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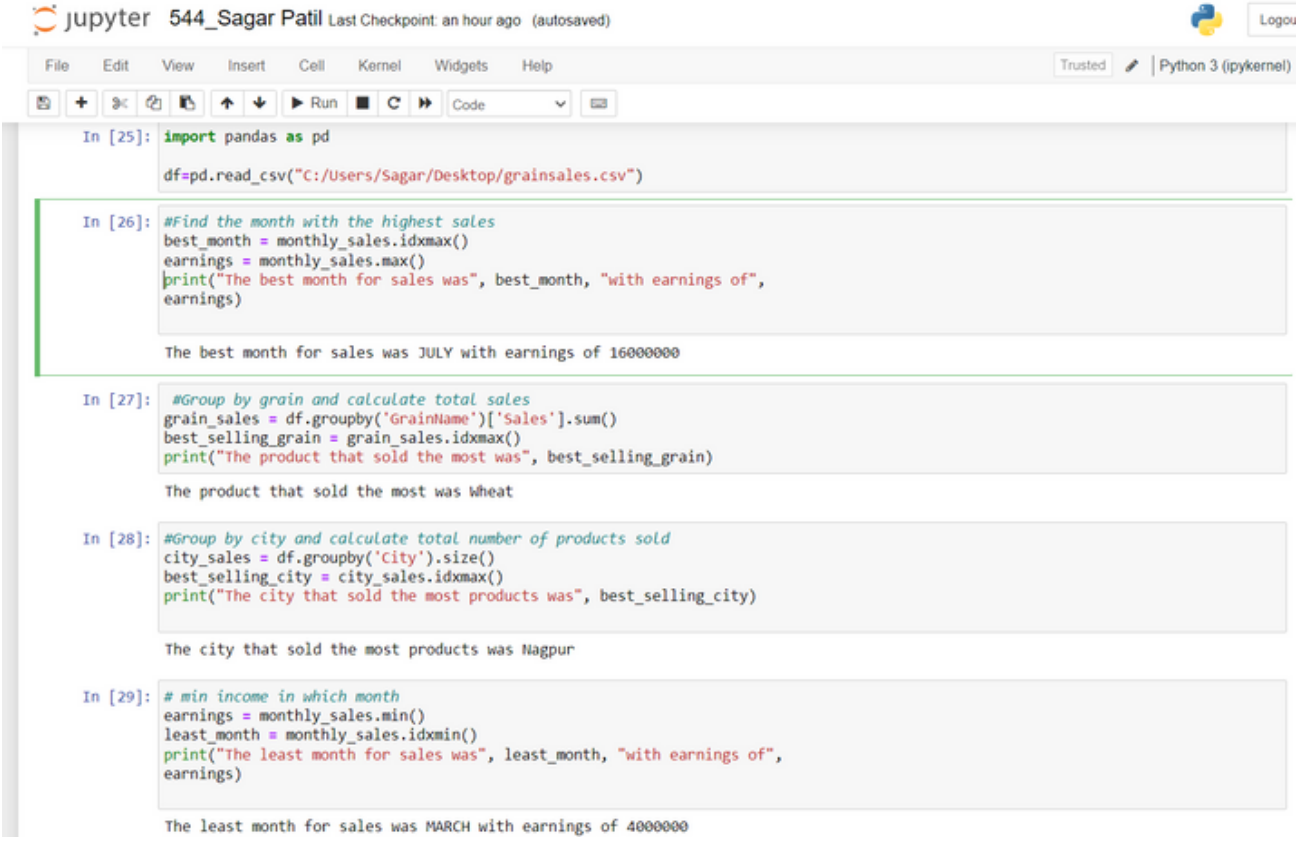


```
#Retrieve the total sales for each grain.

total_sales_per_grain = df.groupby('GrainName')['Sales'].sum()
print(total_sales_per_grain)
```

```
GrainName
Bajra          6000000
Brown rice    14000000
Corn          13500000
Oats           4000000
Ragi           5000000
Sattu          5000000
Sooji          9000000
Wheat         16000000
Name: Sales, dtype: int64
```

```
#Find the total sales in Maharashtra
```

```
#Find the total sales in Maharashtra.

sales_in_maharashtra = df[df['State'] == 'Maharashtra']
total_sales_in_maharashtra = sales_in_maharashtra['Sales'].sum()
print("The total sales in Maharashtra:", total_sales_in_maharashtra)
```

```
The total sales in Maharashtra: 5000000
```

```
sales_in_may_2023 = df[(df['Months'] == 'MAY') & (df['Year'] == 2023)]
print("Sales data for May 2023:")
print(sales_in_may_2023)
```

```
Sales data for May 2023:
   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
```

```
#Find the top-selling grain in terms of sales.

total_sales_per_grain = df.groupby('GrainName')['Sales'].sum()
top_selling_grain = total_sales_per_grain.idxmax()
print("The top-selling grain is:", top_selling_grain)
```

```
The top-selling grain is: Wheat
```

```
#Find the average sales for each grain.

average_sales = df.groupby('GrainName')['Sales'].mean()
print("Average sales for each grain:")
print(average_sales)
```

```
Average sales for each grain:
GrainName
Bajra          1500000.0
Brown rice     3500000.0
Corn           4500000.0
Oats           2000000.0
Ragi           1000000.0
Sattu          2500000.0
Sooji          3000000.0
Wheat          4000000.0
Name: Sales, dtype: float64
```

```
#Retrieve the sales data for oats.

oats_sales = df[df['GrainName'] == 'Oats']
print("Sales data for oats:")
print(oats_sales)
```

```
Sales data for oats:
   GrainName     State      City Months  Year    Sales
6       Oats  Hariyana  Gurugram  MARCH  2023  2000000
14      Oats  Hariyana  Gurugram  MARCH  2023  2000000
```

```
#Get the sales data for the top three months with the highest sales.

monthly_sales = df.groupby('Months')['Sales'].sum()
sorted_sales = monthly_sales.sort_values(ascending=False)
top_three_months = sorted_sales.head(3)
```

```
top_three_months = sorted_sales.head(3)
top_three_sales_data = df[df['Months'].isin(top_three_months.index)]
print("Sales data for the top three months with the highest sales:")
print(top_three_sales_data)
```

```
Sales data for the top three months with the highest sales:
      GrainName        State       City Months  Year    Sales
9   Brown rice    Telangana  Hyderabad   JUNE  2023  3500000
10       Wheat  West Bengol   Asansole   JULY  2023  4000000
11        Corn           UP     Kanpur    AUG  2023  4500000
17  Brown rice    Telangana  Hyderabad   JUNE  2023  3500000
18       Wheat  West Bengol   Asansole   JULY  2023  4000000
19        Corn           UP     Kanpur    AUG  2023  4500000
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
```

```
#Identify the city with the highest sales.

city_sales = df.groupby('City')['Sales'].sum()
city_with_highest_sales = city_sales.idxmax()
print("City with the highest sales:", city_with_highest_sales)
```

```
City with the highest sales: Asansole
```

```
#Get the sales data for the state of Punjab.

sales_in_punjab = df[df['State'] == 'Punjab']
print("Sales data for Punjab:")
print(sales_in_punjab)
```

```
Sales data for Punjab:
Empty DataFrame
Columns: [GrainName, State, City, Months, Year, Sales]
Index: []
```

```
#Find the total sales for the year 2023.

sales_2023 = df[df['Year'] == 2023]
total_sales_2023 = sales_2023['Sales'].sum()
print("Total sales for the year 2023:", total_sales_2023)
```

```
Total sales for the year 2023: 72500000
```