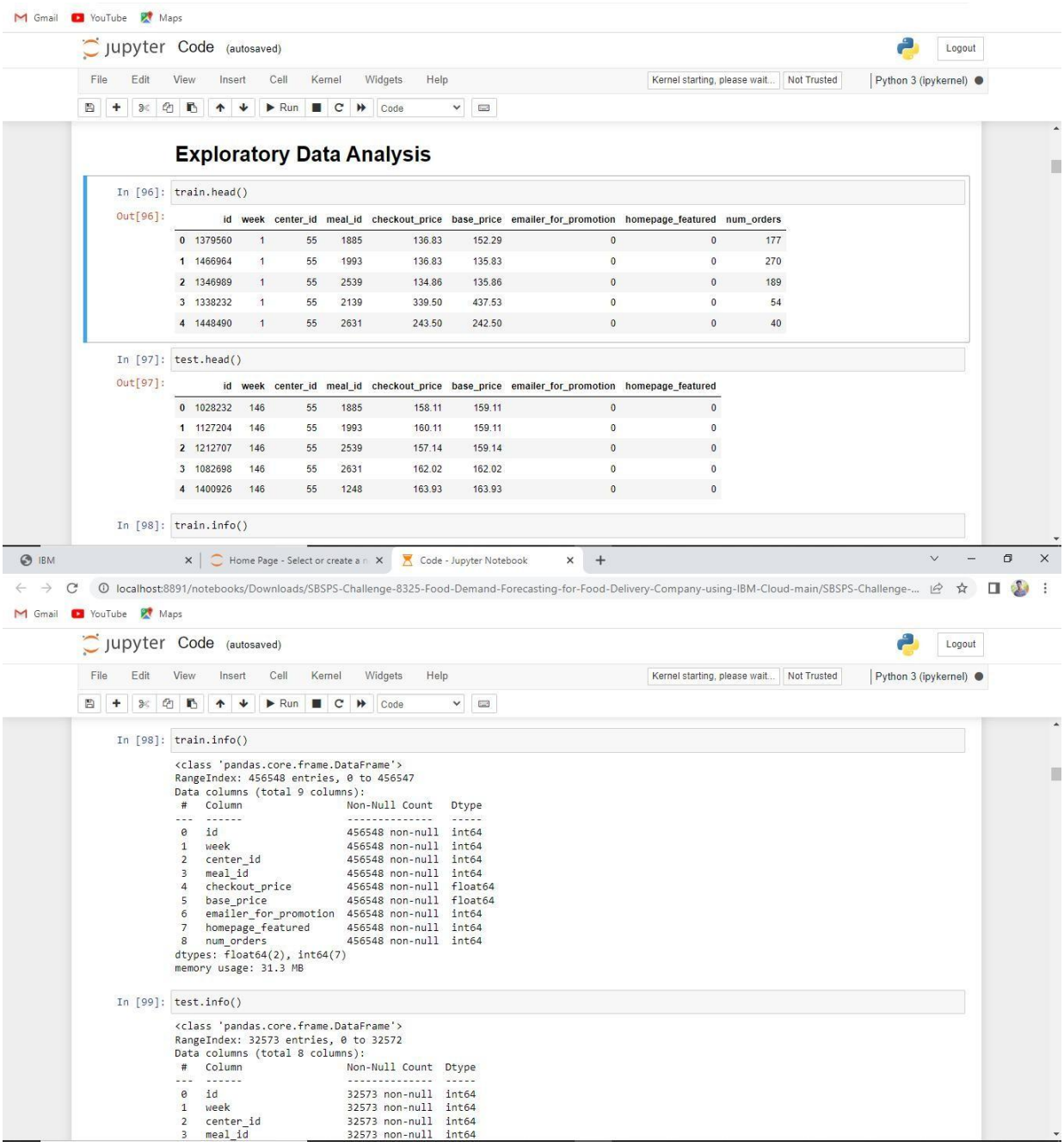
**TEAM ID:** PNT2022TMID36553

**PROJECT NAME:** DemandEst - AI powered Food Demand Forecaster



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Run Code

## Exploratory Data Analysis

In [96]:
```
train.head()
```

Out[96]:

| | id | week | center_id | meal_id | checkout_price | base_price | emailer_for_promotion | homepage_featured | num_orders |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 1379560 | 1 | 55 | 1885 | 136.83 | 152.29 | 0 | 0 | 177 |
| 1 | 1466964 | 1 | 55 | 1993 | 136.83 | 135.83 | 0 | 0 | 270 |
| 2 | 1346989 | 1 | 55 | 2539 | 134.86 | 135.86 | 0 | 0 | 189 |
| 3 | 1338232 | 1 | 55 | 2139 | 339.50 | 437.53 | 0 | 0 | 54 |
| 4 | 1448490 | 1 | 55 | 2631 | 243.50 | 242.50 | 0 | 0 | 40 |

In [97]:
```
test.head()
```

Out[97]:

| | id | week | center_id | meal_id | checkout_price | base_price | emailer_for_promotion | homepage_featured |
|---|---|---|---|---|---|---|---|---|
| 0 | 1028232 | 146 | 55 | 1885 | 158.11 | 159.11 | 0 | 0 |
| 1 | 1127204 | 146 | 55 | 1993 | 160.11 | 159.11 | 0 | 0 |
| 2 | 1212707 | 146 | 55 | 2539 | 157.14 | 159.14 | 0 | 0 |
| 3 | 1082698 | 146 | 55 | 2631 | 162.02 | 162.02 | 0 | 0 |
| 4 | 1400926 | 146 | 55 | 1248 | 163.93 | 163.93 | 0 | 0 |

In [98]:
```
train.info()
```

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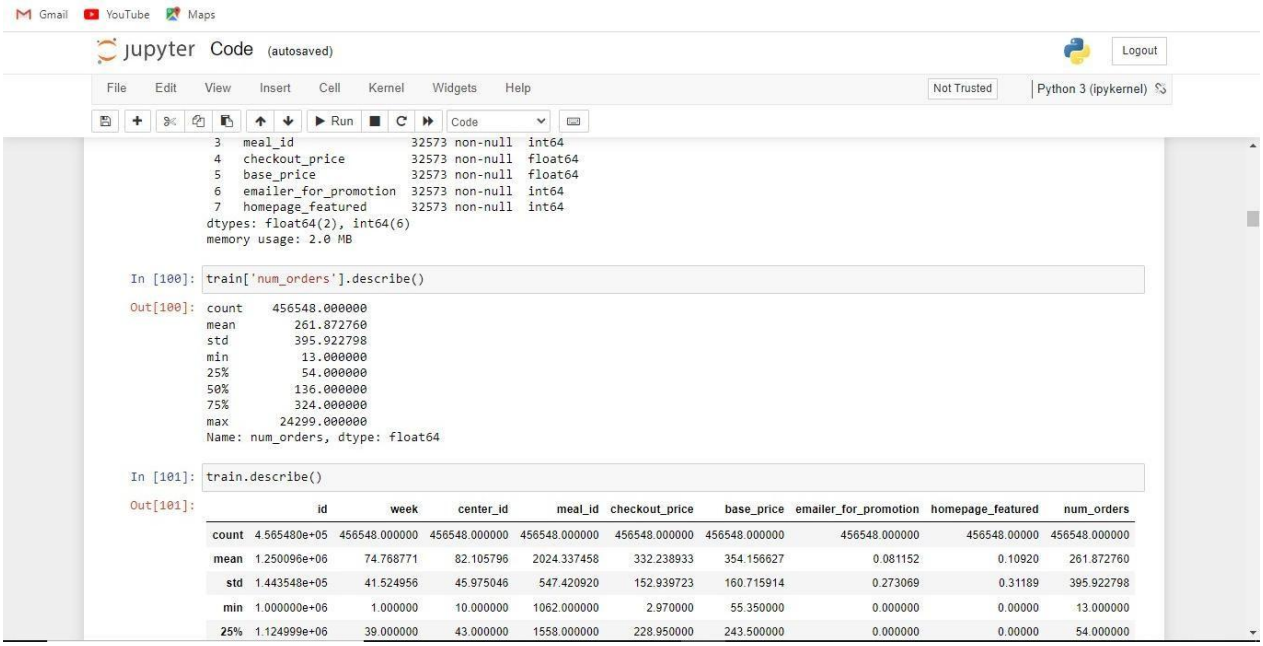
Run Code

In [98]:
```
train.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 456548 entries, 0 to 456547
Data columns (total 9 columns):
 #   Column                Non-Null Count   Dtype
---  ------                --------------   -----
 0   id                    456548 non-null  int64
 1   week                  456548 non-null  int64
 2   center_id             456548 non-null  int64
 3   meal_id               456548 non-null  int64
 4   checkout_price        456548 non-null  float64
 5   base_price            456548 non-null  float64
 6   emailer_for_promotion 456548 non-null  int64
 7   homepage_featured     456548 non-null  int64
 8   num_orders            456548 non-null  int64
dtypes: float64(2), int64(7)
memory usage: 31.3 MB
```

In [99]:
```
test.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 32573 entries, 0 to 32572
Data columns (total 8 columns):
 #   Column                Non-Null Count  Dtype
---  ------                --------------  -----
 0   id                    32573 non-null  int64
 1   week                  32573 non-null  int64
 2   center_id             32573 non-null  int64
 3   meal_id               32573 non-null  int64
```



```
 3   meal_id                 32573 non-null  int64
 4   checkout_price          32573 non-null  float64
 5   base_price              32573 non-null  float64
 6   emailer_for_promotion   32573 non-null  int64
 7   homepage_featured       32573 non-null  int64
dtypes: float64(2), int64(6)
memory usage: 2.0 MB
```

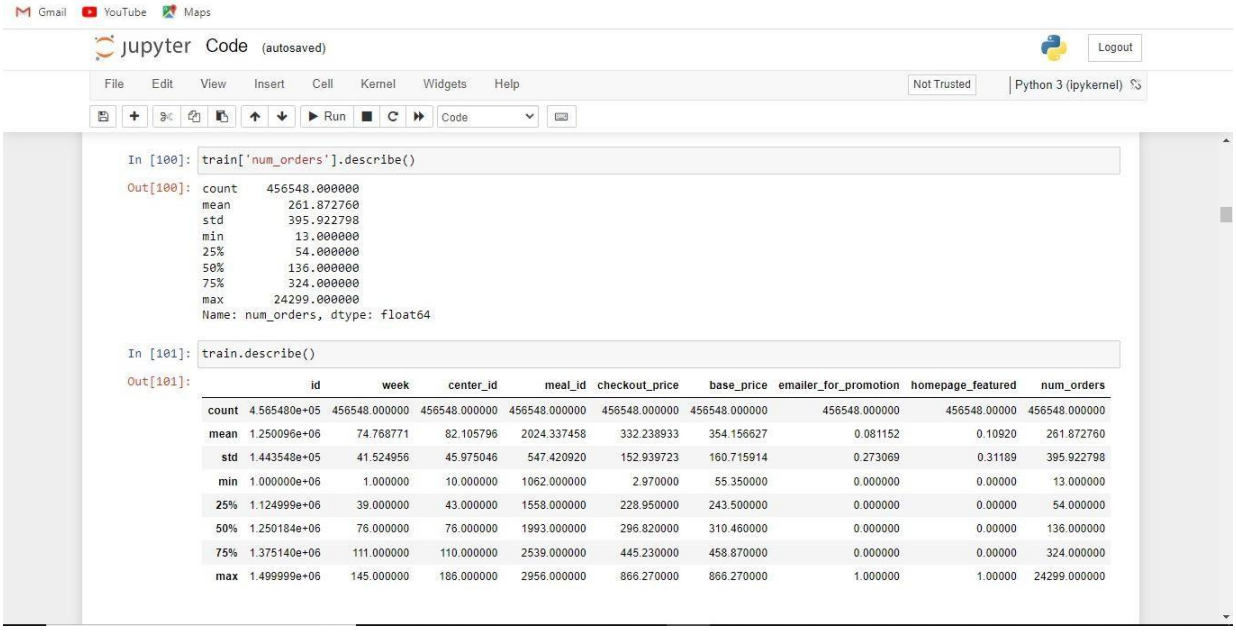
In [100]:
```
train['num_orders'].describe()
```

Out[100]:
```
count    456548.000000
mean        261.872760
std         395.922798
min          13.000000
25%          54.000000
50%         136.000000
75%         324.000000
max       24299.000000
Name: num_orders, dtype: float64
```

In [101]:
```
train.describe()
```

Out[101]:

| | id | week | center_id | meal_id | checkout_price | base_price | emailer_for_promotion | homepage_featured | num_orders |
|---|---|---|---|---|---|---|---|---|---|
| count | 4.565480e+05 | 456548.000000 | 456548.000000 | 456548.000000 | 456548.000000 | 456548.000000 | 456548.000000 | 456548.00000 | 456548.000000 |
| mean | 1.250096e+06 | 74.768771 | 82.105796 | 2024.337458 | 332.238933 | 354.156627 | 0.081152 | 0.10920 | 261.872760 |
| std | 1.443548e+05 | 41.524956 | 45.975046 | 547.420920 | 152.939723 | 160.715914 | 0.273069 | 0.31189 | 395.922798 |
| min | 1.000000e+06 | 1.000000 | 10.000000 | 1062.000000 | 2.970000 | 55.350000 | 0.000000 | 0.00000 | 13.000000 |
| 25% | 1.124999e+06 | 39.000000 | 43.000000 | 1558.000000 | 228.950000 | 243.500000 | 0.000000 | 0.00000 | 54.000000 |



In [100]:
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train['num_orders'].describe()
```

Out[100]:
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mean        261.872760
std         395.922798
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25%          54.000000
50%         136.000000
75%         324.000000
max       24299.000000
Name: num_orders, dtype: float64
```

In [101]:
```
train.describe()
```

Out[101]:

| | id | week | center_id | meal_id | checkout_price | base_price | emailer_for_promotion | homepage_featured | num_orders |
|---|---|---|---|---|---|---|---|---|---|
| count | 4.565480e+05 | 456548.000000 | 456548.000000 | 456548.000000 | 456548.000000 | 456548.000000 | 456548.000000 | 456548.00000 | 456548.000000 |
| mean | 1.250096e+06 | 74.768771 | 82.105796 | 2024.337458 | 332.238933 | 354.156627 | 0.081152 | 0.10920 | 261.872760 |
| std | 1.443548e+05 | 41.524956 | 45.975046 | 547.420920 | 152.939723 | 160.715914 | 0.273069 | 0.31189 | 395.922798 |
| min | 1.000000e+06 | 1.000000 | 10.000000 | 1062.000000 | 2.970000 | 55.350000 | 0.000000 | 0.00000 | 13.000000 |
| 25% | 1.124999e+06 | 39.000000 | 43.000000 | 1558.000000 | 228.950000 | 243.500000 | 0.000000 | 0.00000 | 54.000000 |
| 50% | 1.250184e+06 | 76.000000 | 76.000000 | 1993.000000 | 296.820000 | 310.460000 | 0.000000 | 0.00000 | 136.000000 |
| 75% | 1.375140e+06 | 111.000000 | 110.000000 | 2539.000000 | 445.230000 | 458.870000 | 0.000000 | 0.00000 | 324.000000 |
| max | 1.499999e+06 | 145.000000 | 186.000000 | 2956.000000 | 866.270000 | 866.270000 | 1.000000 | 1.00000 | 24299.000000 |