Pandas Operations

In [ ]:
```
import pandas as pd
import numpy as np
df=pd.read_csv("studentsnew.csv")
df
```

In [7]:
```
df["Total"]=df["Python"]+df["Machine Learning"]
df
```

Out[7]:

	Rank	Name	Age	Gender	Background	Python	Machine Learning	Grade	Total
0	Rank 1	Ravi	23	Male	Tech	89	95	184	184
1	Rank 2	Chandni	22	Female	Non-Tech	78	83	161	161
2	Rank 3	Gyanesh	25	Male	Tech	70	80	150	150
3	Rank 4	Rahul	22	Male	Tech	68	75	143	143
4	Rank 5	Kartik	23	Male	Tech	60	70	130	130
5	Rank 6	Pratiksha	24	Female	Non-Tech	58	55	113	113
6	Rank 7	Maya	22	Female	Non-Tech	55	50	105	105
7	Rank 8	Shani	21	Male	Tech	50	50	100	100
8	Rank 9	Neelam	24	Female	Non-Tech	50	47	97	97
9	Rank 10	Mangal	22	Male	Non-Tech	45	46	91	91

In [10]:
```
cities=["Chennai","bangalore","Delhi","Mumbai","Kerala","Rajasthan","Tane","Pune","Chennai","Chennai"]
df["city"]=cities
```

In [11]:
```
df["Total"]=df["Python"]+df["Machine Learning"]
```

In [12]:
```
len(cities)
```

Out[12]: 10

In [13]:
```
df.head(10)
```

Out[13]:

	Rank	Name	Age	Gender	Background	Python	Machine Learning	Grade	Total	city
0	Rank 1	Ravi	23	Male	Tech	89	95	184	184	Chennai
1	Rank 2	Chandni	22	Female	Non-Tech	78	83	161	161	bangalore
2	Rank 3	Gyanesh	25	Male	Tech	70	80	150	150	Delhi
3	Rank 4	Rahul	22	Male	Tech	68	75	143	143	Mumbai
4	Rank 5	Kartik	23	Male	Tech	60	70	130	130	Kerala
5	Rank 6	Pratiksha	24	Female	Non-Tech	58	55	113	113	Rajasthan
6	Rank 7	Maya	22	Female	Non-Tech	55	50	105	105	Tane
7	Rank 8	Shani	21	Male	Tech	50	50	100	100	Pune
8	Rank 9	Neelam	24	Female	Non-Tech	50	47	97	97	Chennai
9	Rank 10	Mangal	22	Male	Non-Tech	45	46	91	91	Chennai

In [17]:
```
def getgrade(mark):
    v=(mark/200)*100
    if(v>=75):
        return "A"
    elif(v>=60 and v<75):
        return "B"
    elif(v>=40 and v<60):
        return "C"
    else:
        return "F"
```

In [18]:
```
df["Total"].apply(getgrade)
```

Out[18]:
```
0    A
1    A
2    A
3    B
4    B
5    C
6    C
7    C
8    C
9    C
Name: Total, dtype: object
```

In [19]:
```
df["Grade"]=df["Total"].apply(getgrade)
```

In [20]:
```
df
```

Out[20]:

	Rank	Name	Age	Gender	Background	Python	Machine Learning	Grade	Total	city
0	Rank 1	Ravi	23	Male	Tech	89	95	A	184	Chennai
1	Rank 2	Chandni	22	Female	Non-Tech	78	83	A	161	bangalore
2	Rank 3	Gyanesh	25	Male	Tech	70	80	A	150	Delhi
3	Rank 4	Rahul	22	Male	Tech	68	75	B	143	Mumbai
4	Rank 5	Kartik	23	Male	Tech	60	70	B	130	Kerala
5	Rank 6	Pratiksha	24	Female	Non-Tech	58	55	C	113	Rajasthan
6	Rank 7	Maya	22	Female	Non-Tech	55	50	C	105	Tane
7	Rank 8	Shani	21	Male	Tech	50	50	C	100	Pune
8	Rank 9	Neelam	24	Female	Non-Tech	50	47	C	97	Chennai
9	Rank 10	Mangal	22	Male	Non-Tech	45	46	C	91	Chennai

In [22]:
```
df["Background"].value_counts()
```

Out[22]:
```
Tech        5
Non-Tech    5
Name: Background, dtype: int64
```

In [23]:
```
df["city"].value_counts()
```

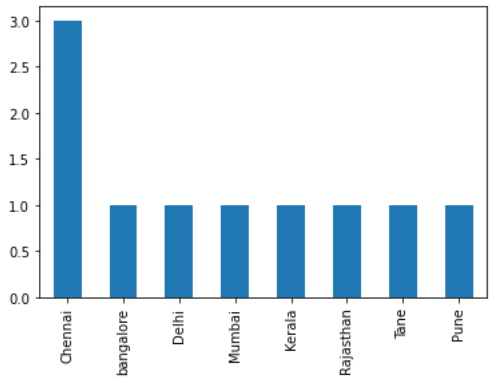
Out[23]:
```
Chennai      3
bangalore    1
Delhi        1
Mumbai       1
Kerala       1
Rajasthan    1
Tane         1
Pune         1
Name: city, dtype: int64
```

In [24]:
```
df["city"].unique()
```

Out[24]:
```
array(['Chennai', 'bangalore', 'Delhi', 'Mumbai', 'Kerala', 'Rajasthan',
       'Tane', 'Pune'], dtype=object)
```

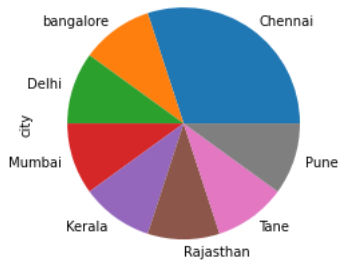
In [25]:
```
df["city"].value_counts().plot(kind="bar")
```

Out[25]:
```
<AxesSubplot:>
```



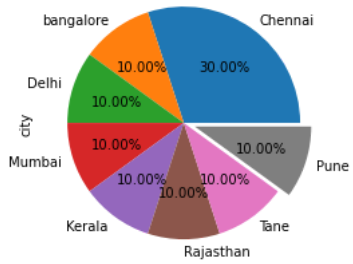
In [26]:
```
df["city"].value_counts().plot(kind="pie")
```

Out[26]:
```
<AxesSubplot:ylabel='city'>
```



In [33]:
```
df["city"].value_counts().plot(kind="pie",autopct="%.2f%%",explode=(0,0,0,0,0,0,0,0.1))
```

Out[33]:
```
<AxesSubplot:ylabel='city'>
```



In [34]:
```
df["Grade"].value_counts().mean()
```

Out[34]:
```
3.3333333333333335
```

In [43]:
```
df[df["city"]=="Chennai"]["Total"].mean()
```

Out[43]:
```
124.0
```

In [42]:
```
df
```

Out[42]:

	Rank	Name	Age	Gender	Background	Python	Machine Learning	Grade	Total	city
0	Rank 1	Ravi	23	Male	Tech	89	95	A	184	Chennai
1	Rank 2	Chandni	22	Female	Non-Tech	78	83	A	161	bangalore
2	Rank 3	Gyanesh	25	Male	Tech	70	80	A	150	Delhi
3	Rank 4	Rahul	22	Male	Tech	68	75	B	143	Mumbai
4	Rank 5	Kartik	23	Male	Tech	60	70	B	130	Kerala
5	Rank 6	Pratiksha	24	Female	Non-Tech	58	55	C	113	Rajasthan
6	Rank 7	Maya	22	Female	Non-Tech	55	50	C	105	Tane
7	Rank 8	Shani	21	Male	Tech	50	50	C	100	Pune
8	Rank 9	Neelam	24	Female	Non-Tech	50	47	C	97	Chennai
9	Rank 10	Mangal	22	Male	Non-Tech	45	46	C	91	Chennai

In [50]:
```
df[df["Name"]=="Ravi"]["Background"]
```

Out[50]:
```
0    Tech
Name: Background, dtype: object
```

In [51]:
```
df[df["Gender"]=="Male"]["Total"].mean()
```

Out[51]:
```
133.0
```

In [54]:
```
df.groupby("city")["Total"].mean()
```

Out[54]:
```
city
Chennai      124.0
Delhi        150.0
Kerala       130.0
Mumbai       143.0
Pune         100.0
Rajasthan    113.0
Tane         105.0
bangalore    161.0
Name: Total, dtype: float64
```

In [58]:
```
df.groupby("city")["Total"].mean().sort_values(ascending=False)
```

Out[58]:
```
city
bangalore    161.0
Delhi        150.0
Mumbai       143.0
Kerala       130.0
Chennai      124.0
Rajasthan    113.0
Tane         105.0
Pune         100.0
Name: Total, dtype: float64
```

In [ ]:

In [ ]: