

Matplotlib

In [1]:

```
%matplotlib inline
```

In [2]:

```
import matplotlib as mpl
import matplotlib.pyplot as plt
import numpy as np
import pandas as pd
```

In [4]:

```
data = pd.read_csv('datadistrict.csv - district (1).csv')
```

In [5]:

```
data.head(10)
#Top 10 data from dataset
```

Out[5]:

	districtData/0/district	districtData/0/active	districtData/0/confirmed	districtData/0/deceased	dis
0	ahmedabad	136	55	27	
1	Amreli	36	15	13	
2	Anand	15	10	5	
3	Aravalli	6	5	3	
4	Banaskantha	25	3	1	
5	Bharuch	36	32	9	
6	Bhavnagar	45	25	12	
7	Botad	3	2	2	
8	Chhota udaipur	1	2	4	
9	Dahod	2	2	1	

In [6]:

```
# Describe the statistics of all the the columns.
```

In [7]:

```
data.describe()
```

Out[7]:

	districtData/0/active	districtData/0/confirmed	districtData/0/deceased	districtData/0/recover
count	33.000000	33.000000	33.000000	33.0000
mean	30.909091	18.333333	10.393939	1.9696
std	27.799914	14.717478	9.086182	2.3911
min	1.000000	2.000000	0.000000	0.0000
25%	12.000000	5.000000	3.000000	0.0000
50%	28.000000	15.000000	8.000000	1.0000
75%	39.000000	25.000000	15.000000	3.0000
max	136.000000	56.000000	33.000000	8.0000

In [8]:

```
data.tail(10)  
#bottom 10 data from dataset
```

Out[8]:

	districtData/0/district	districtData/0/active	districtData/0/confirmed	districtData/0/deceased	di
23	Panchmahal	16	5	20	
24	Patan	39	17	17	
25	Porbandar	45	21	2	
26	Rajkot	36	26	1	
27	Sabarkantha	12	11	22	
28	Surat	56	56	4	
29	Surendranagar	30	37	5	
30	Tapi	12	5	8	
31	Vadodara	68	42	26	
32	valsad	9	3	6	

Simple Line Plot

In [9]:

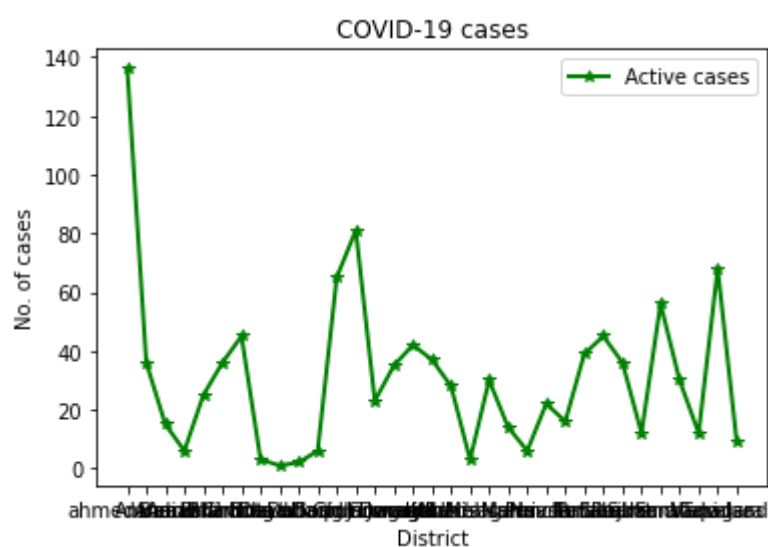
```
# Plot a Line diagram including active, confirmed, deceased & recovered cases.
```

In [10]:

```
A = data.iloc[0:,1].values
R = data.iloc[0:,4].values
D = data.iloc[0:,3].values
C = data.iloc[0:,2].values
X = data.iloc[0:,0]
```

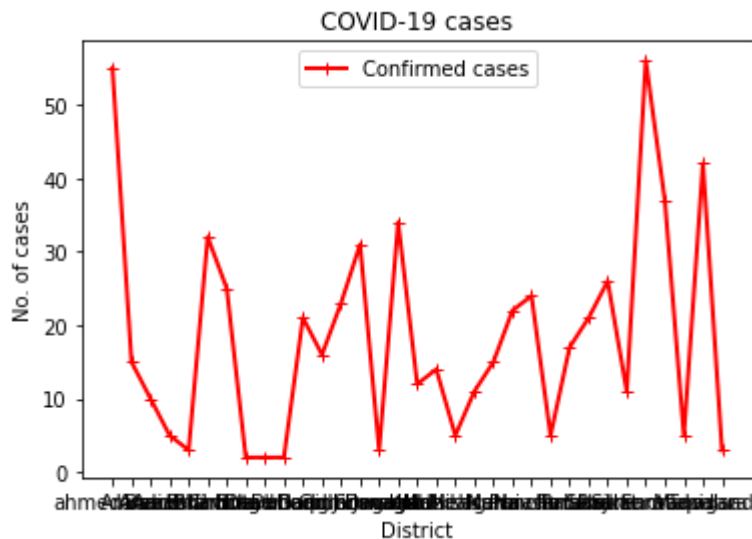
In [13]:

```
plt.plot(X,A, label="Active cases", color="green", linewidth=2, marker='*')
plt.xlabel('District')
plt.ylabel('No. of cases')
plt.title('COVID-19 cases')
plt.legend()
plt.show()
```



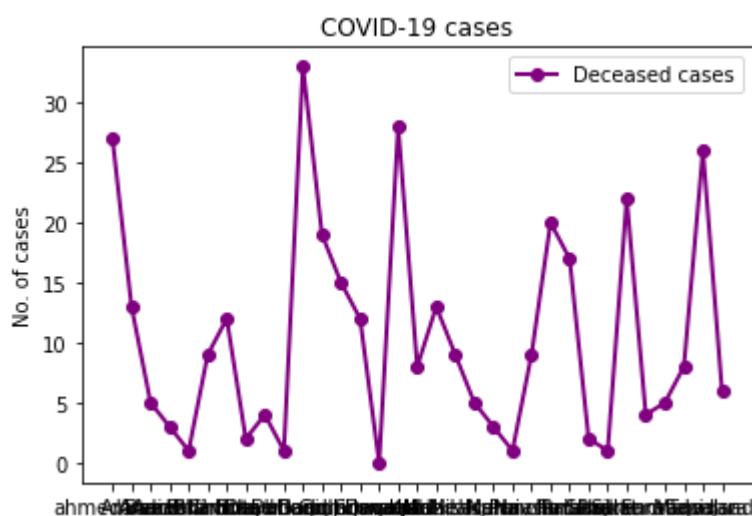
In [15]:

```
plt.plot(X,C, label="Confirmed cases", color="r", linewidth=2, marker='+')
plt.xlabel('District')
plt.ylabel('No. of cases')
plt.title('COVID-19 cases')
plt.legend()
plt.show()
```



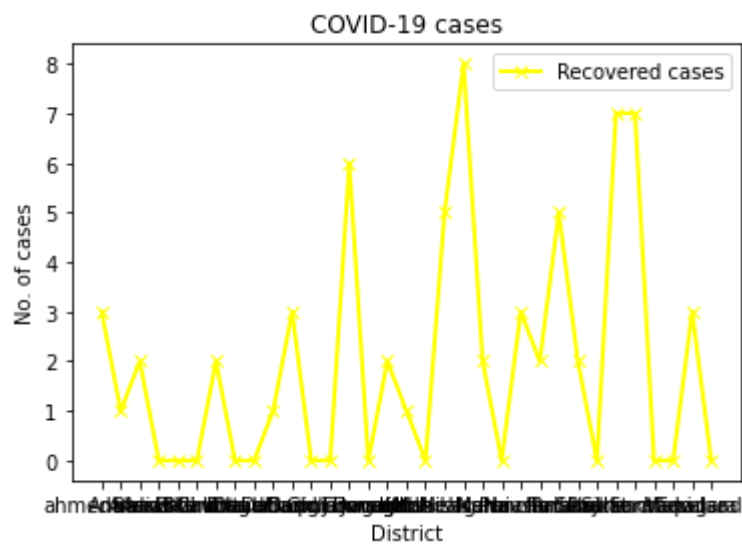
In [18]:

```
plt.plot(X,D, label="Deceased cases", color="purple", linewidth=2, marker='o')
plt.ylabel('No. of cases')
plt.title('COVID-19 cases')
plt.legend()
plt.show()
```



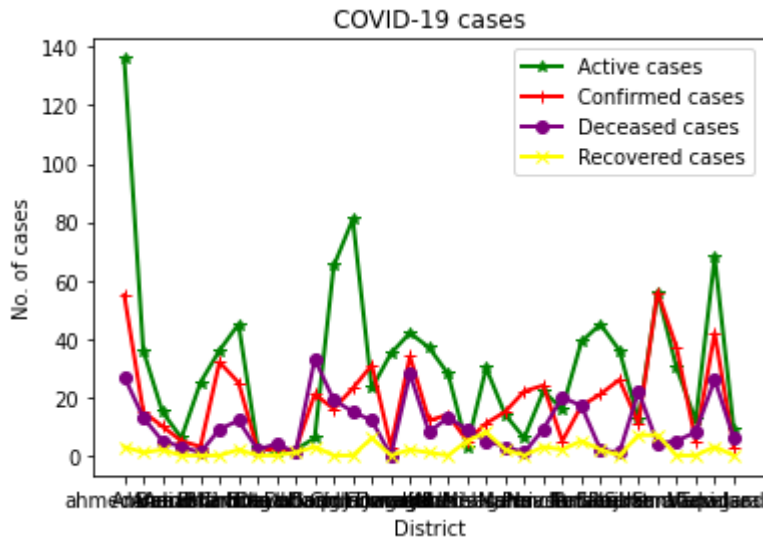
In [20]:

```
plt.plot(X,R, label="Recovered cases", color="yellow", linewidth=2, marker='x')
plt.xlabel('District')
plt.ylabel('No. of cases')
plt.title('COVID-19 cases')
plt.legend()
plt.show()
```



In [22]:

```
plt.plot(X,A, label="Active cases", color="green", linewidth=2, marker='*')
plt.plot(X,C, label="Confirmed cases", color="red", linewidth=2, marker='+')
plt.plot(X,D, label="Deceased cases", color="purple", linewidth=2, marker='o')
plt.plot(X,R, label="Recovered cases", color="yellow", linewidth=2, marker='x')
plt.xlabel('District')
plt.ylabel('No. of cases')
plt.title('COVID-19 cases')
plt.legend()
plt.show()
```



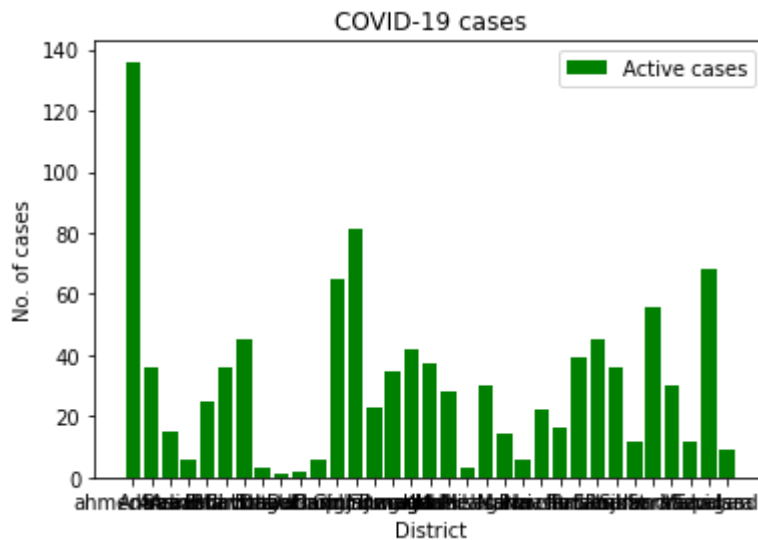
Bar Graph

In [23]:

```
# Plot a bar diagram including active, confirmed, deceased & recovered cases.
```

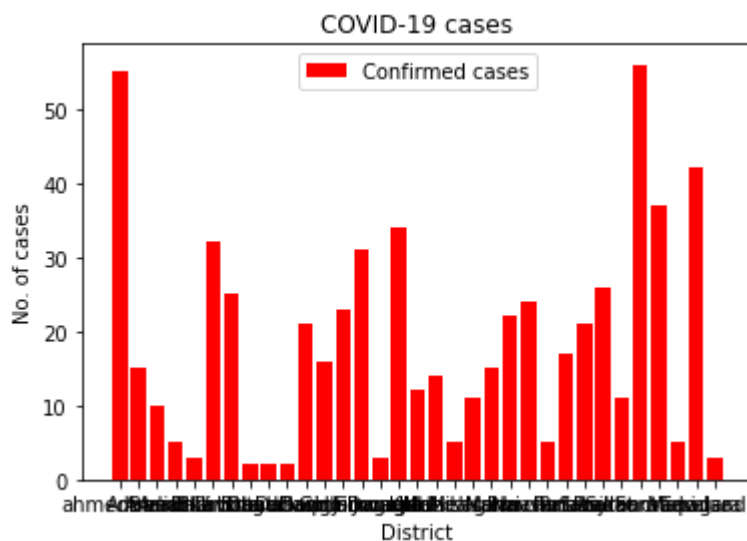
In [24]:

```
plt.bar(X, A, label="Active cases", color="green")
plt.xlabel('District')
plt.ylabel('No. of cases')
plt.title('COVID-19 cases')
plt.legend()
plt.show()
```



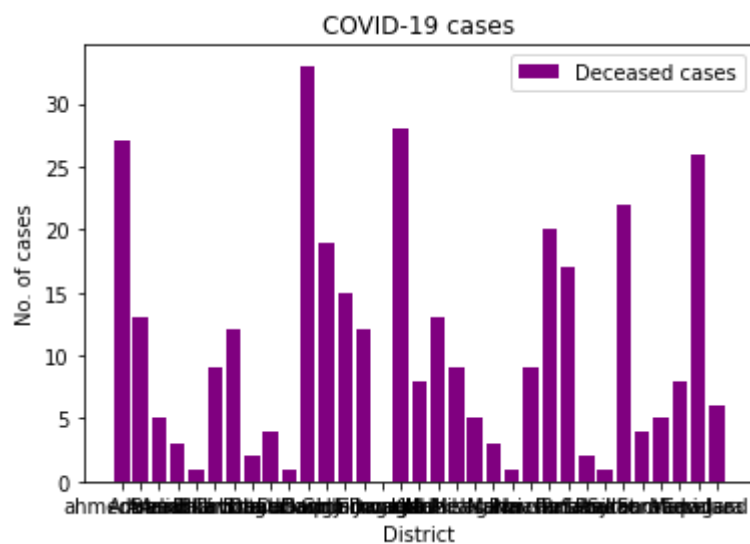
In [25]:

```
plt.bar(X, C, label="Confirmed cases", color="red")
plt.xlabel('District')
plt.ylabel('No. of cases')
plt.title('COVID-19 cases')
plt.legend()
plt.show()
```



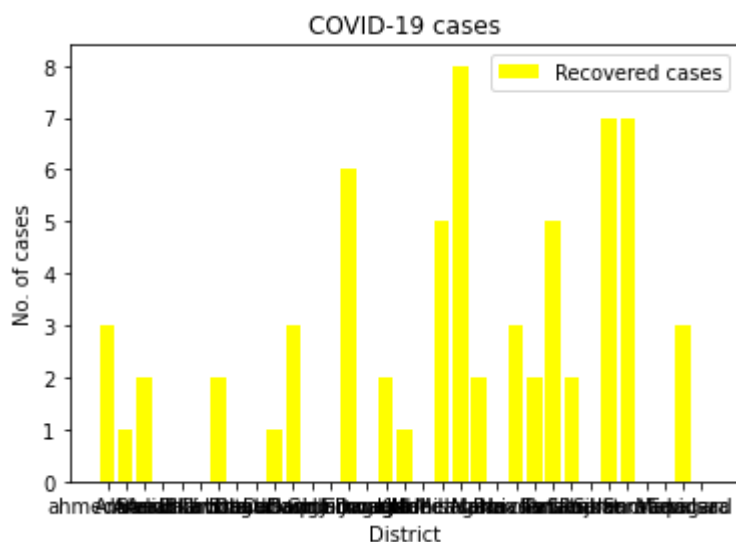
In [26]:

```
plt.bar(X, D, label="Deceased cases", color="purple")
plt.xlabel('District')
plt.ylabel('No. of cases')
plt.title('COVID-19 cases')
plt.legend()
plt.show()
```



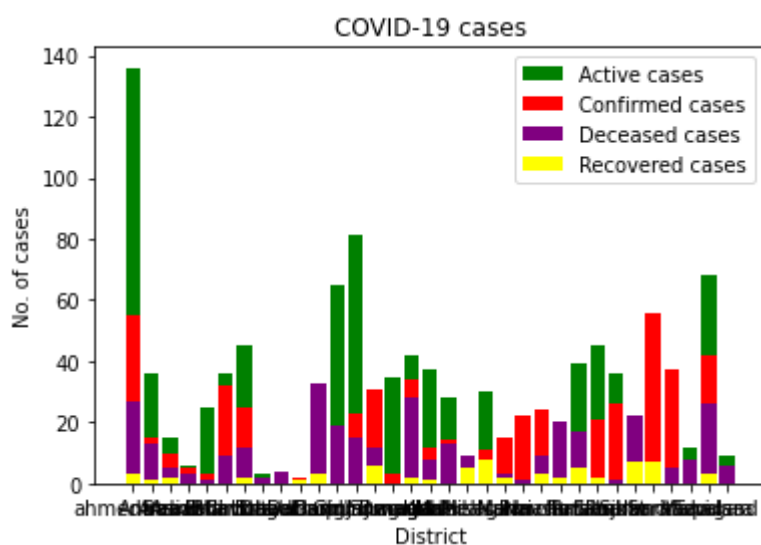
In [27]:

```
plt.bar(X, R, label="Recovered cases", color="yellow")
plt.xlabel('District')
plt.ylabel('No. of cases')
plt.title('COVID-19 cases')
plt.legend()
plt.show()
```



In [28]:

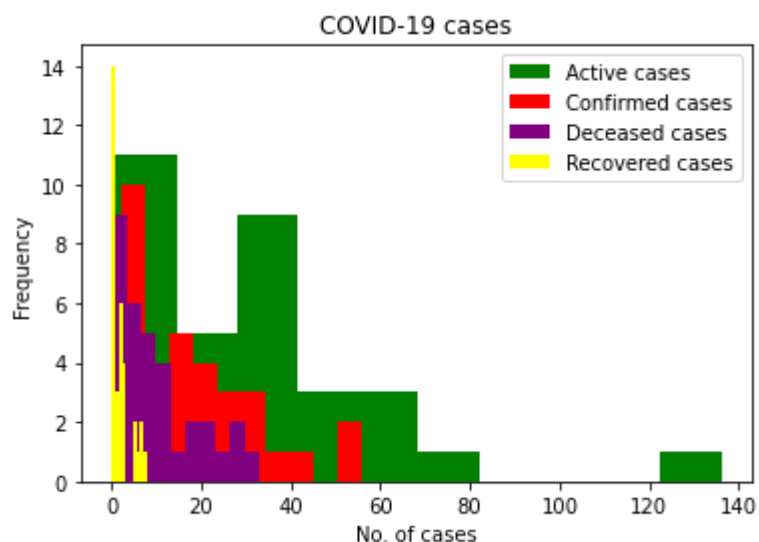
```
plt.bar(X, A, label="Active cases", color="green")
plt.bar(X, C, label="Confirmed cases", color="red")
plt.bar(X, D, label="Deceased cases", color="purple")
plt.bar(X, R, label="Recovered cases", color="yellow")
plt.xlabel('District')
plt.ylabel('No. of cases')
plt.title('COVID-19 cases')
plt.legend()
plt.show()
```



Histogram

In [30]:

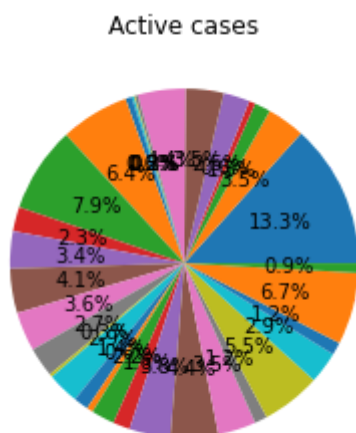
```
plt.hist(A, label="Active cases", color="green")
plt.hist(C, label="Confirmed cases", color="red")
plt.hist(D, label="Deceased cases", color="purple")
plt.hist(R, label="Recovered cases", color="yellow")
plt.xlabel("No. of cases")
plt.ylabel("Frequency")
plt.title("COVID-19 cases")
plt.legend()
plt.show()
```



Pie Chart

In [32]:

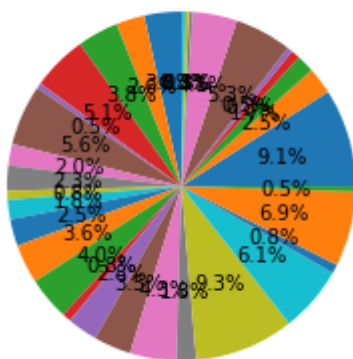
```
plt.pie(A, autopct='%1.1f%%')
plt.title('Active cases')
plt.show()
```



In [33]:

```
plt.pie(C, autopct='%1.1f%%')  
plt.title('Confirmed cases')  
plt.show()
```

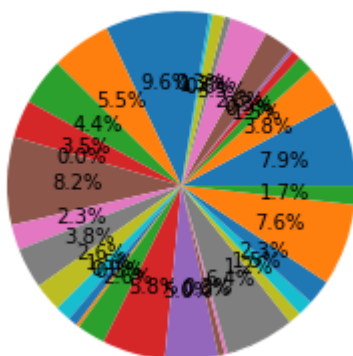
Confirmed cases



In [34]:

```
plt.pie(D, autopct='%1.1f%%')  
plt.title('Deceased cases')  
plt.show()
```

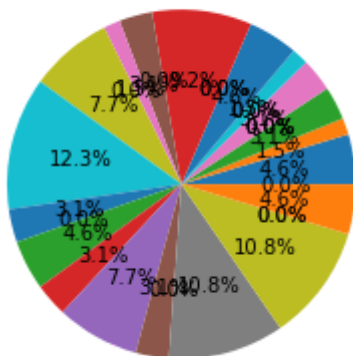
Deceased cases



In [35]:

```
plt.pie(R, autopct='%1.1f%%')  
plt.title('Recovered cases')  
plt.show()
```

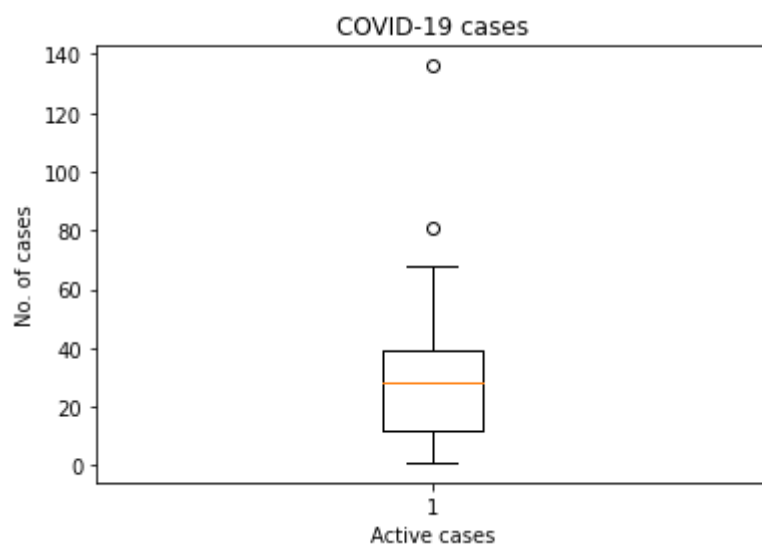
Recovered cases



Box Plot

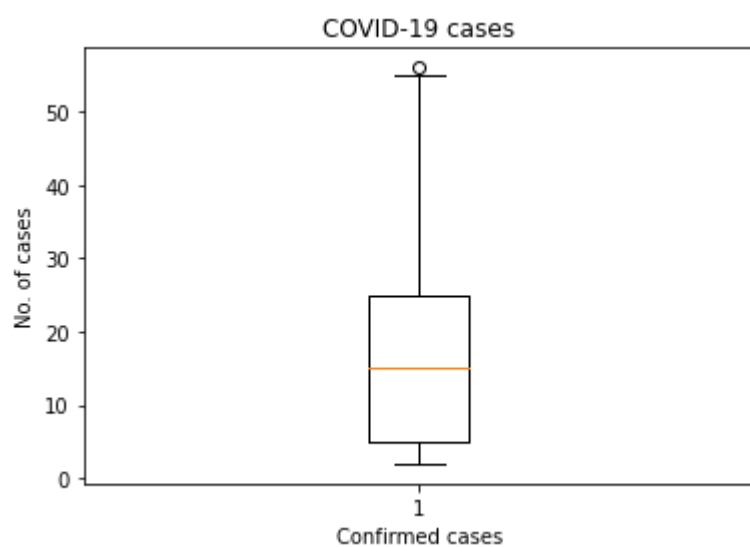
In [36]:

```
plt.boxplot(A)
plt.title('COVID-19 cases')
plt.xlabel('Active cases')
plt.ylabel('No. of cases')
plt.show()
```



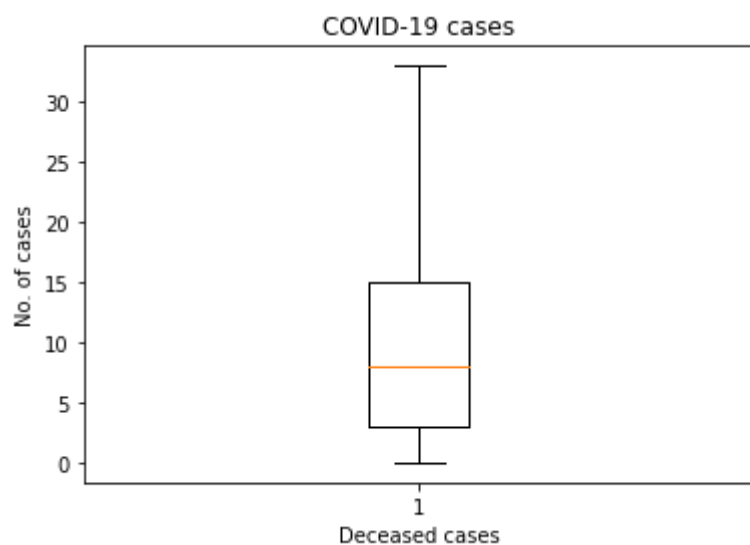
In [37]:

```
plt.boxplot(C)
plt.title('COVID-19 cases')
plt.xlabel('Confirmed cases')
plt.ylabel('No. of cases')
plt.show()
```



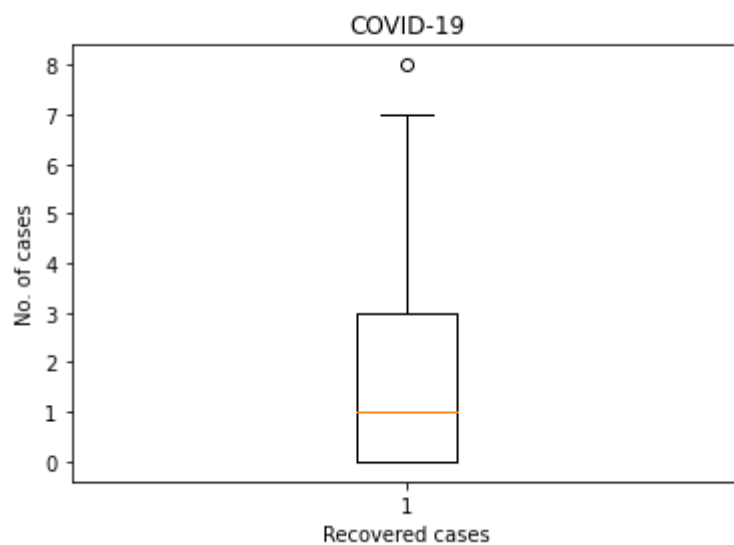
In [38]:

```
plt.boxplot(D)
plt.title('COVID-19 cases')
plt.xlabel('Deceased cases')
plt.ylabel('No. of cases')
plt.show()
```



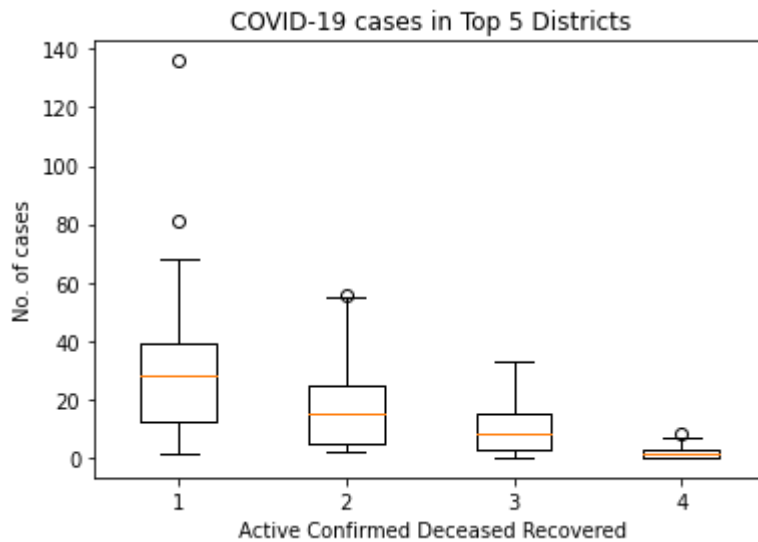
In [39]:

```
plt.boxplot(R)
plt.title('COVID-19')
plt.xlabel('Recovered cases')
plt.ylabel('No. of cases')
plt.show()
```



In [41]:

```
COVID_cases = [A,C,D,R]
plt.boxplot(COVID_cases)
plt.title('COVID-19 cases')
plt.title('COVID-19 cases in Top 5 Districts')
plt.xlabel(' Active Confirmed Deceased Recovered')
plt.ylabel('No. of cases')
plt.show()
```



In [45]:

```
# Plot active vs recovered cases for top 5 districts having highest no. of cases.
```

In [47]:

```
data.sort_values(['districtData/0/active','districtData/0/district'], ascending = False)
```

Out[47]:

	districtData/0/district	districtData/0/active	districtData/0/confirmed	districtData/0/deceased	di
0	ahmedabad	136	55	27	
12	Gandhinagar	81	23	15	
31	Vadodara	68	42	26	
11	Devbhoomi Dwarka	65	16	19	
28	Surat	56	56	4	
25	Porbandar	45	21	2	
6	Bhavnagar	45	25	12	
15	Junagadh	42	34	28	
24	Patan	39	17	17	
16	Kutch	37	12	8	
26	Rajkot	36	26	1	
5	Bharuch	36	32	9	
1	Amreli	36	15	13	
14	Jamnagar	35	3	0	
29	Surendranagar	30	37	5	
19	Mehsana	30	11	5	
17	Kheda	28	14	13	
4	Banaskantha	25	3	1	
13	Gir Somnath	23	31	12	
22	Navsari	22	24	9	
23	Panchmahal	16	5	20	
2	Anand	15	10	5	
20	Morbi	14	15	3	
30	Tapi	12	5	8	
27	Sabarkantha	12	11	22	
32	valsad	9	3	6	
21	Narmada	6	22	1	
10	Dang	6	21	33	
3	Aravalli	6	5	3	
18	Mahisagar	3	5	9	
7	Botad	3	2	2	
9	Dahod	2	2	1	
8	Chhota udaipur	1	2	4	

In [48]:

```
sortcases= data.sort_values(['districtData/0/active','districtData/0/district'], ascending
```

In [49]:

```
sortcases.head(5)
```

Out[49]:

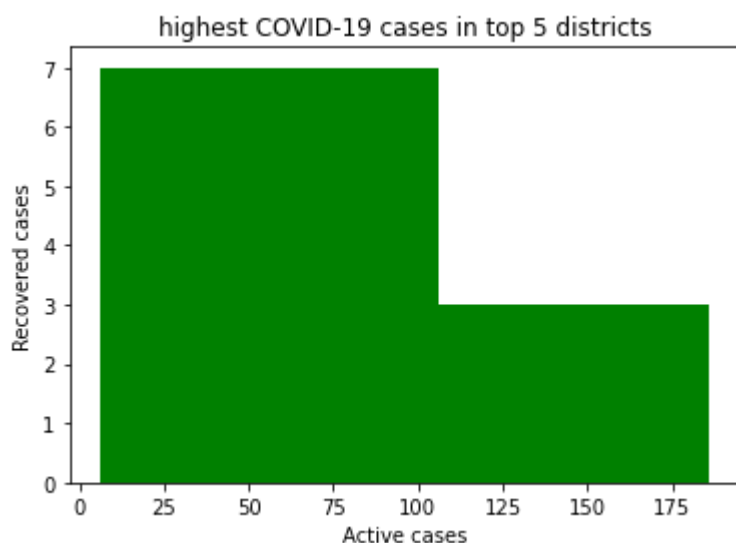
	districtData/0/district	districtData/0/active	districtData/0/confirmed	districtData/0/deceased	di
0	ahmedabad	136	55	27	
12	Gandhinagar	81	23	15	
31	Vadodara	68	42	26	
11	Devbhoomi Dwarka	65	16	19	
28	Surat	56	56	4	

In [50]:

```
highestcases = sortcases.head(5)
```

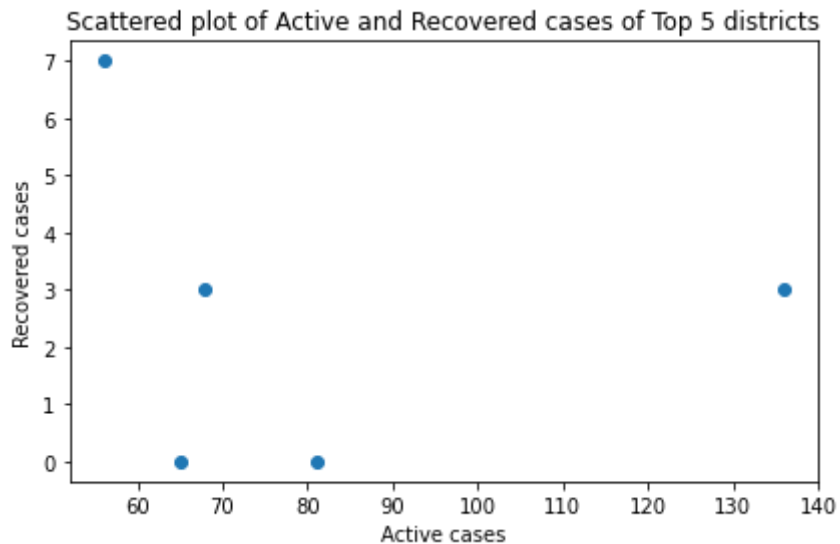
In [57]:

```
a = highestcases.loc[:, "districtData/0/active"]
r = highestcases.loc[:, "districtData/0/recovered"]
plt.bar(a,r, width = 100, color='green')
plt.xlabel("Active cases")
plt.ylabel("Recovered cases")
plt.title("highest COVID-19 cases in top 5 districts")
plt.show()
```



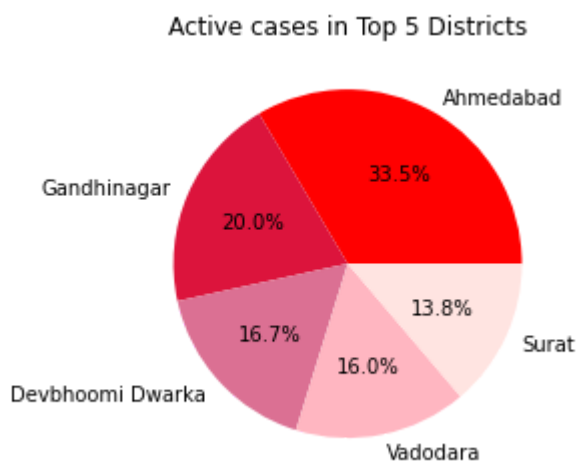
In [58]:

```
plt.scatter(a,r)
plt.xlabel("Active cases")
plt.ylabel("Recovered cases")
plt.title("Scattered plot of Active and Recovered cases of Top 5 districts")
plt.tight_layout()
plt.show()
```



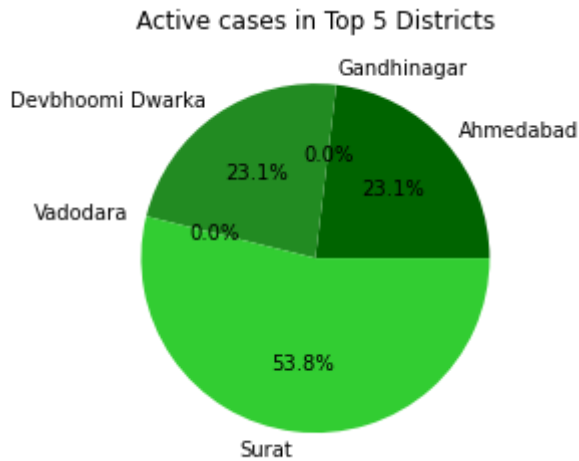
In [59]:

```
labels= ['Ahmedabad', 'Gandhinagar', 'Devbhoomi Dwarka', 'Vadodara', 'Surat']
colors = ['red', 'crimson', 'palevioletred', 'lightpink', 'mistyrose']
plt.pie(a, labels=labels, colors=colors, autopct='%1.1f%%')
plt.title('Active cases in Top 5 Districts')
plt.show()
```



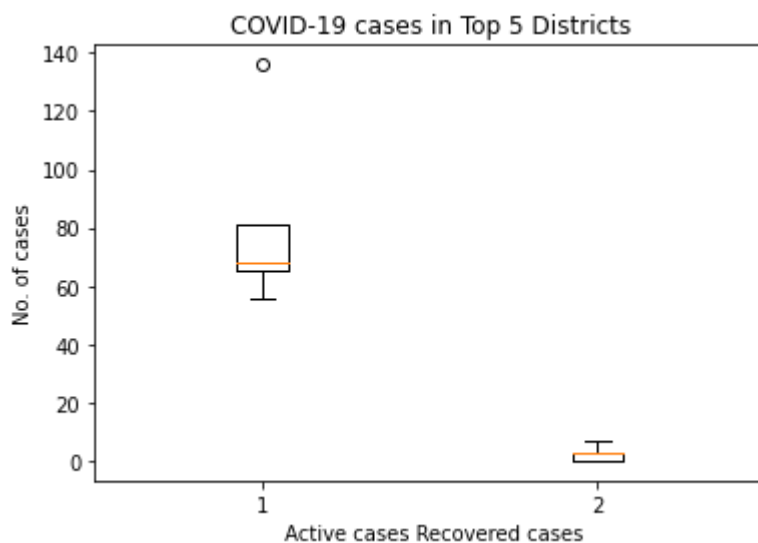
In [60]:

```
labels= ['Ahmedabad', 'Gandhinagar', 'Devbhoomi Dwarka', 'Vadodara', 'Surat']
colors = ['darkgreen', 'green', 'forestgreen', 'lime', 'limegreen']
plt.pie(r, labels=labels, colors=colors, autopct='%1.1f%%')
plt.title('Active cases in Top 5 Districts')
plt.show()
```



In [61]:

```
COVID_cases = [a,r]
plt.boxplot(COVID_cases)
plt.title('COVID-19 cases in Top 5 Districts')
plt.xlabel(' Active cases Recovered cases')
plt.ylabel('No. of cases')
plt.show()
```



In []:

