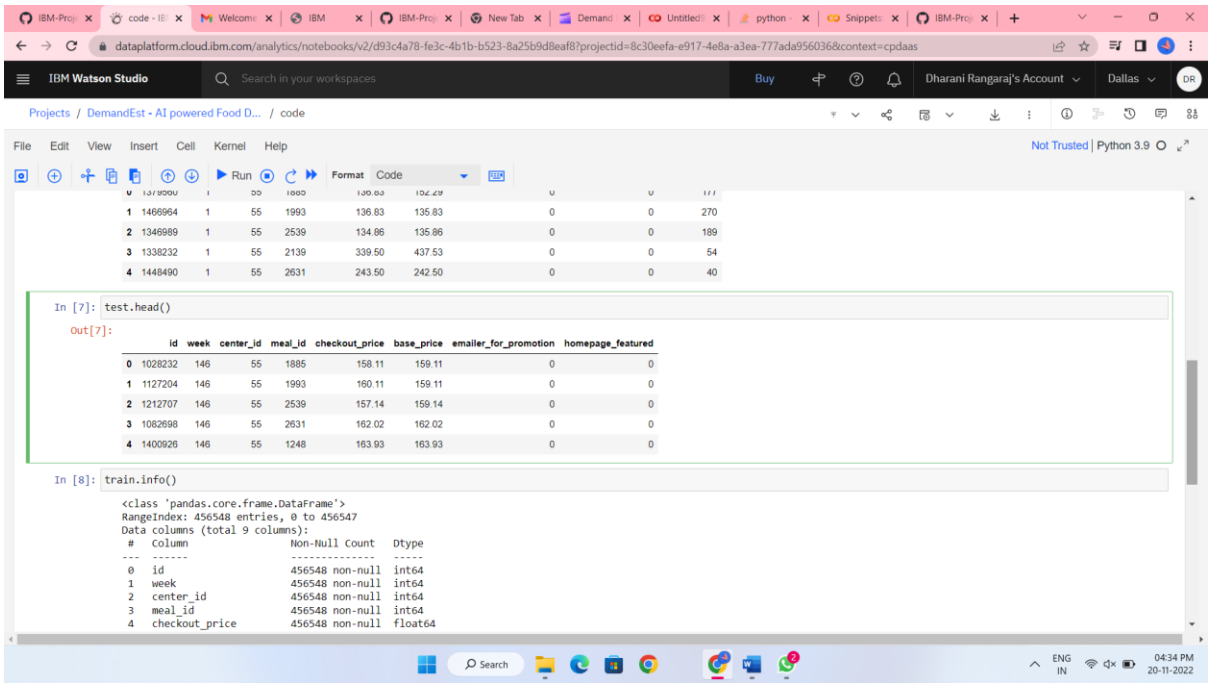
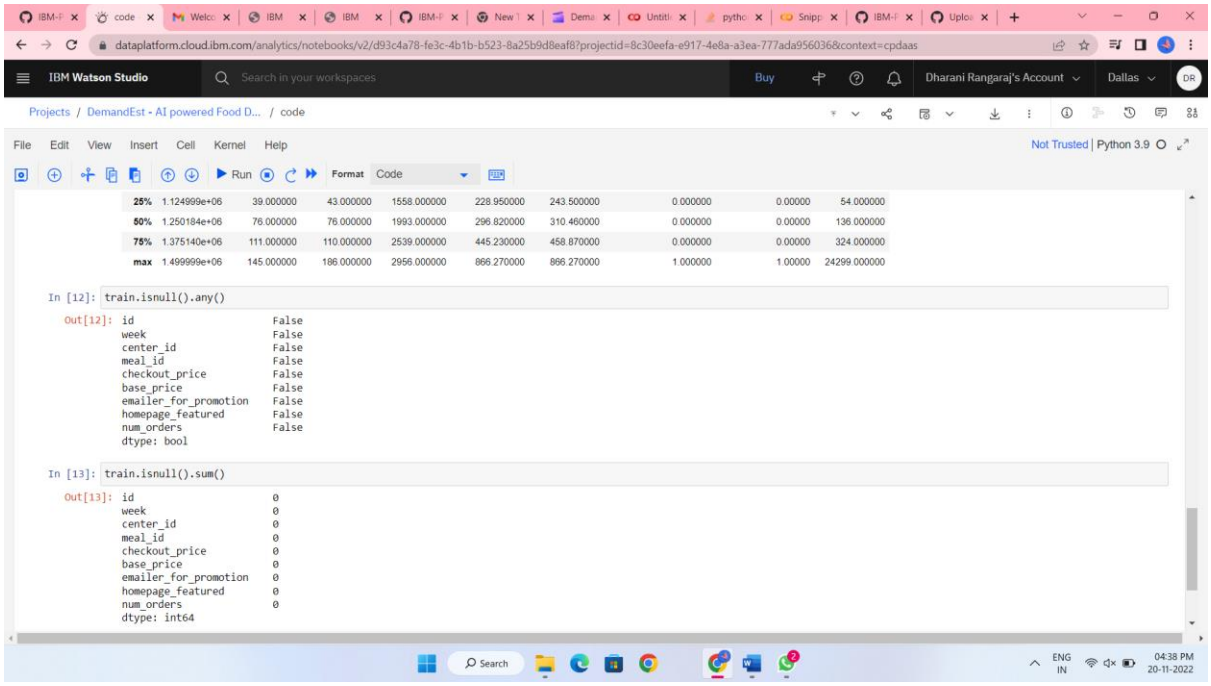
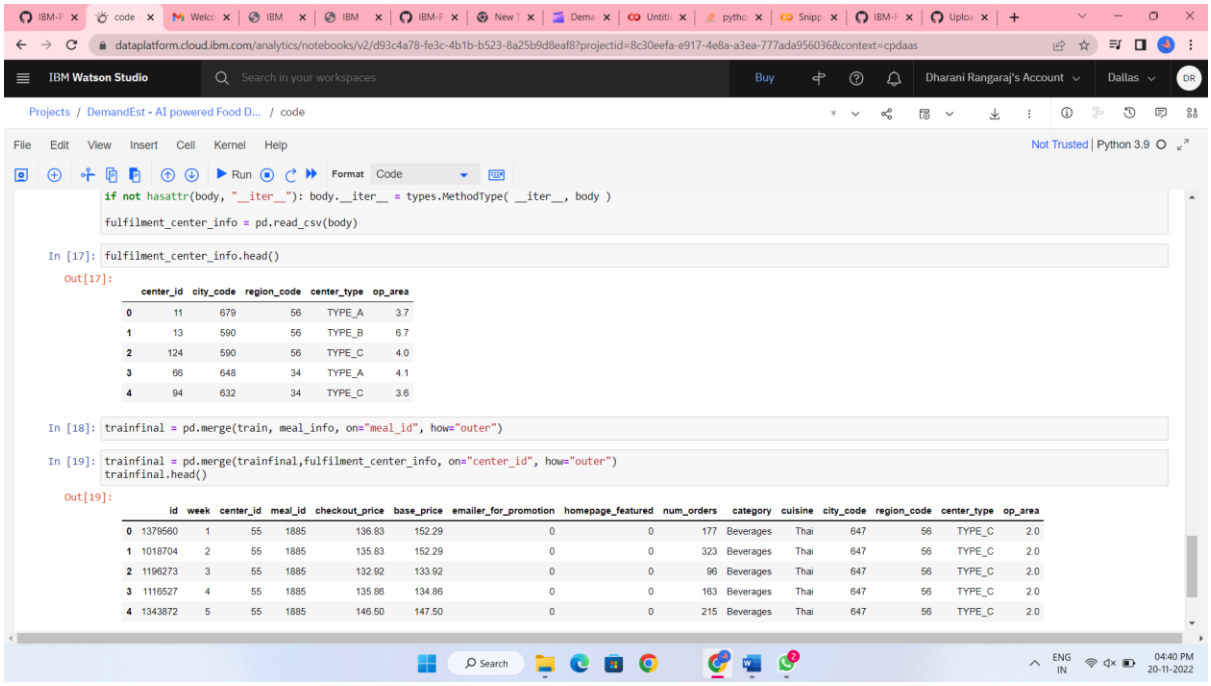
DemandEst - AI powered Food Demand Forecaster

Team ID : PNT2022TMID42688

Training the ML model in IBM Cloud







```
if not hasattr(body, "__iter__"): body.__iter__ = types.MethodType( __iter__, body )

fulfilment_center_info = pd.read_csv(body)
```

In [17]:
```
fulfilment_center_info.head()
```

Out[17]:

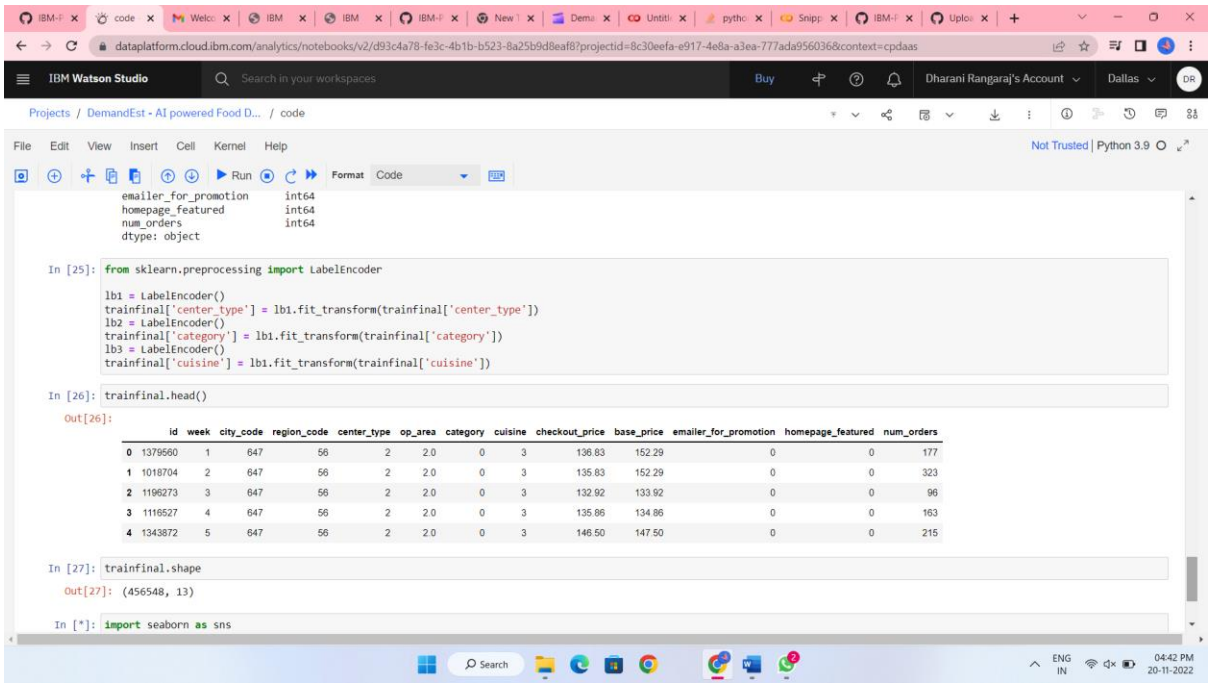
	center_id	city_code	region_code	center_type	op_area
0	11	679	56	TYPE_A	3.7
1	13	590	56	TYPE_B	6.7
2	124	590	56	TYPE_C	4.0
3	66	648	34	TYPE_A	4.1
4	94	632	34	TYPE_C	3.6

In [18]:
```
trainfinal = pd.merge(train, meal_info, on="meal_id", how="outer")
```

In [19]:
```
trainfinal = pd.merge(trainfinal,fulfilment_center_info, on="center_id", how="outer")
trainfinal.head()
```

Out[19]:

	id	week	center_id	meal_id	checkout_price	base_price	emailer_for_promotion	homepage_featured	num_orders	category	cuisine	city_code	region_code	center_type	op_area
0	1379560	1	55	1885	136.83	152.29	0	0	177	Beverages	Thai	647	56	TYPE_C	2.0
1	1018704	2	55	1885	135.83	152.29	0	0	323	Beverages	Thai	647	56	TYPE_C	2.0
2	1196273	3	55	1885	132.92	133.92	0	0	96	Beverages	Thai	647	56	TYPE_C	2.0
3	1116527	4	55	1885	135.86	134.86	0	0	163	Beverages	Thai	647	56	TYPE_C	2.0
4	1343872	5	55	1885	146.50	147.50	0	0	215	Beverages	Thai	647	56	TYPE_C	2.0



```
emailer_for_promotion     int64
homepage_featured         int64
num_orders                int64
dtype: object
```

In [25]:
```
from sklearn.preprocessing import LabelEncoder

lb1 = LabelEncoder()
trainfinal['center_type'] = lb1.fit_transform(trainfinal['center_type'])
lb2 = LabelEncoder()
trainfinal['category'] = lb1.fit_transform(trainfinal['category'])
lb3 = LabelEncoder()
trainfinal['cuisine'] = lb1.fit_transform(trainfinal['cuisine'])
```

In [26]:
```
trainfinal.head()
```

Out[26]:

	id	week	city_code	region_code	center_type	op_area	category	cuisine	checkout_price	base_price	emailer_for_promotion	homepage_featured	num_orders
0	1379560	1	647	56	2	2.0	0	3	136.83	152.29	0	0	177
1	1018704	2	647	56	2	2.0	0	3	135.83	152.29	0	0	323
2	1196273	3	647	56	2	2.0	0	3	132.92	133.92	0	0	96
3	1116527	4	647	56	2	2.0	0	3	135.86	134.86	0	0	163
4	1343872	5	647	56	2	2.0	0	3	146.50	147.50	0	0	215

In [27]:
```
trainfinal.shape
```

Out[27]: (456548, 13)

In [*]:
```
import seaborn as sns
```

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In [29]:
```
plt.style.use('fivethirtyeight')
plt.figure(figsize=(12,7))
sns.displot(trainfinal.num_orders, bins = 25)
plt.xlabel("num_orders")
plt.ylabel("Number of Buyers")
plt.title("num_orders Distribution")
```

Out[29]:
```
Text(0.5, 1.0, 'num_orders Distribution')
<Figure size 864x504 with 0 Axes>
```

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1	1018704	2	647	56	TYPE_C	2.0	Beverages	Thai	135.83	152.29	0	0	323
2	1196273	3	647	56	TYPE_C	2.0	Beverages	Thai	132.92	133.92	0	0	96
3	1116527	4	647	56	TYPE_C	2.0	Beverages	Thai	135.86	134.86	0	0	163
4	1343872	5	647	56	TYPE_C	2.0	Beverages	Thai	146.50	147.50	0	0	215

In [24]:
```
trainfinal.dtypes
```

Out[24]:
```
id                       int64
week                     int64
city_code                int64
region_code              int64
center_type             object
op_area                float64
category                object
cuisine                 object
checkout_price         float64
base_price             float64
emailer_for_promotion    int64
homepage_featured        int64
num_orders               int64
dtype: object
```

In [25]:
```
from sklearn.preprocessing import LabelEncoder

lb1 = LabelEncoder()
trainfinal['center_type'] = lb1.fit_transform(trainfinal['center_type'])
lb2 = LabelEncoder()
trainfinal['category'] = lb1.fit_transform(trainfinal['category'])
lb3 = LabelEncoder()
trainfinal['cuisine'] = lb1.fit_transform(trainfinal['cuisine'])
```

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