Name: Sanskar Subhashrao Mandavkar

Roll No: 831

PRN: 202201090137

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 ...