

EX.NO:01A

## Analyse the trend of data science job

### postings over the last decade

AIM:

To analyse how the number of job postings related to Data Science has changed over the last ten years using available job data, and visualize the trend to understand growth in demand.

ALGORITHM:

1. **Import required libraries** – pandas, matplotlib, seaborn.
2. **Load dataset** containing job postings (CSV or other format).
3. **Filter** the data to include only “Data Science” or related job titles.
4. **Extract** the posting year from the job posting date.
5. **Group** the data by year and count the number of job postings each year.
6. **Plot** the trend using a line graph to show the change in job postings over the decade.
7. **Interpret** the result to identify the growth pattern.

PROGRAM:

```
import pandas as pd
```

```
import matplotlib.pyplot as plt
```

```
data = {
```

```
    "Year": [2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024],
```

```
"Postings": [1200, 1600, 2400, 3600, 5200, 7600, 9800, 13200,
16800, 20500]
}
```

```
df = pd.DataFrame(data)
df
df['YoY_Growth_%'] = df['Postings'].pct_change() * 100
df
df['MA_3y'] = df['Postings'].rolling(window=3).mean()
df
plt.figure(figsize=(8,5))
plt.plot(df['Year'], df['Postings'], marker='o', label='Postings')
plt.plot(df['Year'], df['MA_3y'], linestyle='--', label='3-Year MA')
plt.title("Data Science Job Postings Over the Last Decade")
plt.xlabel("Year")
plt.ylabel("Number of Postings")
plt.legend()
plt.grid(True)
plt.show()
plt.figure(figsize=(8,5))
plt.bar(df['Year'], df['YoY_Growth_%'], color='skyblue')
plt.title("Year-on-Year Growth in Data Science Job Postings")
```

```
plt.xlabel("Year")
```

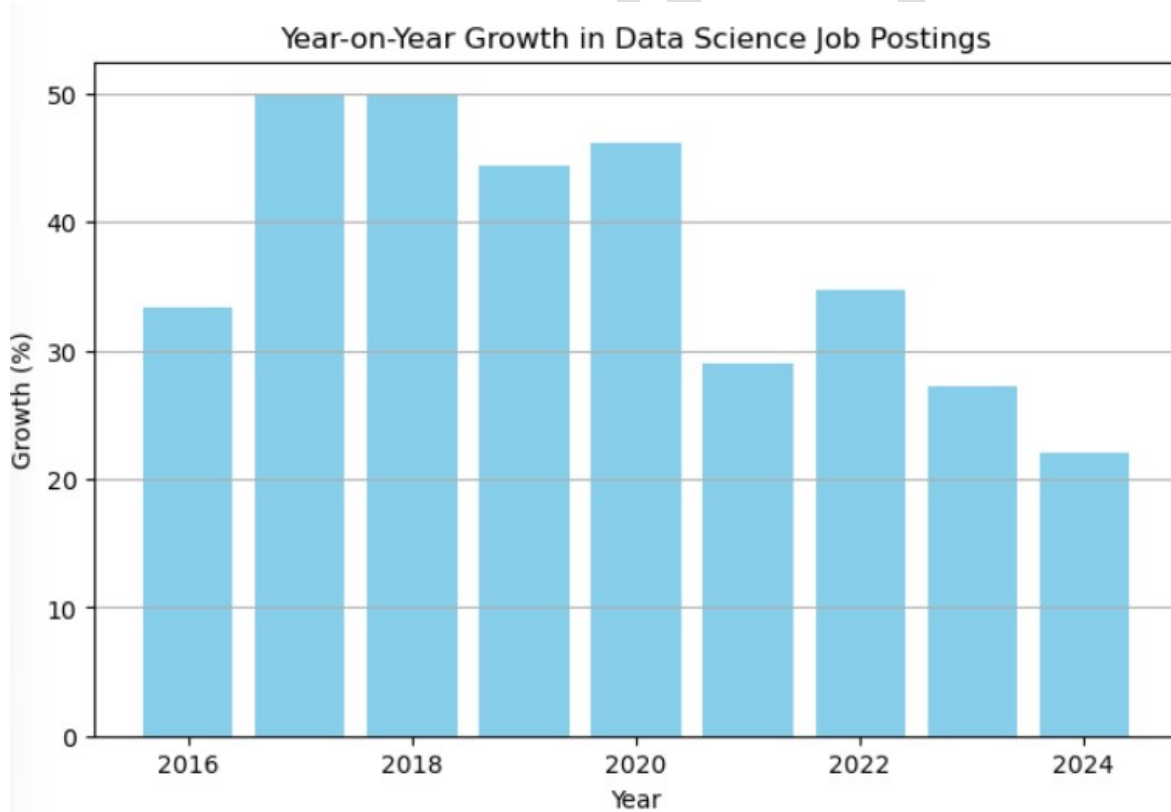
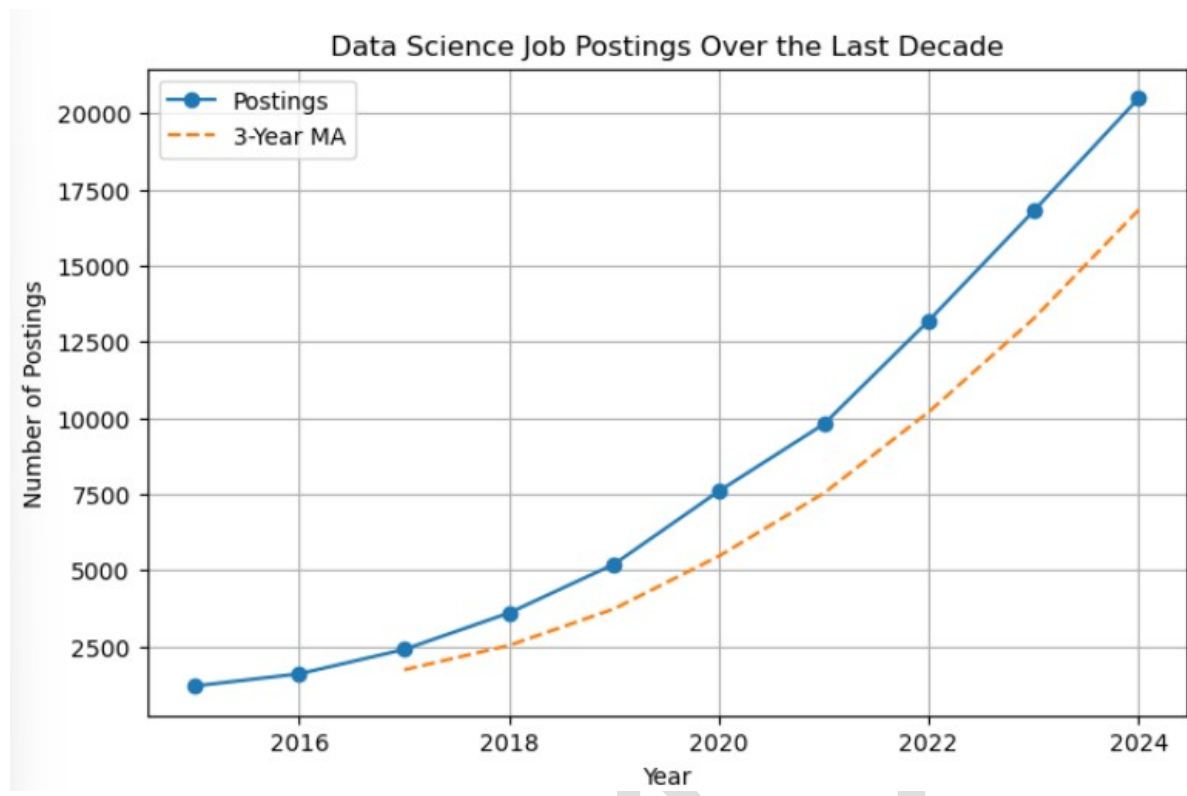
```
plt.ylabel("Growth (%)")
```

```
plt.grid(axis='y')
```

```
plt.show()
```

OUTPUT:

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	Year	Postings		Year	Postings	YoY_Growth_%
0	2015	1200	0	2015	1200	NaN
1	2016	1600	1	2016	1600	33.333333
2	2017	2400	2	2017	2400	50.000000
3	2018	3600	3	2018	3600	50.000000
4	2019	5200	4	2019	5200	44.444444
5	2020	7600	5	2020	7600	46.153846
6	2021	9800	6	2021	9800	28.947368
7	2022	13200	7	2022	13200	34.693878
8	2023	16800	8	2023	16800	27.272727
9	2024	20500	9	2024	20500	22.023810



	Year	Postings	YoY_Growth_%	MA_3y
0	2015	1200	NaN	NaN
1	2016	1600	33.333333	NaN
2	2017	2400	50.000000	1733.333333
3	2018	3600	50.000000	2533.333333
4	2019	5200	44.444444	3733.333333
5	2020	7600	46.153846	5466.666667
6	2021	9800	28.947368	7533.333333
7	2022	13200	34.693878	10200.000000
8	2023	16800	27.272727	13266.666667
9	2024	20500	22.023810	16833.333333

## RESULT:

The analysis shows that **Data Science job postings have increased significantly over the last decade**, indicating a strong and growing demand for Data Science professionals worldwide.