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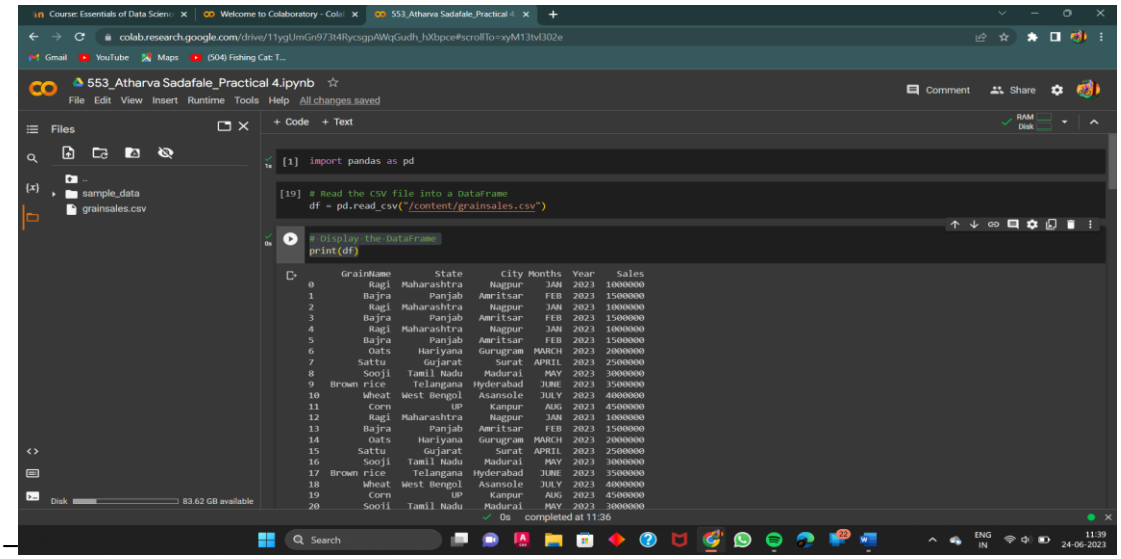
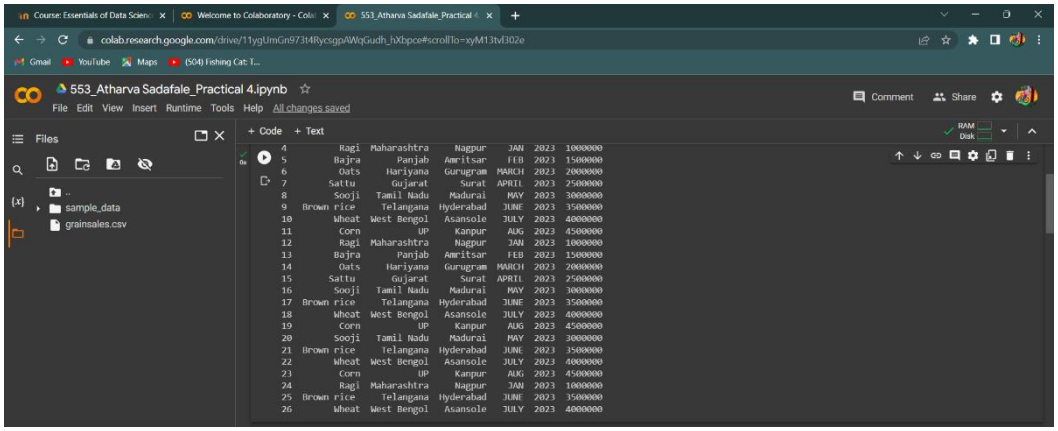
EDS Practical 4






```
1] #Count the number of unique grain names:
num_grains = df['GrainName'].nunique()
print("Number of unique grain names:", num_grains)
```

Result: `Number of unique grain names: 8`

```
2] #Calculate the total sales amount for each grain:
grain_sales = df.groupby('GrainName')['Sales'].sum()
print(grain_sales)
```

Result :

```
GrainName
Bajra           6000000
Brown rice     14000000
Corn           13500000
Oats            4000000
Ragi            5000000
Sattu           5000000
Sooji           9000000
Wheat          16000000
```

```
3] #The state with the highest total sales:
top_state = df.groupby('State')['Sales'].sum().idxmax()
print("State with the highest total sales:", top_state)
```

Result: `State with the highest total sales: West Bengol`

```
4] #Calculate the average sales amount per month:
monthly_average = df.groupby('Months')['Sales'].mean()
print(monthly_average)
```

Result:

```
Months
APRIL    2500000.0
AUG      4500000.0
FEB      1500000.0
JAN      1000000.0
JULY     4000000.0
JUNE     3500000.0
MARCH    2000000.0
MAY      3000000.0
```

```
5] #The total sales for each grain in Telangana:
telangana_grain_sales = df[df['State'] ==
'Telangana'].groupby('GrainName')['Sales'].sum()
print(telangana_grain_sales)
```

Result:

```
GrainName
Brown rice     14000000
```

```
6] #the total sales for each state:
state_sales = df.groupby('State')['Sales'].sum()
print(state_sales)
```

Result:

```
State
Gujarat          5000000
Hariyana         4000000
Maharashtra      5000000
Panjab           6000000
Tamil Nadu       9000000
Telangana       14000000
UP              13500000
West Bengol     16000000
```

```
7] #Find the top 3 cities with the highest sales:
top_cities = df.groupby('City')['Sales'].sum().nlargest(3)
print(top_cities)
```

Result:

```
City
Asansole     16000000
Hyderabad    14000000
Kanpur       13500000
```

```
8] #Data to show high data sales of more than 2000000 amount
high_sales_data = df[df['Sales'] > 1500000]
print(high_sales_data)
```

Result:

```
      GrainName        State       City Months  Year    Sales
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  2023  4000000
11         Corn           UP     Kanpur    AUG  2023  4500000
14         Oats     Hariyana   Gurugram  MARCH  2023  2000000
15       Sattu       Gujarat      Surat  APRIL  2023  2500000
16        Sooji   Tamil Nadu    Madurai    MAY  2023  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	2023	3000000
21	Brown rice	Telangana	Hyderabad	JUNE	2023	3500000
22	Wheat	West Bengol	Asansole	JULY	2023	4000000
23	Corn	UP	Kanpur	AUG	2023	4500000
25	Brown rice	Telangana	Hyderabad	JUNE	2023	3500000
26	Wheat	West Bengol	Asansole	JULY	2023	4000000

```
9] #Sort the data by sales amount in descending order:
sorted_data = df.sort_values(by='Sales', ascending=False)
print(sorted_data)
```

Result:

	GrainName	State	City	Months	Year	Sales
19	Corn	UP	Kanpur	AUG	2023	4500000
23	Corn	UP	Kanpur	AUG	2023	4500000
11	Corn	UP	Kanpur	AUG	2023	4500000
26	Wheat	West Bengol	Asansole	JULY	2023	4000000
18	Wheat	West Bengol	Asansole	JULY	2023	4000000
22	Wheat	West Bengol	Asansole	JULY	2023	4000000
10	Wheat	West Bengol	Asansole	JULY	2023	4000000
9	Brown rice	Telangana	Hyderabad	JUNE	2023	3500000
21	Brown rice	Telangana	Hyderabad	JUNE	2023	3500000
25	Brown rice	Telangana	Hyderabad	JUNE	2023	3500000
17	Brown rice	Telangana	Hyderabad	JUNE	2023	3500000
8	Sooji	Tamil Nadu	Madurai	MAY	2023	3000000
20	Sooji	Tamil Nadu	Madurai	MAY	2023	3000000
16	Sooji	Tamil Nadu	Madurai	MAY	2023	3000000
7	Sattu	Gujarat	Surat	APRIL	2023	2500000
15	Sattu	Gujarat	Surat	APRIL	2023	2500000
6	Oats	Hariyana	Gurugram	MARCH	2023	2000000
14	Oats	Hariyana	Gurugram	MARCH	2023	2000000
13	Bajra	Panjab	Amritsar	FEB	2023	1500000
1	Bajra	Panjab	Amritsar	FEB	2023	1500000
5	Bajra	Panjab	Amritsar	FEB	2023	1500000
3	Bajra	Panjab	Amritsar	FEB	2023	1500000
12	Ragi	Maharashtra	Nagpur	JAN	2023	1000000
4	Ragi	Maharashtra	Nagpur	JAN	2023	1000000
24	Ragi	Maharashtra	Nagpur	JAN	2023	1000000
2	Ragi	Maharashtra	Nagpur	JAN	2023	1000000
0	Ragi	Maharashtra	Nagpur	JAN	2023	1000000

```
10] #Filter the data to include only sales in Tamil Nadu and May:
tamil_nadu_may_sales = df[(df['State'] == 'Tamil Nadu') & (df['Months']
== 'MAY')]
print(tamil_nadu_may_sales)
```

Result:

	GrainName	State	City	Months	Year	Sales
8	Sooji	Tamil Nadu	Madurai	MAY	2023	3000000
16	Sooji	Tamil Nadu	Madurai	MAY	2023	3000000
20	Sooji	Tamil Nadu	Madurai	MAY	2023	3000000