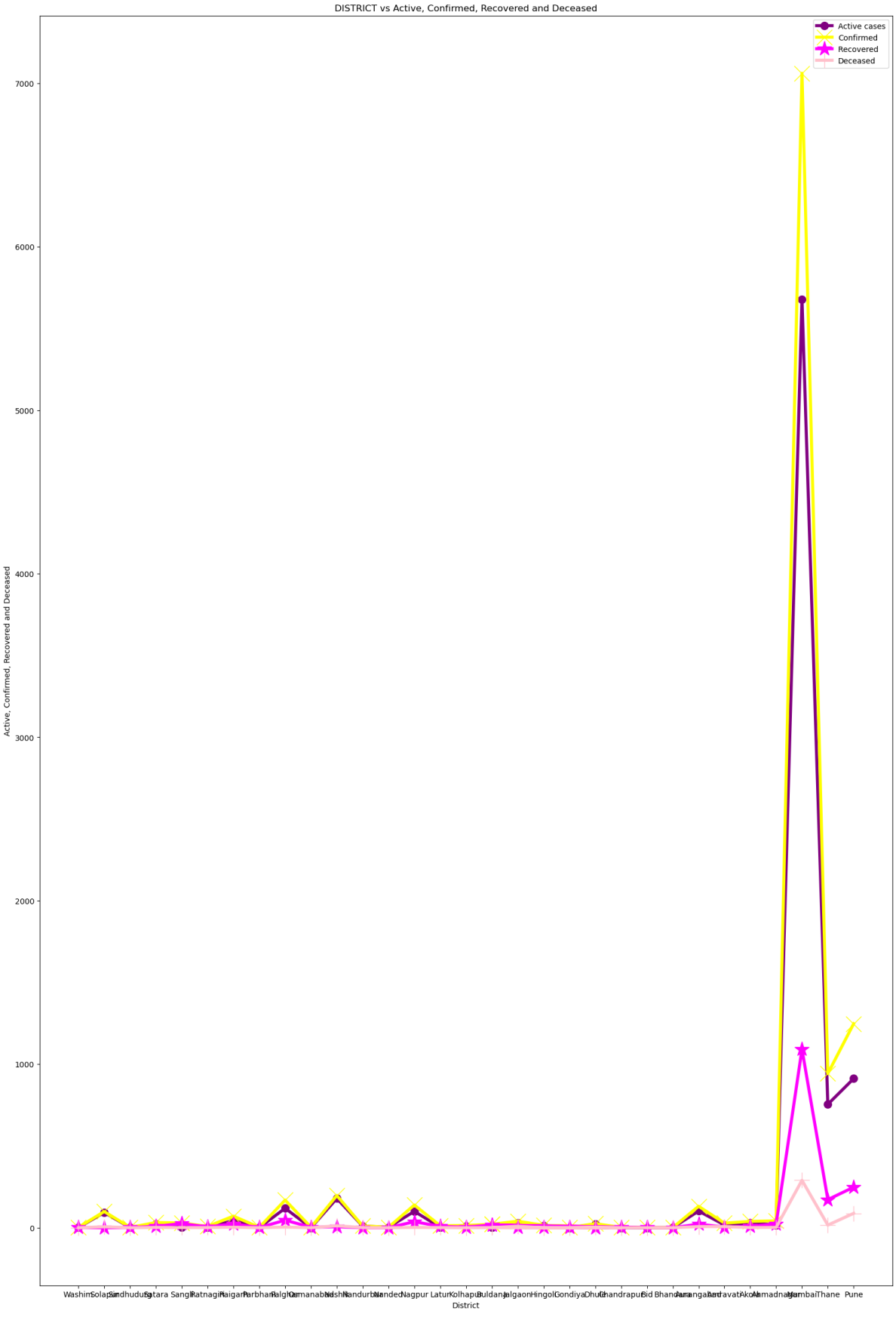


Customisation

In [28]:
```
plt.figure(figsize=(50,40))
plt.plot(X, Y, label="Active cases", color ="Purple")
plt.plot(X, E, label="Confirmed", color = "Yellow")
plt.plot(X, H, label="Recovered " , color ="Magenta")
plt.plot(X, Q, label="Deceased", color ="Pink")
plt.xlabel('District')
plt.ylabel('Active, Confirmed, Recovered and Deceased')
plt.title('DISTRICT vs Active, Confirmed, Recovered and Deceased')
plt.legend()
plt.show()
```

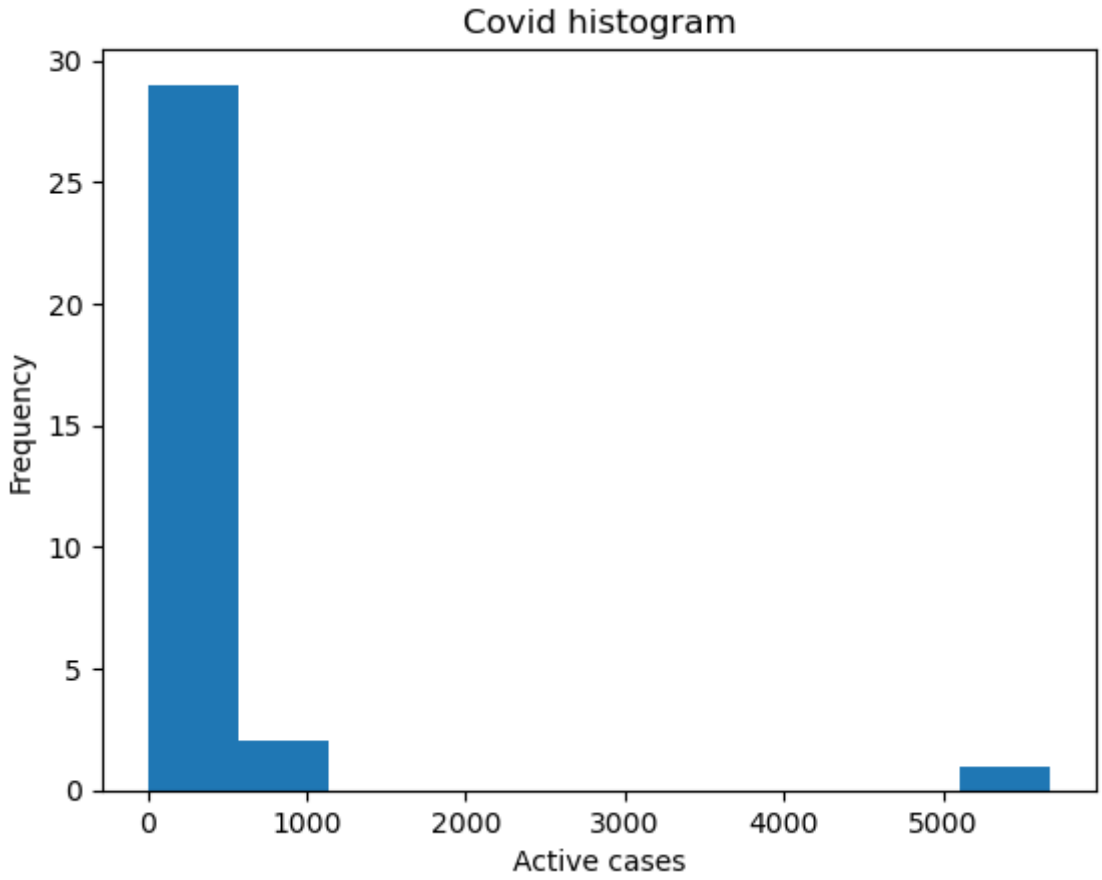


In [30]:
```
plt.figure(figsize=(20,30))
plt.plot(X, Y, label="Active cases", color ="purple", linewidth = 4, marker ='.' ,
plt.plot(X, E, label="Confirmed", color = "yellow",linewidth = 4, marker ='x' , mar
plt.plot(X, H, label="Recovered " , color ="magenta", linewidth = 4, marker ='*' ,
plt.plot(X, Q, label="Deceased", color ="pink", linewidth = 4, marker ='+' , marker
plt.xlabel('District')
plt.ylabel('Active, Confirmed, Recovered and Deceased')
plt.title('DISTRICT vs Active, Confirmed, Recovered and Deceased')
plt.legend()
plt.show()
```



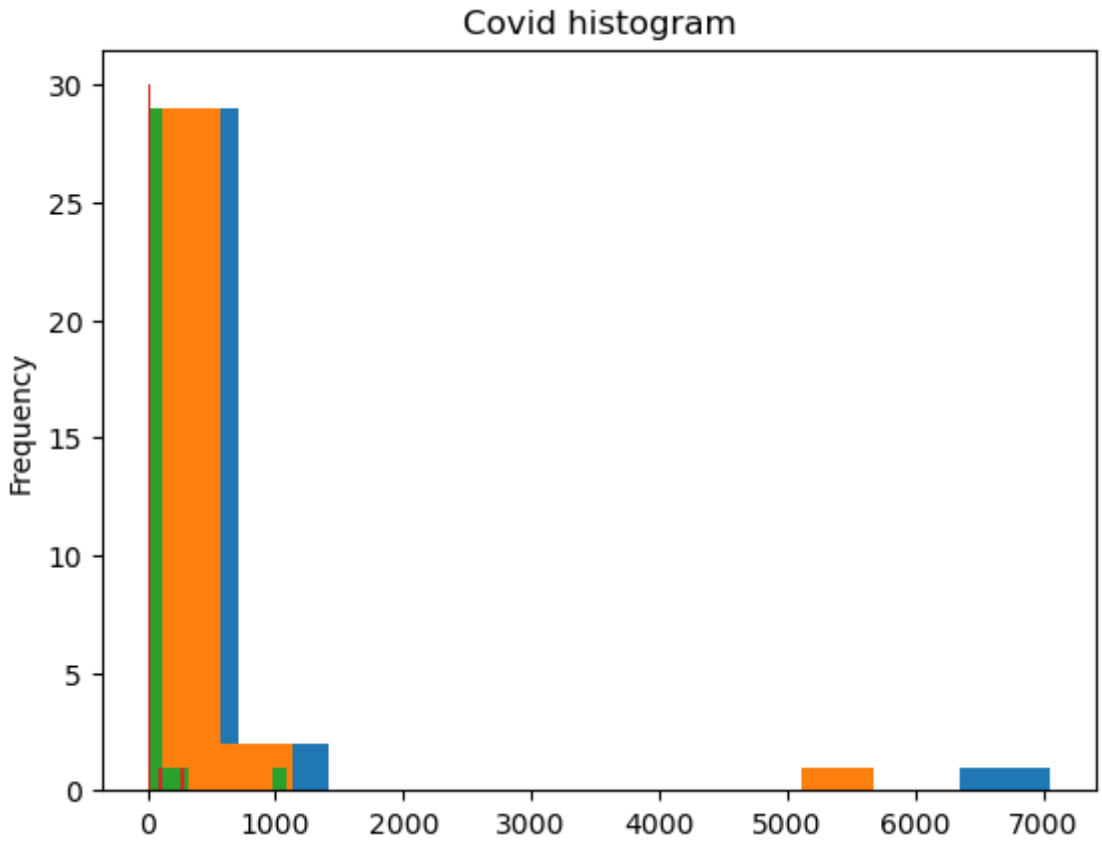
Histogram

In [31]:
```
plt.hist(Y)
plt.xlabel("Active cases")
plt.ylabel("Frequency")
plt.title("Covid histogram")
plt.show()
```



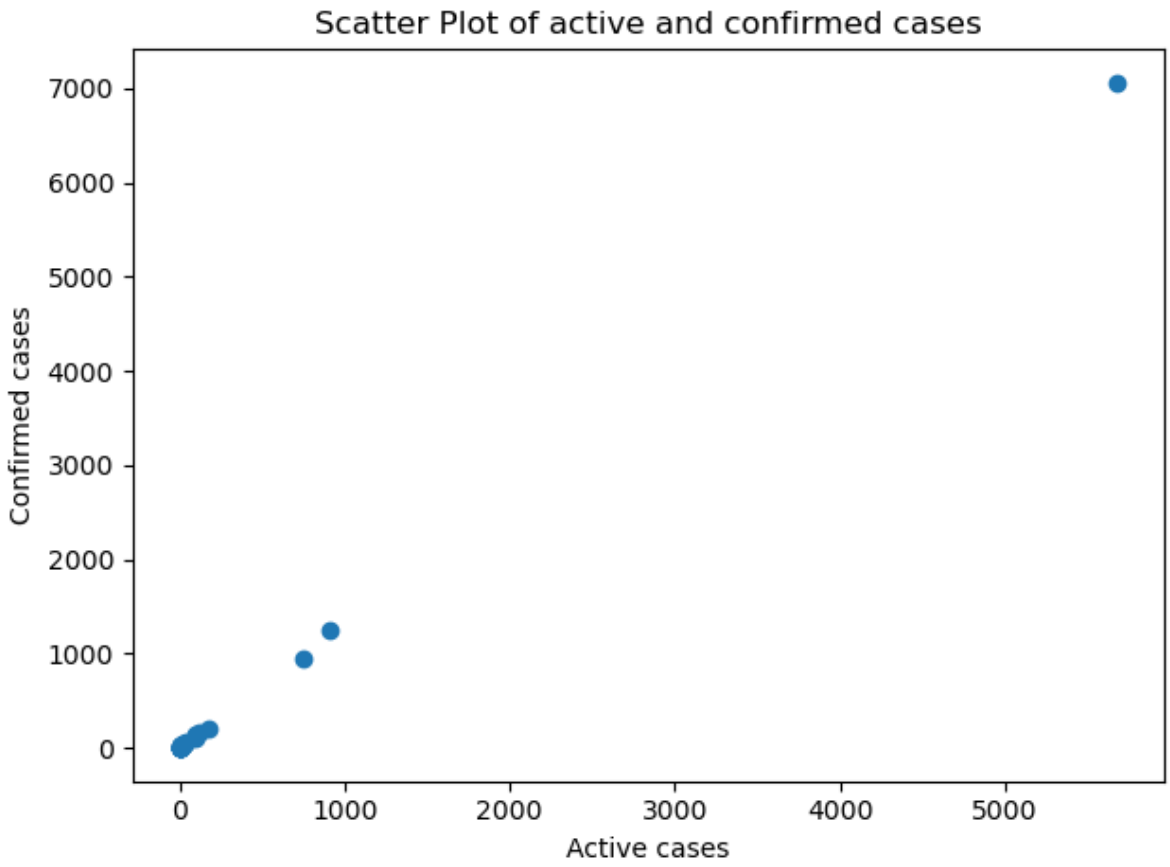
In [33]:
```
plt.hist(E)
plt.hist(Y)
plt.hist(H)
plt.hist(Q)

plt.ylabel("Frequency")
plt.title("Covid histogram")
plt.show()
```

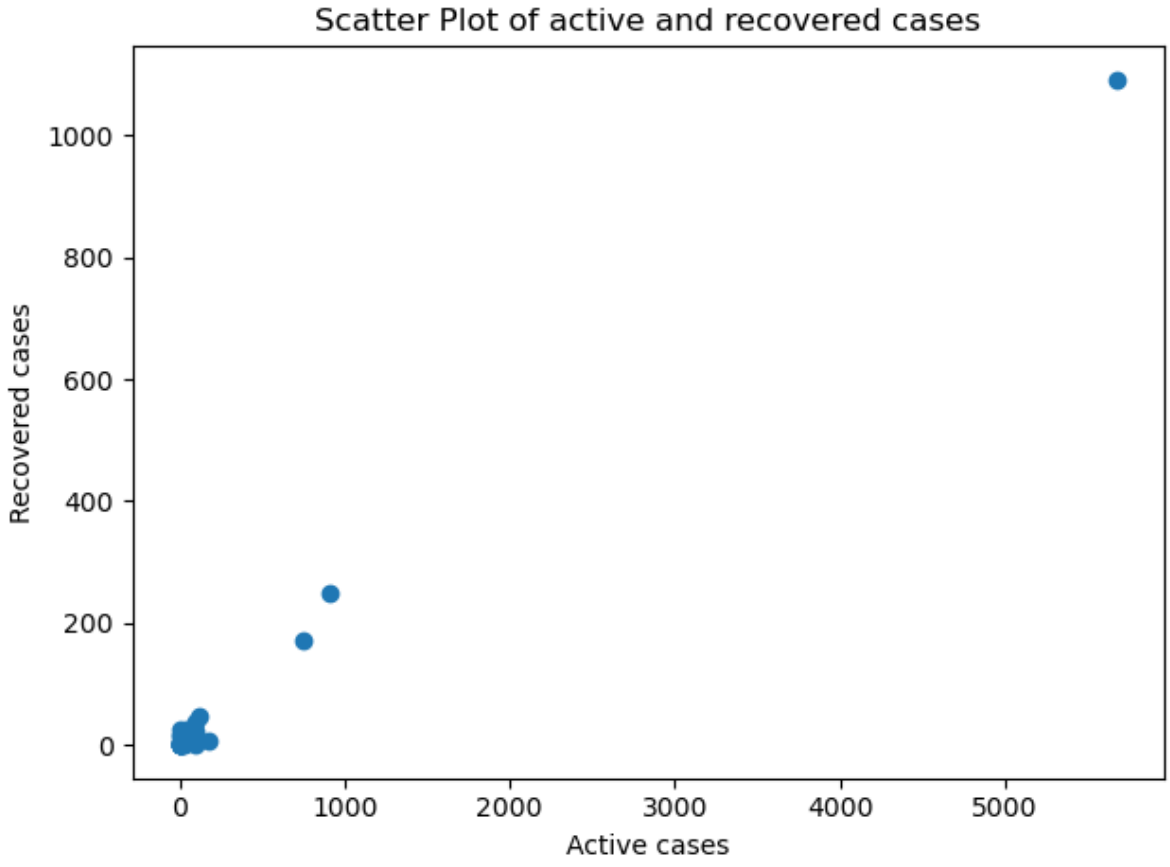


Scatterplot

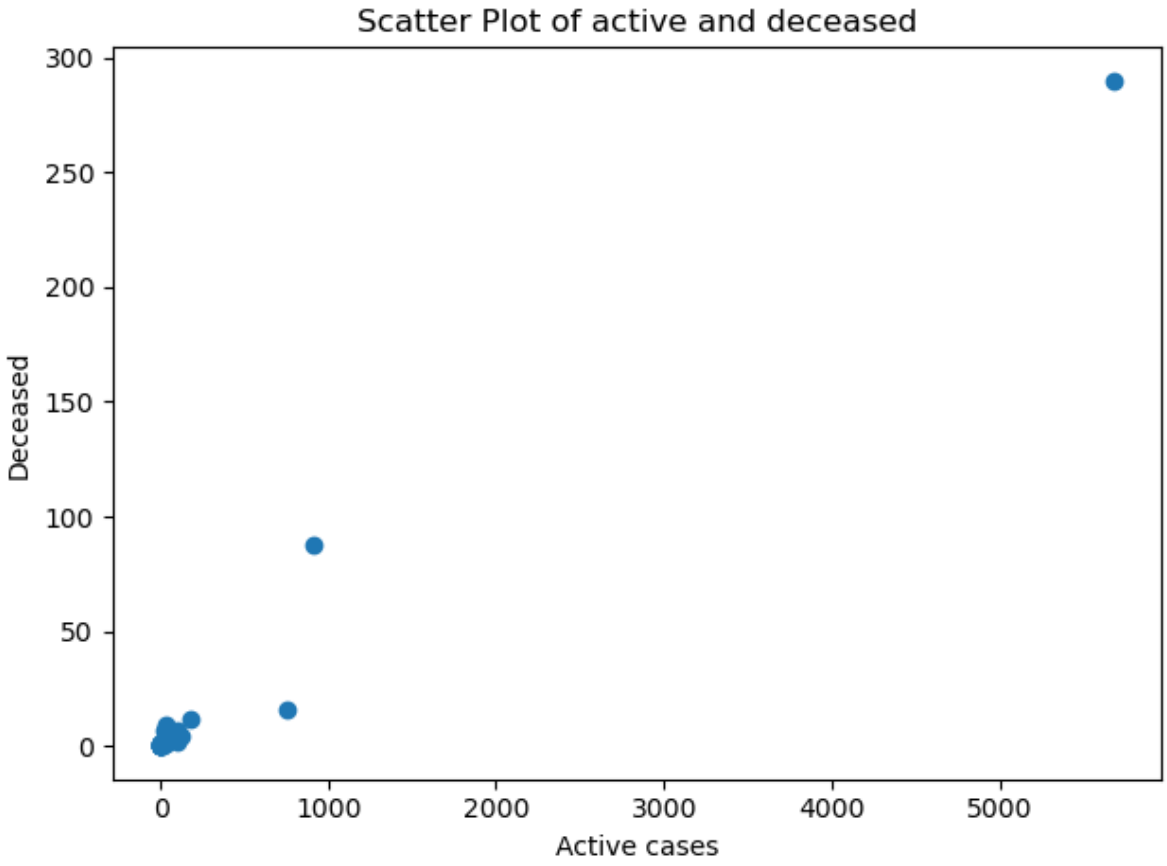
In [35]:
```
plt.scatter(Y, E)
plt.xlabel("Active cases")
plt.ylabel("Confirmed cases")
plt.title("Scatter Plot of active and confirmed cases")
plt.tight_layout()
plt.show()
```



In [36]:
```
plt.scatter(Y, H)
plt.xlabel("Active cases")
plt.ylabel("Recovered cases")
plt.title("Scatter Plot of active and recovered cases")
plt.tight_layout()
plt.show()
```

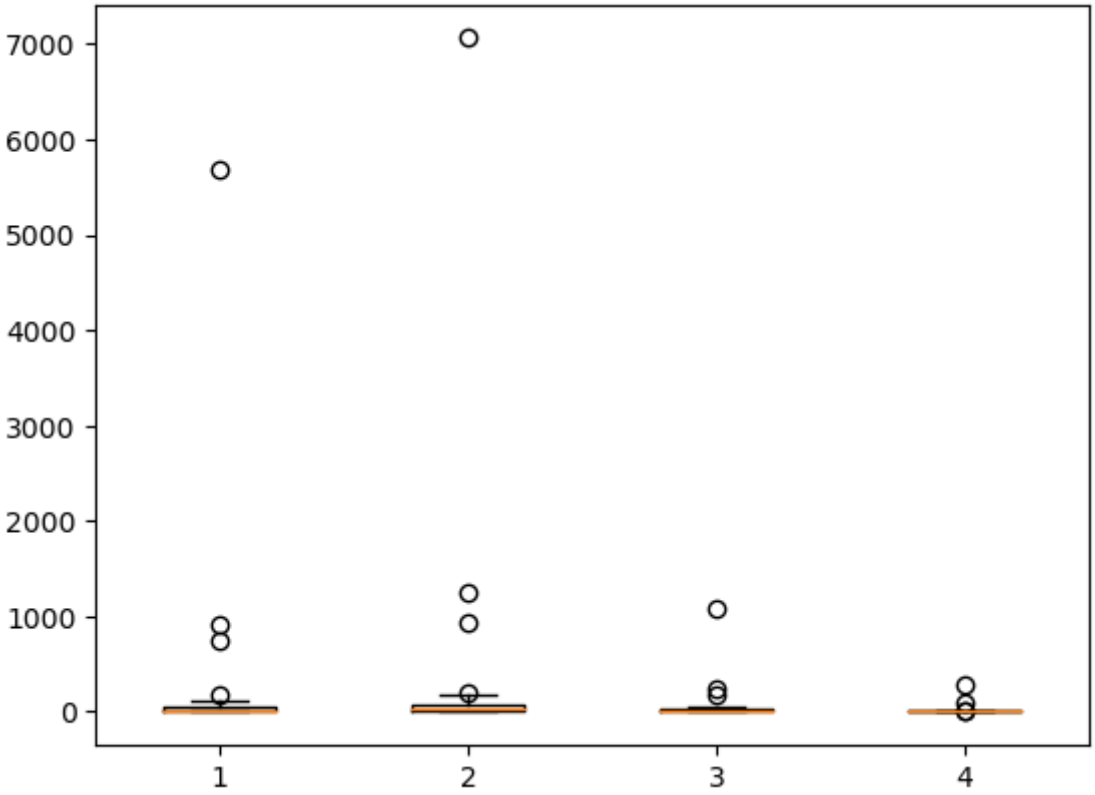


In [37]:
```
plt.scatter(Y, Q)
plt.xlabel("Active cases")
plt.ylabel("Deceased")
plt.title("Scatter Plot of active and deceased")
plt.tight_layout()
plt.show()
```



boxplot

In [39]:
```
# collections = [Y, E, H, Q]
plt.boxplot(collections)
plt.show()
```



Bar graph

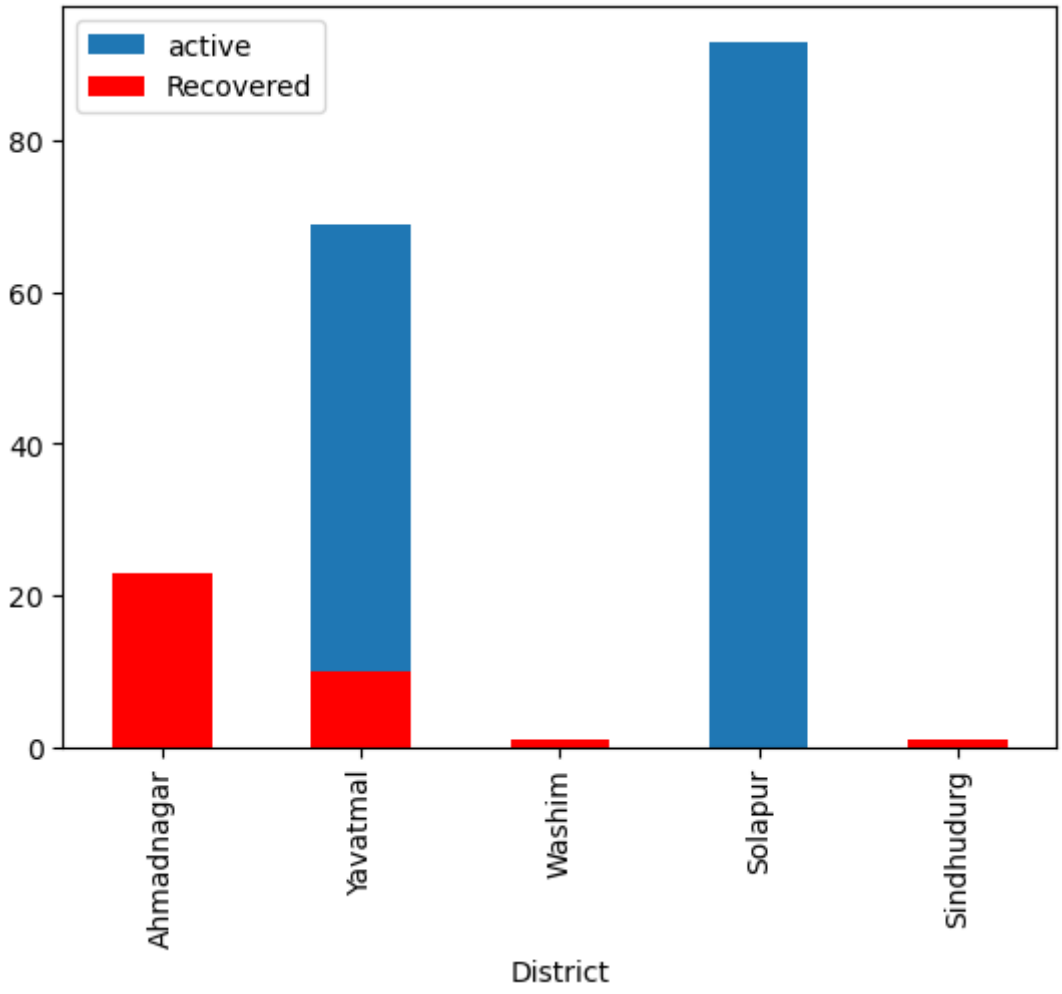
In [40]:
```
import matplotlib.pyplot as plt
import pandas as pd
```

In [42]:
```
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")
df.plot(x="District", y="Recovered", kind="bar", ax=ax, color="red")
```

Out[42]:
```
<AxesSubplot:xlabel='District'>
```

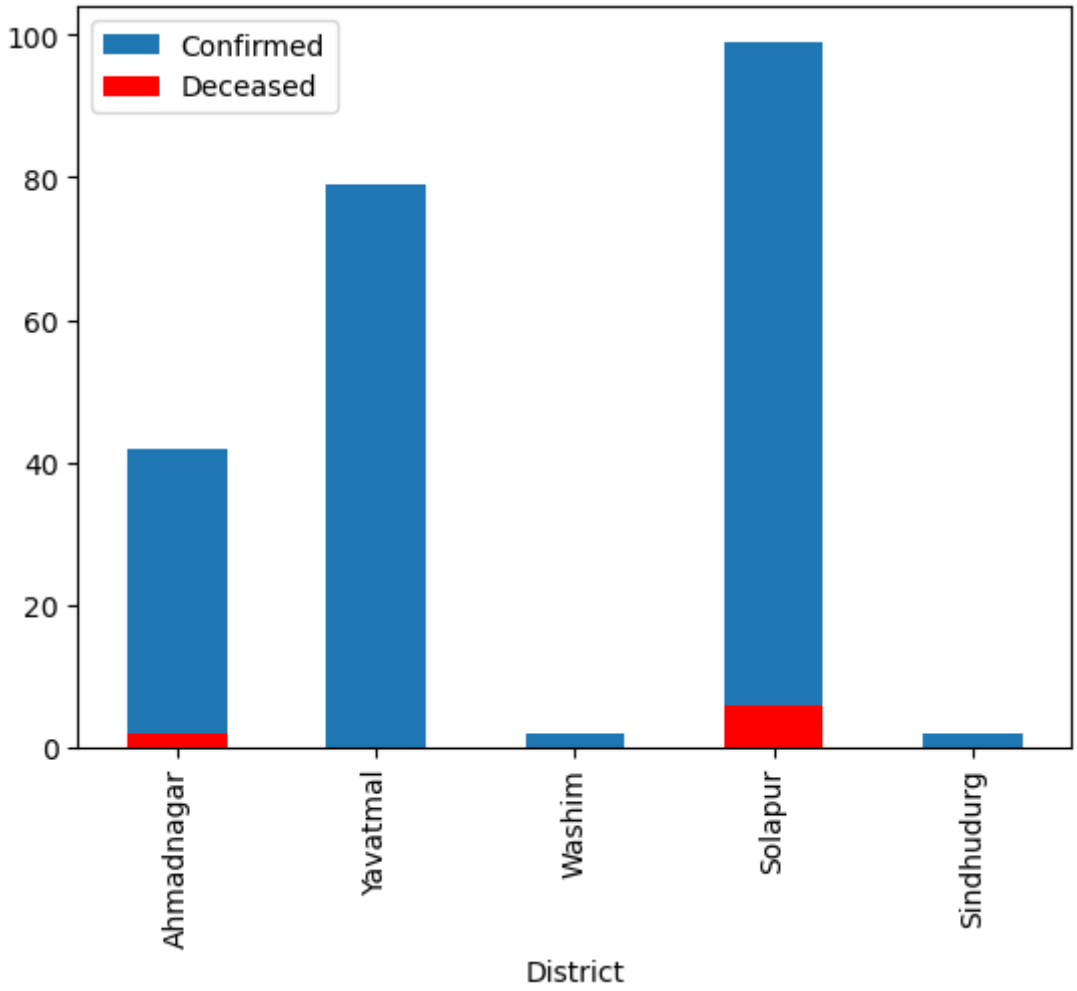


In [43]:
```
df = pd.DataFrame({
    'District': ['Ahmadnagar', 'Yavatmal', 'Washim', 'Solapur', 'Sindhudurg'],
    'active':[17,69,1,93,1],
    'Confirmed': [42,79,2,99,2],
    'Recovered':[23,10,1,0,1],
    'Deceased':[2,0,0,6,0]


})

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

Out[43]:
```
<AxesSubplot:xlabel='District'>
```


Confirmed
Deceased
100
80
60
40
20
0
Ahmadnagar
Yavatmal
Washim
Solapur
Sindhudurg
District

In [ ]: