DAY – 9

[13.02.2025]

Exp : 36 – 40

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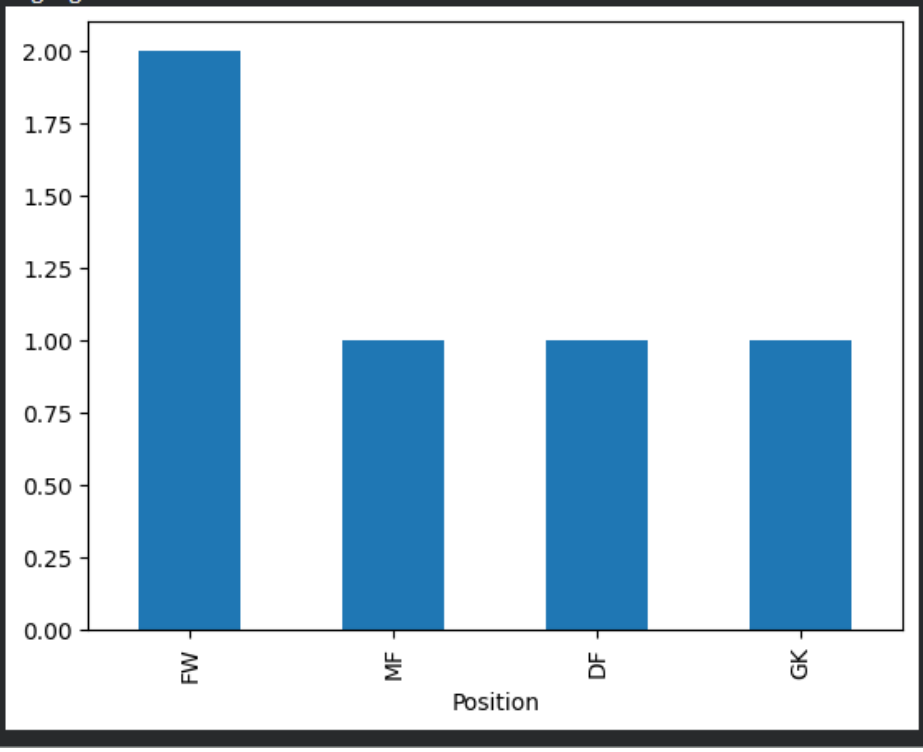
[32] 0s

```
import pandas as pd, matplotlib.pyplot as plt
df = pd.DataFrame({"Name":["A","B","C","D","E"],"Age":[22,28,30,26,32],
                   "Goals":[10,15,7,20,5],"Salary":[50,80,60,90,70],
                   "Position":["FW","MF","DF","FW","GK"]})
print(df.nlargest(5,"Goals")[["Name","Goals"]])
print("Avg Age:", df["Age"].mean())
df["Position"].value_counts().plot(kind="bar"); plt.show()
```

```
  Name  Goals
3    D     20
1    B     15
0    A     10
2    C      7
4    E      5
Avg Age: 27.6
```



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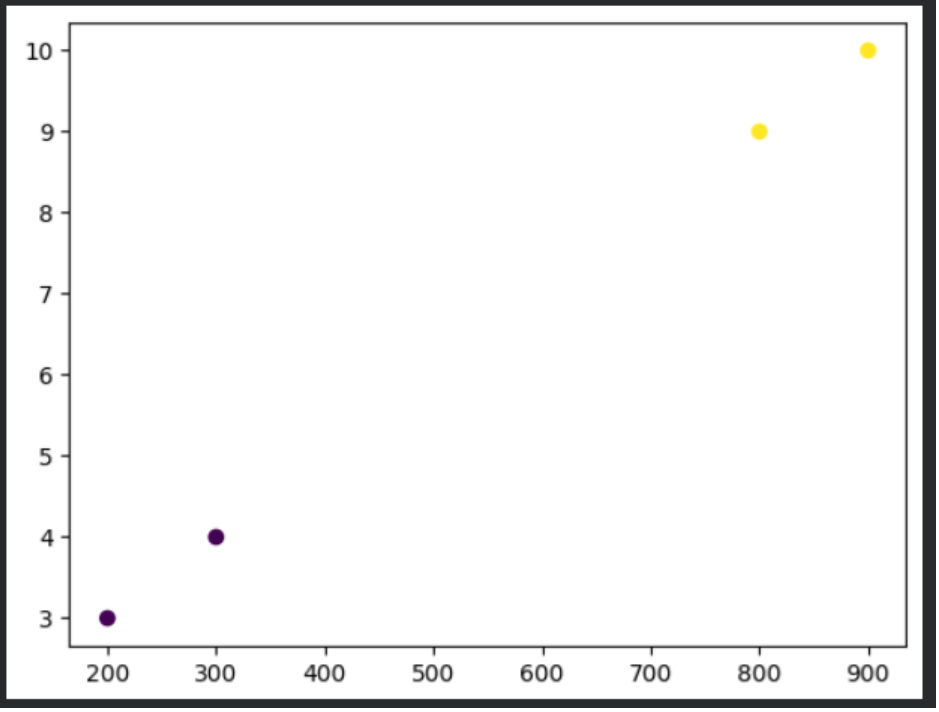
[30] ✓ 0s

```
import pandas as pd
data = {"City":["A","B","C"],"Temp":[[20,30,25],[15,18,20],[25,27,26]]}
df = pd.DataFrame(data)
df["Std"] = df["Temp"].apply(lambda x: pd.Series(x).std())
print("Most Consistent City:", df.loc[df["Std"].idxmin(),"City"])
```

```
Most Consistent City: C
```

[31] ✓ 0s

```
import numpy as np, matplotlib.pyplot as plt
from sklearn.cluster import KMeans
X = np.array([[200,3],[300,4],[800,9],[900,10]])
k = KMeans(2).fit(X)
plt.scatter(X[:,0],X[:,1],c=k.labels_); plt.show()
```



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[28] ✓ 0s

```
import pandas as pd, numpy as np
prices = pd.Series([100,102,98,105,110])
print("Mean:", prices.mean(), "Std Dev:", prices.std())
```

```
Mean: 103.0 Std Dev: 4.69041575982343
```

[29] ✓ 1s

```
import numpy as np, matplotlib.pyplot as plt
study = np.array([2,4,6,8,10])
score = np.array([40,55,65,80,90])
print("Correlation:", np.corrcoef(study,score)[0,1])
plt.scatter(study,score); plt.show()
```

```
Correlation: 0.9976086055845276
```