let us assume that a dataset consists of 5 columns namely Rollno, Name, Dept, Mark, Locations. write the code for the following functions -1.display first & last 5 rows -2.display info of rollno column -3.change the column name rollno as regno -4.delete the column location -5.display the mark > 80 and mark < 95 -6.display the marks in ascending order -7.insert new column as gpa -8.find the sum of null values -9.find the sum of marks -10.create subset for first 3 columns -11.visualize the student mark using line chart -12.display the name and mark info using bar chart 13.apply stacked bar chart for any one column 14.locate the legend in top left location 15.draw the scatter plot for any two columns 16.display the x-axis and y-axis labels 17.display the area chart for any two columns -18.find the max mark from the dataset -19.find the min mark from the dataset -20.find the mean value from the column mark

In [60]:
```
import pandas as pd
```

In [61]:
```
import numpy as np
```

In [62]:
```
import seaborn as sns
```

In [63]:
```
import matplotlib.pyplot as  plt
```

In [64]:
```
ds=pd.DataFrame({
    'RollNo':[1,2,3,4,5],
    'Name':['Arun','Nikhil','Arjun','Ram','Ravi'],
    'Dept':['CSE','ECE','EEE','MECH','IT'],
    'Mark':[91,85,78,94,88],
    'Location':['Tirupati','Chennai','Nellore','Ongole','Kadapa']
})
```

In [65]:
```
ds
```

Out[65]:

	RollNo	Name	Dept	Mark	Location
0	1	Arun	CSE	91	Tirupati
1	2	Nikhil	ECE	85	Chennai
2	3	Arjun	EEE	78	Nellore
3	4	Ram	MECH	94	Ongole
4	5	Ravi	IT	88	Kadapa

In [66]:
```
print('display first 5 rows')
print(ds.head())
print('display last 5 rows')
print(ds.tail())
```

```
display first 5 rows
   RollNo    Name  Dept  Mark  Location
0       1    Arun   CSE    91  Tirupati
1       2  Nikhil   ECE    85   Chennai
2       3   Arjun   EEE    78   Nellore
3       4     Ram  MECH    94    Ongole
4       5    Ravi    IT    88    Kadapa
display last 5 rows
   RollNo    Name  Dept  Mark  Location
0       1    Arun   CSE    91  Tirupati
1       2  Nikhil   ECE    85   Chennai
2       3   Arjun   EEE    78   Nellore
3       4     Ram  MECH    94    Ongole
4       5    Ravi    IT    88    Kadapa
```

In [67]:
```
ds.head(2)
```

Out[67]:

	RollNo	Name	Dept	Mark	Location
0	1	Arun	CSE	91	Tirupati
1	2	Nikhil	ECE	85	Chennai

In [68]:
```
ds.columns
```

Out[68]:
```
Index(['RollNo', 'Name', 'Dept', 'Mark', 'Location'], dtype='object')
```

In [69]:
```
ds.rename(columns={'RollNo':'RegNo'})
```

Out[69]:

	RegNo	Name	Dept	Mark	Location
0	1	Arun	CSE	91	Tirupati
1	2	Nikhil	ECE	85	Chennai
2	3	Arjun	EEE	78	Nellore
3	4	Ram	MECH	94	Ongole
4	5	Ravi	IT	88	Kadapa

In [70]:
```
ds.drop(columns=['Location'])
```

Out[70]:

	RollNo	Name	Dept	Mark
0	1	Arun	CSE	91
1	2	Nikhil	ECE	85
2	3	Arjun	EEE	78
3	4	Ram	MECH	94
4	5	Ravi	IT	88

In [71]:
```
ds[((ds['Mark']>80)&(ds['Mark']<95))]
```

Out[71]:

	RollNo	Name	Dept	Mark	Location
0	1	Arun	CSE	91	Tirupati
1	2	Nikhil	ECE	85	Chennai
3	4	Ram	MECH	94	Ongole
4	5	Ravi	IT	88	Kadapa

In [72]:
```
ds.rename(columns={'RollNo':"RegNo"})
```

Out[72]:

	RegNo	Name	Dept	Mark	Location
0	1	Arun	CSE	91	Tirupati
1	2	Nikhil	ECE	85	Chennai
2	3	Arjun	EEE	78	Nellore
3	4	Ram	MECH	94	Ongole
4	5	Ravi	IT	88	Kadapa

In [73]:
```
ds.loc[:,"RollNo"]
```

Out[73]:
```
0    1
1    2
2    3
3    4
4    5
Name: RollNo, dtype: int64
```

In [74]:
```
ds.sort_values("Mark")
```

Out[74]:

	RollNo	Name	Dept	Mark	Location
2	3	Arjun	EEE	78	Nellore
1	2	Nikhil	ECE	85	Chennai
4	5	Ravi	IT	88	Kadapa
0	1	Arun	CSE	91	Tirupati
3	4	Ram	MECH	94	Ongole

In [75]:
```
ds.insert(5,"Gpa",[9.1,8.5,7.8,9.4,8.8])
```

In [76]:
```
ds
```

Out[76]:

	RollNo	Name	Dept	Mark	Location	Gpa
0	1	Arun	CSE	91	Tirupati	9.1
1	2	Nikhil	ECE	85	Chennai	8.5
2	3	Arjun	EEE	78	Nellore	7.8
3	4	Ram	MECH	94	Ongole	9.4
4	5	Ravi	IT	88	Kadapa	8.8

In [77]:
```
ds.isnull()
```

Out[77]:

	RollNo	Name	Dept	Mark	Location	Gpa
0	False	False	False	False	False	False
1	False	False	False	False	False	False
2	False	False	False	False	False	False
3	False	False	False	False	False	False
4	False	False	False	False	False	False

In [79]:
```
ds.isnull().sum()
```

Out[79]:
```
RollNo      0
Name        0
Dept        0
Mark        0
Location    0
Gpa         0
dtype: int64
```

In [80]:
```
sum(ds['Mark'])
```

Out[80]:
```
436
```

In [84]:
```
ds.Mark.sum()
```

Out[84]:
```
436
```

In [85]:
```
ds.Mark.mean()
```

Out[85]:
```
87.2
```

In [86]:
```
ds.Mark.max()
```

Out[86]:
```
94
```

In [87]:
```
ds.Mark.min()
```

Out[87]:
```
78
```

In [91]:
```
ds1=ds[['RollNo','Name','Dept']]
```

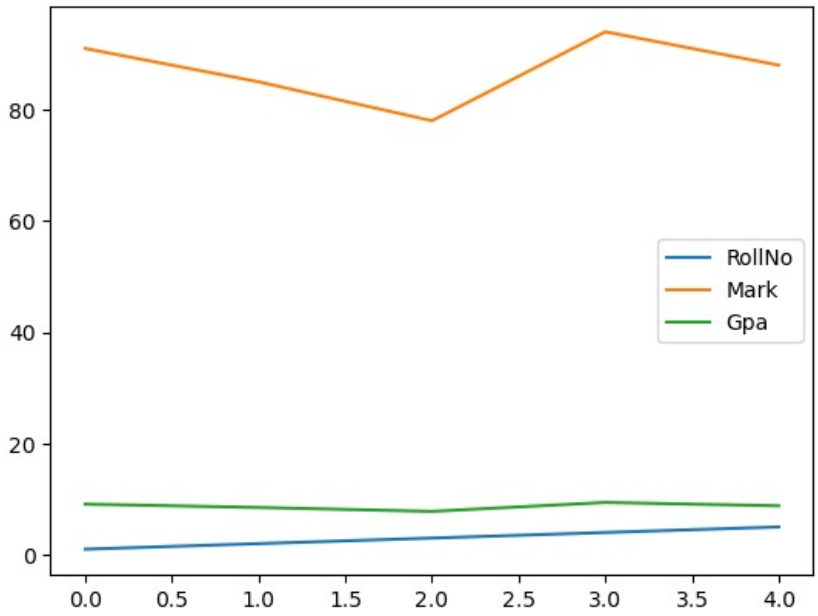
In [92]:
```
ds1
```

Out[92]:

	RollNo	Name	Dept
0	1	Arun	CSE
1	2	Nikhil	ECE
2	3	Arjun	EEE
3	4	Ram	MECH
4	5	Ravi	IT

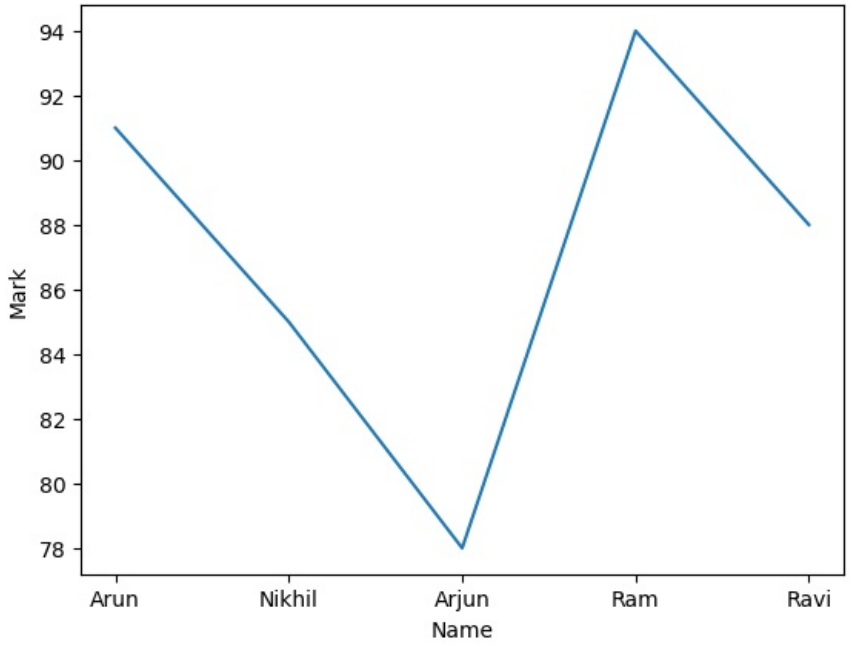
In [96]:
```
ds.plot.line()
```

Out[96]:
```
<AxesSubplot:>
```



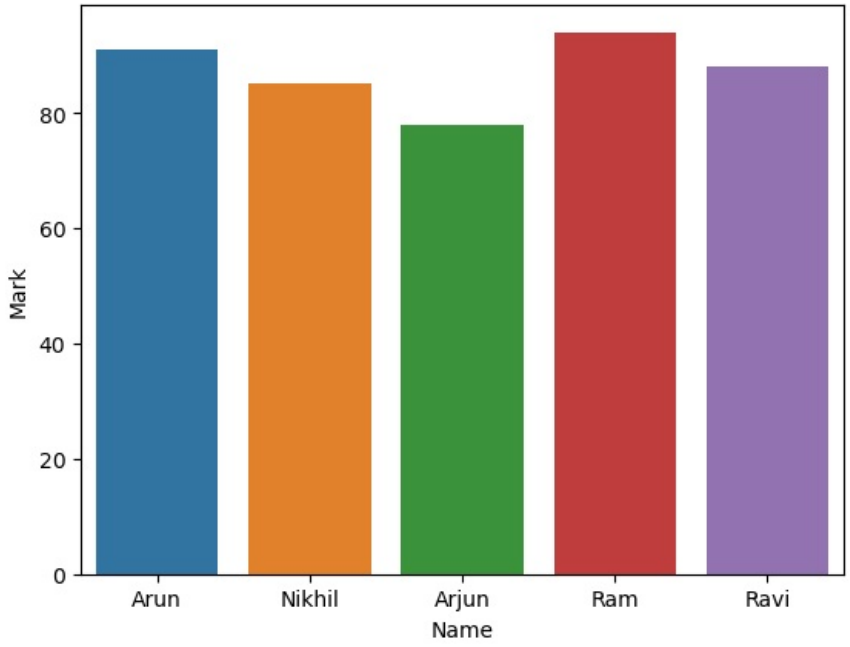
In [97]:
```
sns.lineplot(x='Name',y='Mark',data=ds)
```

Out[97]:
```
<AxesSubplot:xlabel='Name', ylabel='Mark'>
```



In [98]:
```
sns.barplot(x='Name',y='Mark',data=ds)
```

Out[98]:
```
<AxesSubplot:xlabel='Name', ylabel='Mark'>
```



In [ ]:
```

```