DSC VIT

RecOmax

Recommendation platform

Problem Statement

- Creating a product **recommendation** system
- With the help of Machine Learning **increase sales**
- Reduce **time** spent by Sales Representatives

Solution

- Create a **Product to Store** based recommendation system that is Centrally controlled
- Recommendations made based on previous **sales history** of the product
- Integrate **Online sales trends** to provide better real time product recommendation

Recomendation engine

- Product recommendations are made **separately** for each and every **store** depending on the sales history
- Features include **quantity** of products sold, **time** of the year (monthly or weekly)
- **Location** based features such as temperature and climate

Recomendation engine contd.

- Products **sold together** are recommended to the store by the distributor
- Integration with e-commerce websites to provide a **real time trend analysis**
- This will help analyse **market position** for each product separately

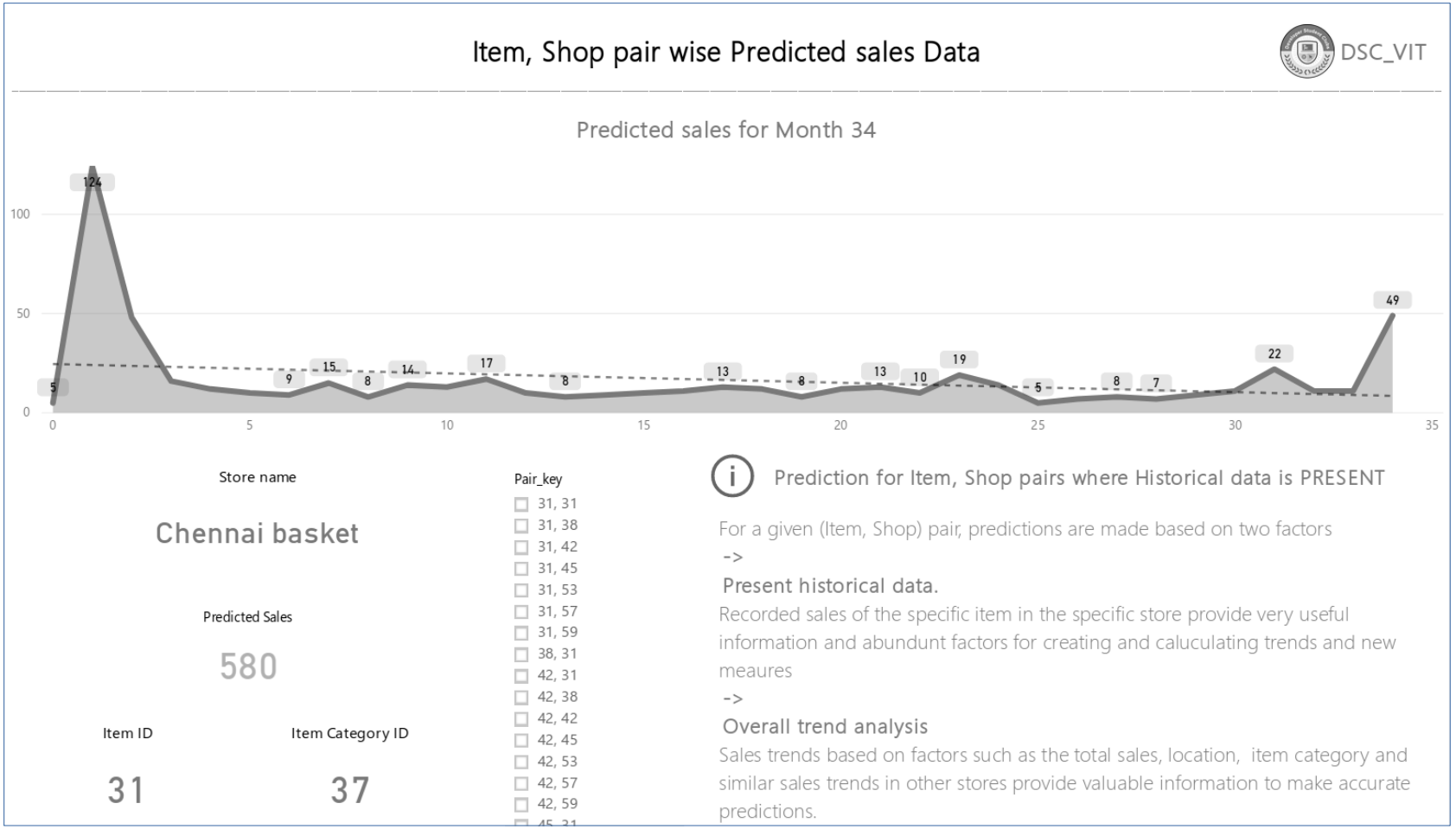
Recomendation engine contd.

- Online reviews work as a **bonus factor** to promote products
- Incase of poor online performance of a product, it provides a range of factors to **grade** the **competition**
- Integrating this complete platform will provide an **edge** over current traditional methods

Expected output

- Recommendation system with **store based product** recommendation
- Distributors get **sales information** on each and every product sold to the store
- **Overall sales** as a Key Performance Indicator (**KPI**)

Report

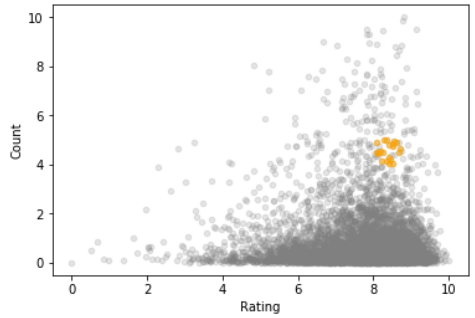

Item, Shop pair wise Predicted sales Data
DSC_VIT
Predicted sales for Month 34
124
5
9
15
8
14
17
8
13
8
13
10
19
5
8
7
22
49
0
50
100
0
5
10
15
20
25
30
35
Store name
Chennai basket
Predicted Sales
580
Item ID
31
Item Category ID
37
Pair_key
31, 31
31, 38
31, 42
31, 45
31, 53
31, 57
31, 59
38, 31
42, 31
42, 38
42, 42
42, 45
42, 53
42, 57
42, 59
Prediction for Item, Shop pairs where Historical data is PRESENT
For a given (Item, Shop) pair, predictions are made based on two factors
->
Present historical data.
Recorded sales of the specific item in the specific store provide very useful information and abundunt factors for creating and caluculating trends and new meaures
->
Overall trend analysis
Sales trends based on factors such as the total sales, location, item category and similar sales trends in other stores provide valuable information to make accurate predictions.

Notebooks

In [27]:
```
# Enter product ID to get a list of 20 recommended items

# User entered value
product_id = 'B00L5JHZJO'

product_data = [data_model_norm.loc[product_id][['Count', 'Rating', 'Unreliability']].values]

recommended_products = engine.kneighbors(X=product_data, n_neighbors=20, return_distance=False)

# List of product IDs form the indexes

products_list = []

for each in recommended_products:
    products_list.append(data_model_norm.iloc[each].index)

print("Recommended products: ")
print(products_list)

# Showing recommended products

ax = data_model_norm.plot(kind='scatter', x='Rating', y='Count', color='grey', alpha=0.20)
data_model_norm.iloc[recommended_products[0]].plot(kind='scatter', x='Rating', y='Count',\
                                                   color='orange', alpha=0.5, ax=ax)

ax2 = data_model_norm.plot(kind='scatter', x='Rating', y='Unreliability', color='grey', alpha=0.20)
data_model_norm.iloc[recommended_products[0]].plot(kind='scatter', x='Rating', y='Unreliability',\
                                                   color='orange', alpha=0.5, ax=ax2)
```

```
Recommended products:
[Index([u'B00L5JHZJO', u'B00021C1LI', u'B00FAEOCP0', u'B00178TVXG',
       u'B000ZLVUYO', u'B008O4YM4Y', u'B000L9YYTS', u'B001MWV40U',
       u'B000F63TW0', u'B000OQ2DL4', u'B001330XFA', u'B001HTYJLO',
       u'B000TAE0RK', u'B0023A7JF4', u'B001TJXI5U', u'B008RVYJS8',
       u'B0008IV7BU', u'B001C6H6F8', u'B000G33KEO', u'B000GHWSG6'],
      dtype='object', name=u'ProductId')]
```

Out[27]: <matplotlib.axes._subplots.AxesSubplot at 0x7f9fa8552110>



THANKS!

Team DSC_VIT powered by Google Developers

Any questions?

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