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PRACTICAL NO 4

Implement all 20 grains using Pandas methods. The Sample Grains for the Sales Dataset are as:

- Which was the best month for sales? How much was earned that month?
- Which product sold the most? Why do you think it did?
- Which city sold the most products?
- What Products are most often sold together?

CODE:

```
import pandas as pd
df=pd.read_csv('grainsales (1).csv') print(df)
```

	GrainName	State	City	Months	Year	Sales
0	Ragi	Maharashtra	Nagpur	JAN	2023	1000000
1	Bajra	Panjab	Amritsar	FEB	2023	1500000
2	Ragi	Maharashtra	Nagpur	JAN	2020	1000000
3	Bajra	Panjab	Amritsar	FEB	2023	1500000
4	Ragi	Maharashtra	Nagpur	JAN	2022	1000000
5	Bajra	Panjab	Amritsar	FEB	2022	1500000

6 Oats Hariyana Gurugram MARCH 2023 2000000

7 Sattu Gujarat Surat APRIL 2023 2500000

8 Sooji Tamil Nadu Madurai MAY 2023 3000000

9 Brown rice Telangana Hyderabad JUNE 2023 3500000

10 Wheat West Bengol Asansole JULY 2022 4000000

11 Corn UP Kanpur AUG 2023 4500000

12 Ragi Maharashtra Nagpur JAN 2023 1000000

13 Bajra Panjab Amritsar FEB 2022 1500000

14 Oats Hariyana Gurugram MARCH 2023 2000000

15 Sattu Gujarat Surat APRIL 2023 2500000

16 Sooji Tamil Nadu Madurai MAY 2022 3000000

17 Brown rice Telangana Hyderabad JUNE 2023 3500000

18 Wheat West Bengol Asansole JULY 2023 4000000

19 Corn UP Kanpur AUG 2023 4500000

20 Sooji Tamil Nadu Madurai MAY 2022 3000000

21 Brown rice Telangana Hyderabad JUNE 2023 3500000

22 Wheat West Bengol Asansole JULY 2023 4000000

23 Corn UP Kanpur AUG 2023 4500000

24 Ragi Maharashtra Nagpur JAN 2022 1000000

25 Brown rice Telangana Hyderabad JUNE 2023 3500000

26 Wheat West Bengol Asansole JULY 2019 4000000

Best Month for the Sale

import pandas as pd df=pd.read_csv('grainsales

(1).csv')

```
mm=df.groupby('Months')['Sales'].sum().idxmax()
tm=df.groupby('Months')['Sales'].sum().max()
print("The best month for the sale is:",mm)
print("Total earning of ",mm,"is:",tm)
```

```
The best month for the sale is: JULY
Total earning of  JULY is: 16000000
```

Product which is sold most

```
psm=df.GrainName.value_counts() print("The
product which sold most is:",psm)
print("Because total sales of it is:
",psm['Ragi'])
```

```
The product which sold most is: Ragi          5
Bajra         4
Brown rice    4
Wheat         4
Sooji         3
Corn          3
Oats          2
Sattu         2
Name: GrainName, dtype: int64
Because total sales of it is:  5
```

City which sold the most products

```
cmp = df['City'].value_counts().idxmax()
cmn = df['City'].value_counts().max()
print("The city which sold the most product is:",cmp)
print("Number:",cmn)
```

The city which sold the most product is: Nagpur

Number: 5

What products are most often sold together?

```
pc = df.groupby('Year')['GrainName'].unique().reset_index()
print("Products most often sold together:")
print(pc)
```

Products most often sold together:

	Year	GrainName
0	2019	[Wheat]
1	2020	[Ragi]
2	2022	[Ragi, Bajra, Wheat, Sooji] 3
2023	[Ragi, Bajra, Oats, Sattu , Sooji, Brown rice ...	