

## Part\_3

```
In [1]: import pandas as pd
```

```
In [2]: orders = pd.read_excel(r"C:\Users\PRANAV\OneDrive\Desktop\JAR>List_of_Orders_1.xlsx")
order_details = pd.read_excel(r"C:\Users\PRANAV\OneDrive\Desktop\JAR\Order_Details_1.xlsx")
```

```
In [3]: print(orders.head())
```

	Order ID	Order Date	CustomerName	State	City
0	B-25601	2018-04-01	Bharat	Gujarat	Ahmedabad
1	B-25602	2018-04-01	Pearl	Maharashtra	Pune
2	B-25603	2018-04-03	Jahan	Madhya Pradesh	Bhopal
3	B-25604	2018-04-03	Divsha	Rajasthan	Jaipur
4	B-25605	2018-04-05	Kasheen	West Bengal	Kolkata

```
In [5]: print(order_details.head())
```

	Order ID	Amount	Profit	Quantity	Category	Sub-Category
0	B-25601	1275	-1148	7	Furniture	Bookcases
1	B-25601	66	-12	5	Clothing	Stole
2	B-25601	8	-2	3	Clothing	Hankerchief
3	B-25601	80	-56	4	Electronics	Electronic Games
4	B-25602	168	-111	2	Electronics	Phones

```
In [6]: order_id_col_orders = "Order ID"
order_id_col_details = "Order ID"
```

```
In [7]: merged_df = pd.merge(orders, order_details, left_on=order_id_col_orders, right_on=order_id_col_details, how="inr
```

```
In [8]: print(merged_df.head())
```


	Order ID	Order Date	CustomerName	State	City	Amount	Profit	\
0	B-25601	2018-04-01	Bharat	Gujarat	Ahmedabad	1275	-1148	
1	B-25601	2018-04-01	Bharat	Gujarat	Ahmedabad	66	-12	
2	B-25601	2018-04-01	Bharat	Gujarat	Ahmedabad	8	-2	
3	B-25601	2018-04-01	Bharat	Gujarat	Ahmedabad	80	-56	
4	B-25602	2018-04-01	Pearl	Maharashtra	Pune	168	-111	

	Quantity	Category	Sub-Category
0	7	Furniture	Bookcases
1	5	Clothing	Stole
2	3	Clothing	Hankerchief
3	4	Electronics	Electronic Games
4	2	Electronics	Phones

```
In [13]: merged_df["Amount"] = pd.to_numeric(merged_df["Amount"], errors="coerce")
merged_df["Profit"] = pd.to_numeric(merged_df["Profit"], errors="coerce")
```

```
In [15]: regional_summary = merged_df.groupby("State").agg(total_sales=("Amount", "sum"), avg_profit=("Profit", "mean"), or
```



```
In [16]: top_5_states = regional_summary.sort_values(by="order_count", ascending=False).head(5)
```

```
In [17]: print(top_5_states)
```

	State	total_sales	avg_profit	order_count
10	Madhya Pradesh	105140	16.326471	101
11	Maharashtra	95348	21.296552	90
14	Rajasthan	21149	16.986486	32
4	Gujarat	21058	5.344828	27
13	Punjab	16786	-10.150000	25

```
In [ ]:
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In [ ]: