

# E-COMMERCE SHIPPING

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# AGENDA

- What is E-commerce shipping ?
- How does it works ?
- Overview of the dataset.
- Correlation In data (Visualization)
- Cluster analysis
- K-means
- kNN





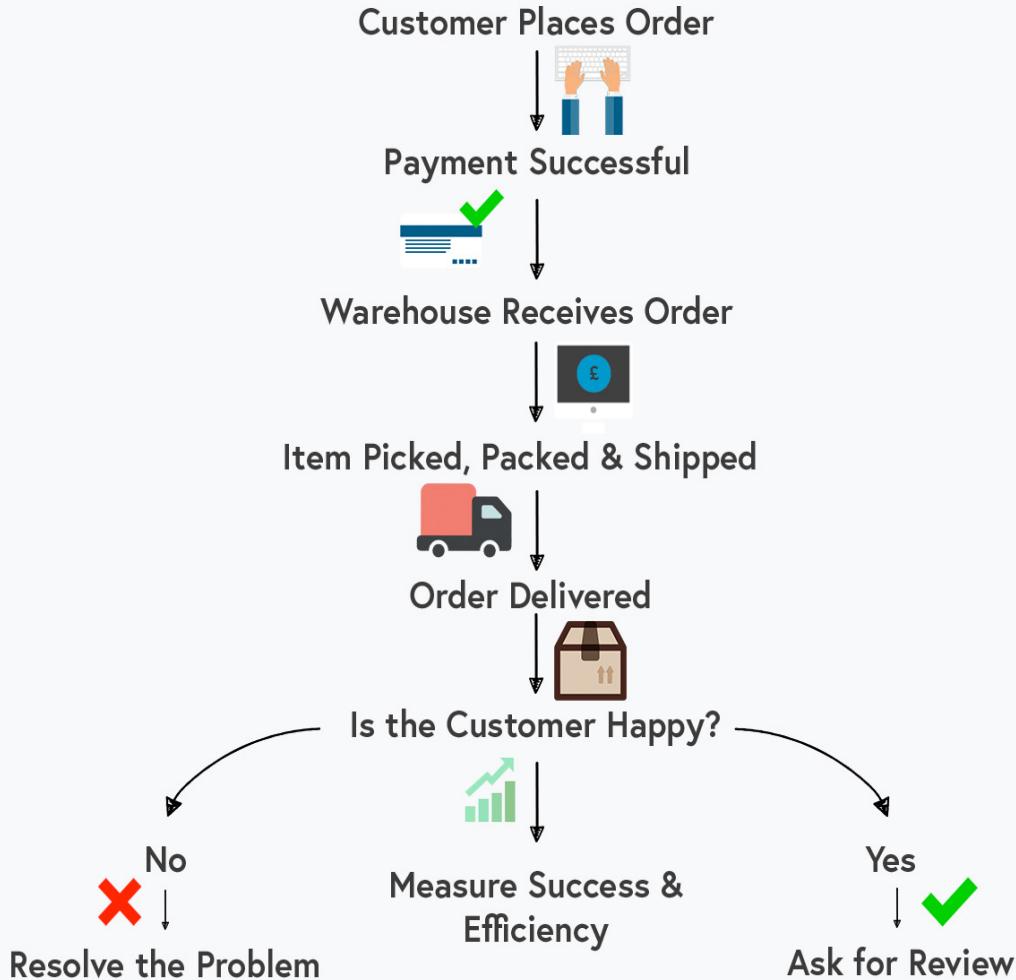
# WHAT IS E-COMMERCE SHIPPING ?

E-Commerce shipping, are shipping services employed for companies that sell products over the internet that make shipping their products more manageable and affordable. As your business grows and attracts more customers, you'll need to find faster, cheaper, more efficient shipping resources in order to keep up and meet customer expectations. That's where eCommerce shipping services come in.

# HOW DOES E-COMMERCE SHIPPING WORKS?



# Typical Order Process



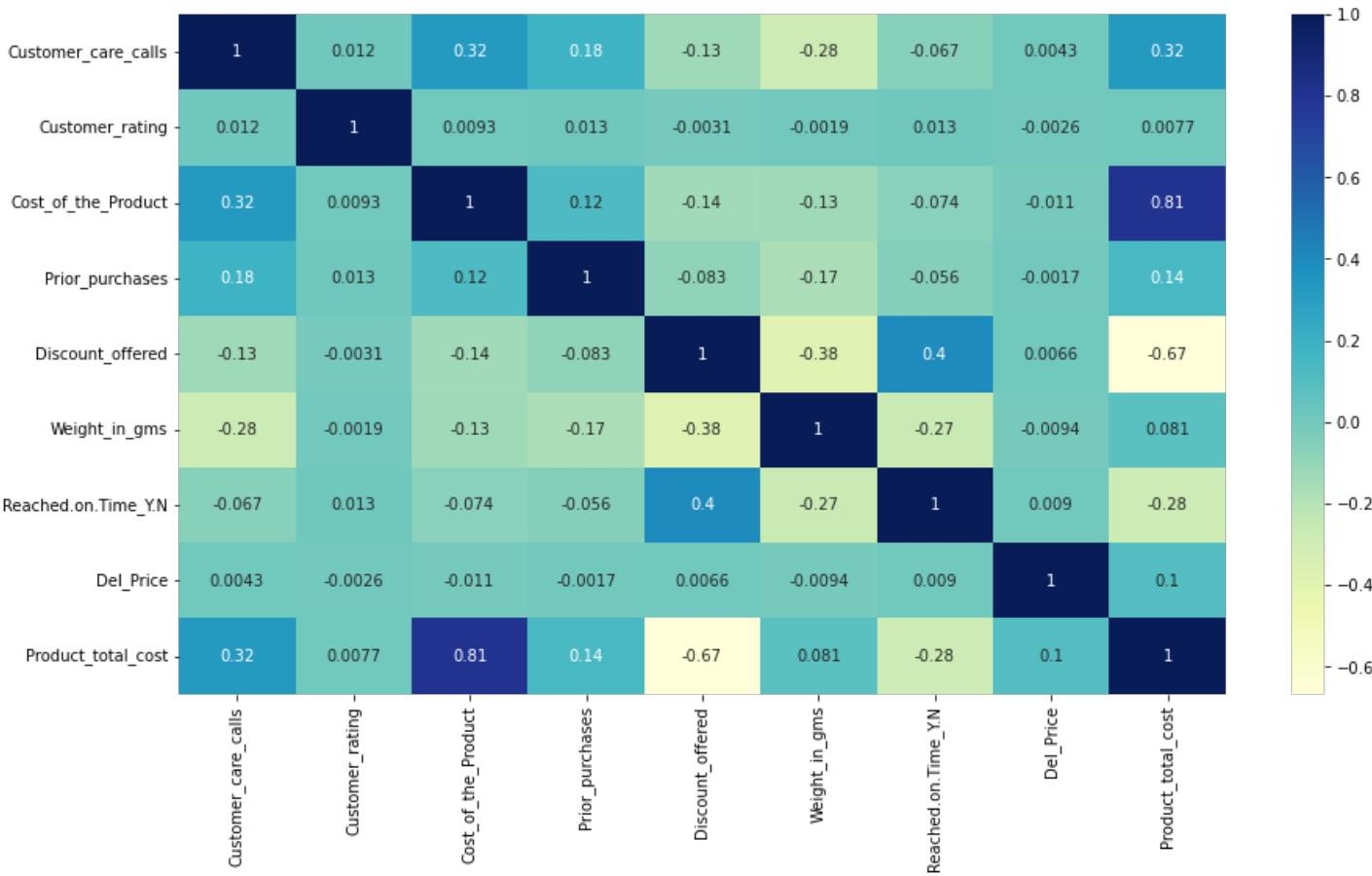
# OVERVIEW OF THE DATASET

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	ID	Warehouse_Mode_of_Sh	Customer_care	Customer_ra	Cost_of_the_Purchase	Prior_purchases	Product_importance	Gender	Discount_offered	Weight_in_g	Reached.on.Time_Y.N		
2	1 D	Flight	4	2	177	3	low	F	44	1233	1		
3	2 F	Flight	4	5	216	2	low	M	59	3088	1		
4	3 A	Flight	2	2	183	4	low	M	48	3374	1		
5	4 B	Flight	3	3	176	4	medium	M	10	1177	1		
6	5 C	Flight	2	2	184	3	medium	F	46	2484	1		
7	6 F	Flight	3	1	162	3	medium	F	12	1417	1		
8	7 D	Flight	3	4	250	3	low	F	3	2371	1		
9	8 F	Flight	4	1	233	2	low	F	48	2804	1		
10	9 A	Flight	3	4	150	3	low	F	11	1861	1		
11	10 B	Flight	3	2	164	3	medium	F	29	1187	1		
12	11 C	Flight	3	4	189	2	medium	M	12	2888	1		
13	12 F	Flight	4	5	232	3	medium	F	32	3253	1		
14	13 D	Flight	3	5	198	3	medium	F	1	3667	1		
15	14 F	Flight	4	4	275	3	high	M	29	2602	1		
16	15 A	Flight	4	3	152	3	low	M	43	1009	1		
17	16 B	Flight	4	3	227	3	low	F	45	2707	1		
18	17 C	Flight	3	4	143	2	medium	F	6	1194	1		
19	18 F	Ship	5	5	227	3	medium	M	36	3952	1		
20	19 D	Ship	5	5	239	3	high	M	18	2495	1		
21	20 F	Ship	4	5	145	3	medium	M	45	1059	1		
22	21 A	Ship	3	3	161	2	medium	F	38	1521	1		
23	22 B	Ship	3	1	232	4	medium	F	51	2899	1		
24	23 C	Ship	2	5	156	2	low	M	2	1750	1		
25	24 F	Ship	4	3	211	3	high	M	12	3922	1		
26	25 D	Ship	4	5	251	2	medium	F	28	3561	1		
27	26 F	Ship	3	1	225	4	low	M	29	3496	1		

Del_Price	Product_total_cost
25	124.12
21	109.56
22	117.16
29	187.40
28	127.36
30	172.56
24	266.50
27	148.16
21	154.50
26	142.44

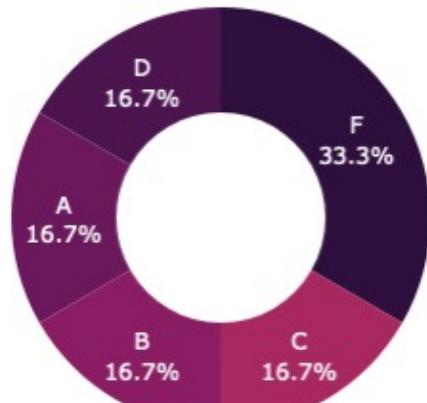
# DATA VISUALIZATION

# HEATMAP

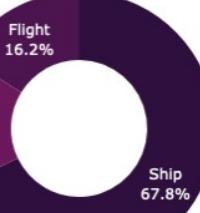


# DONUT CHART

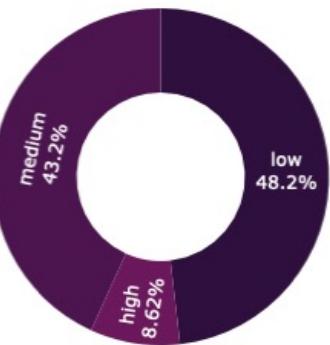
Warehouse\_block



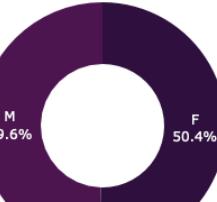
Mode\_of\_Shipment



Product\_importance

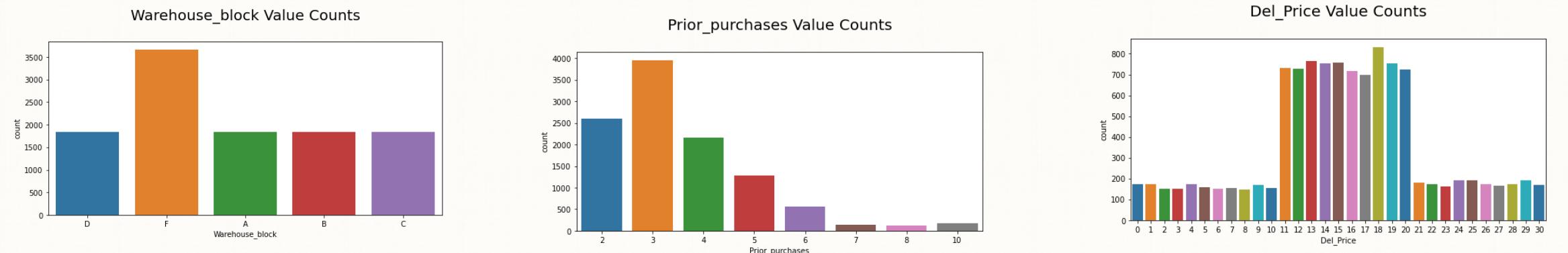
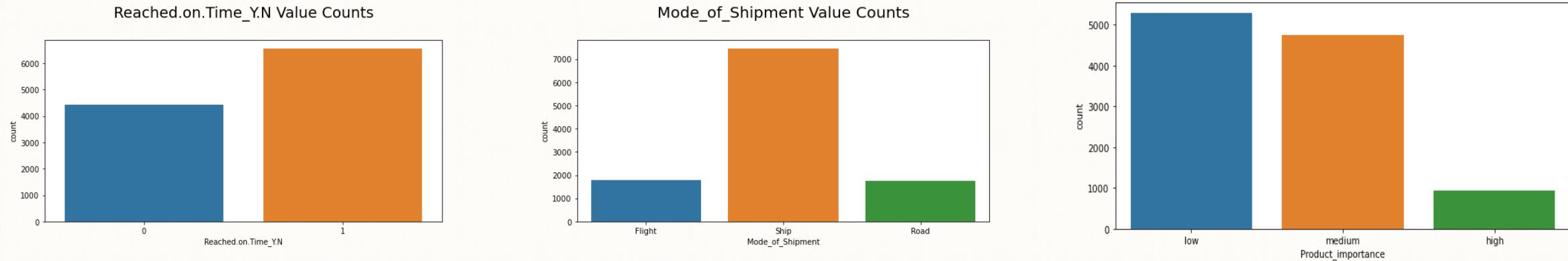


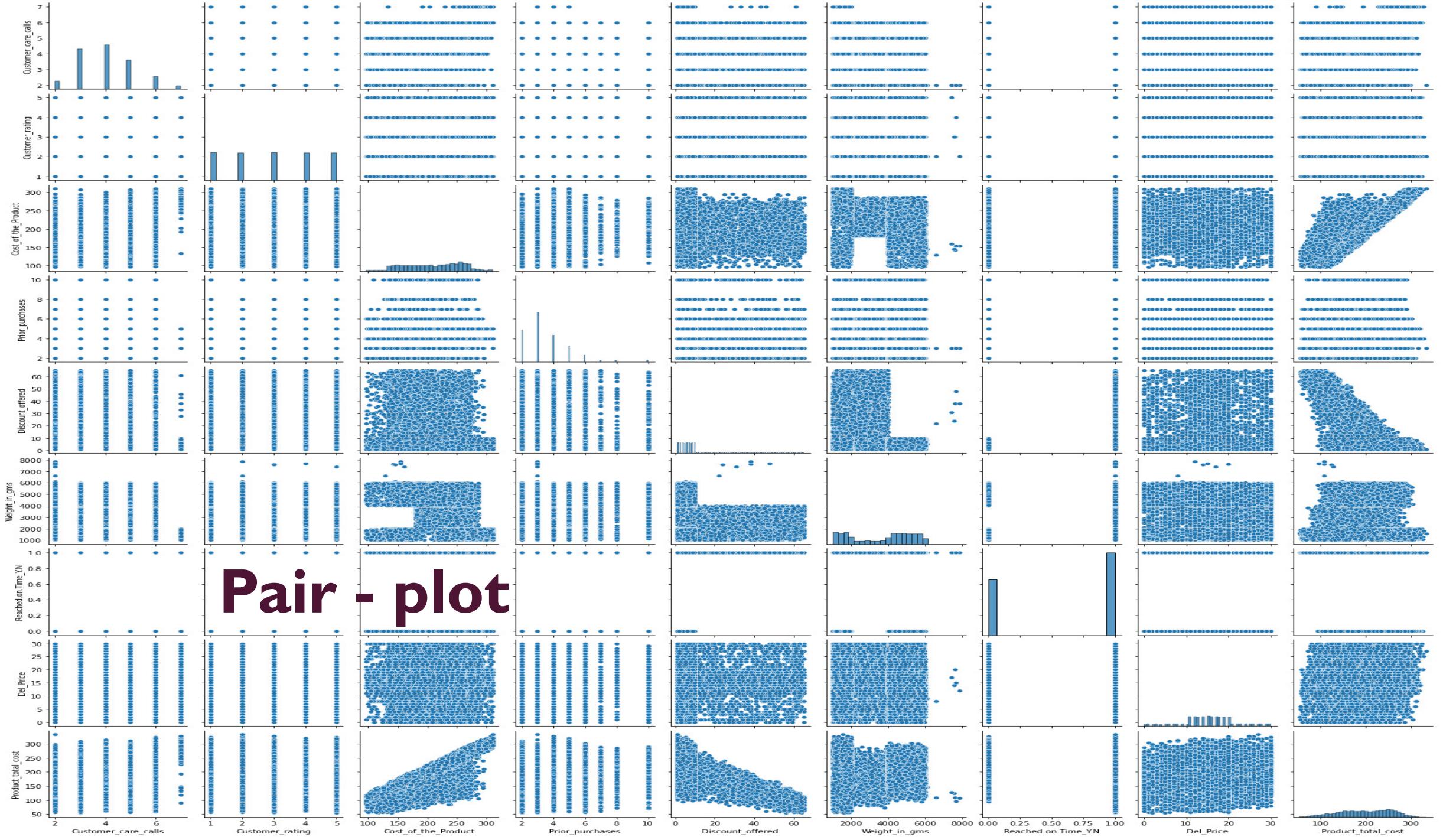
Gender



# Countplot

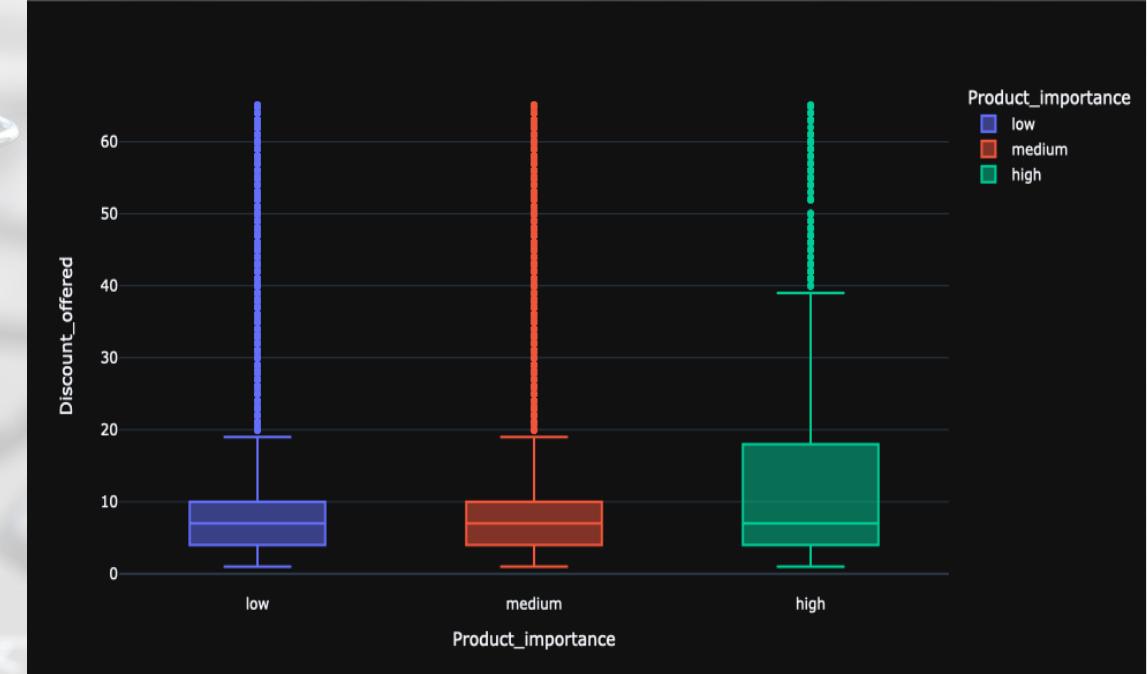
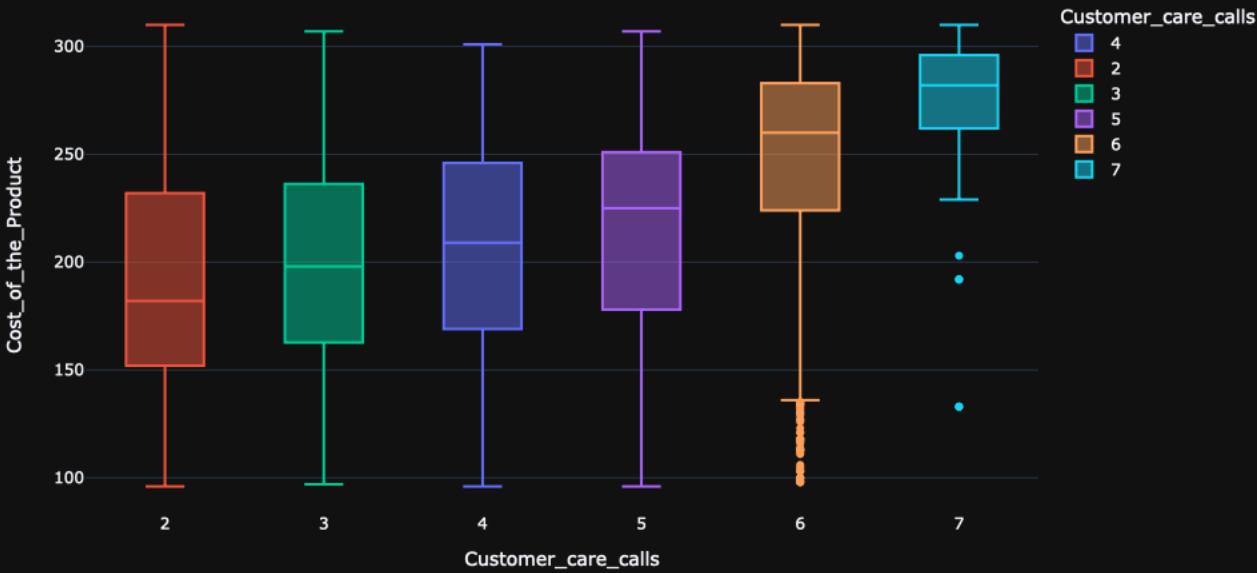
Product\_importance Value Counts



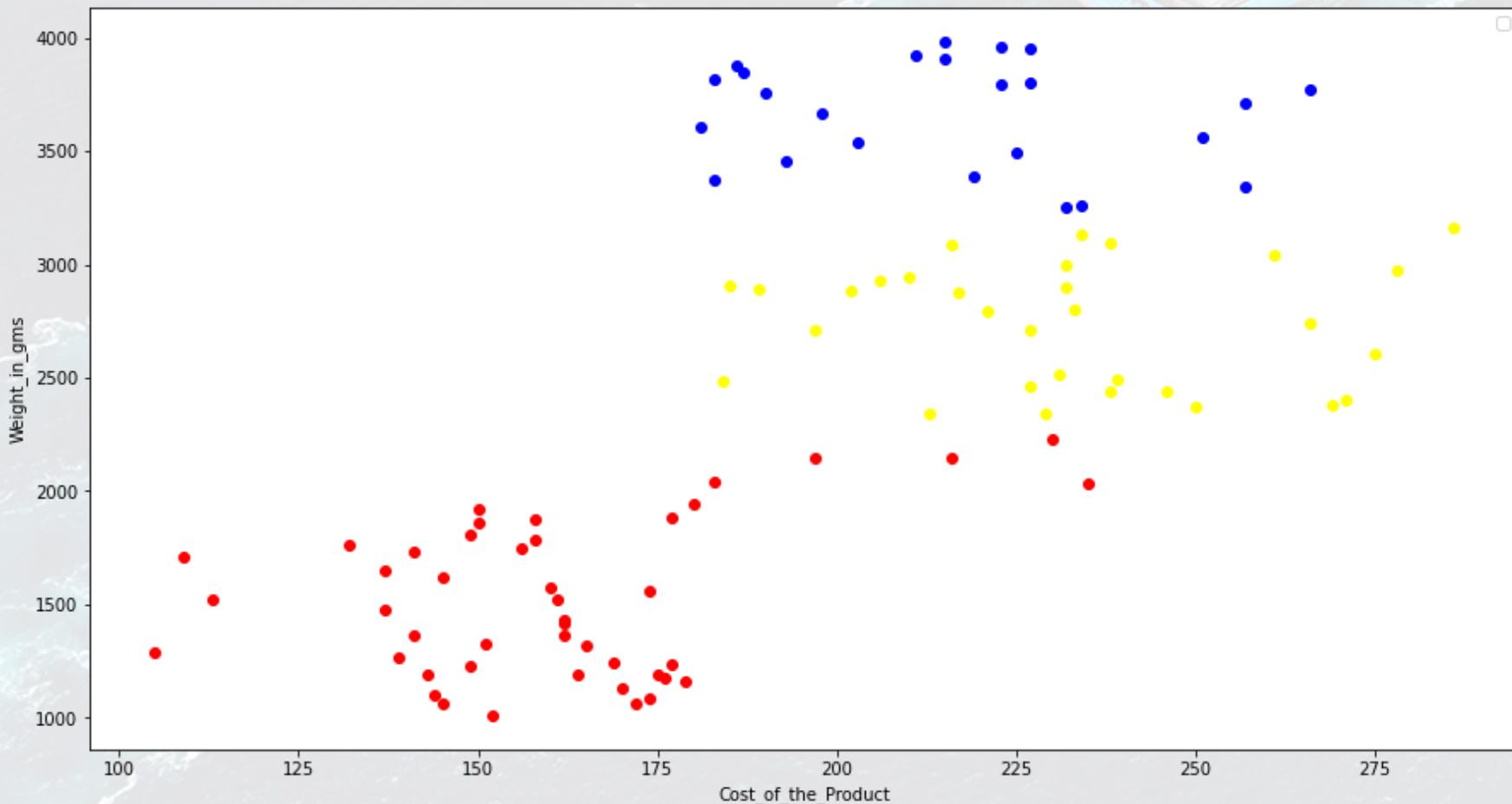


# Pair - plot

# Box-Plots

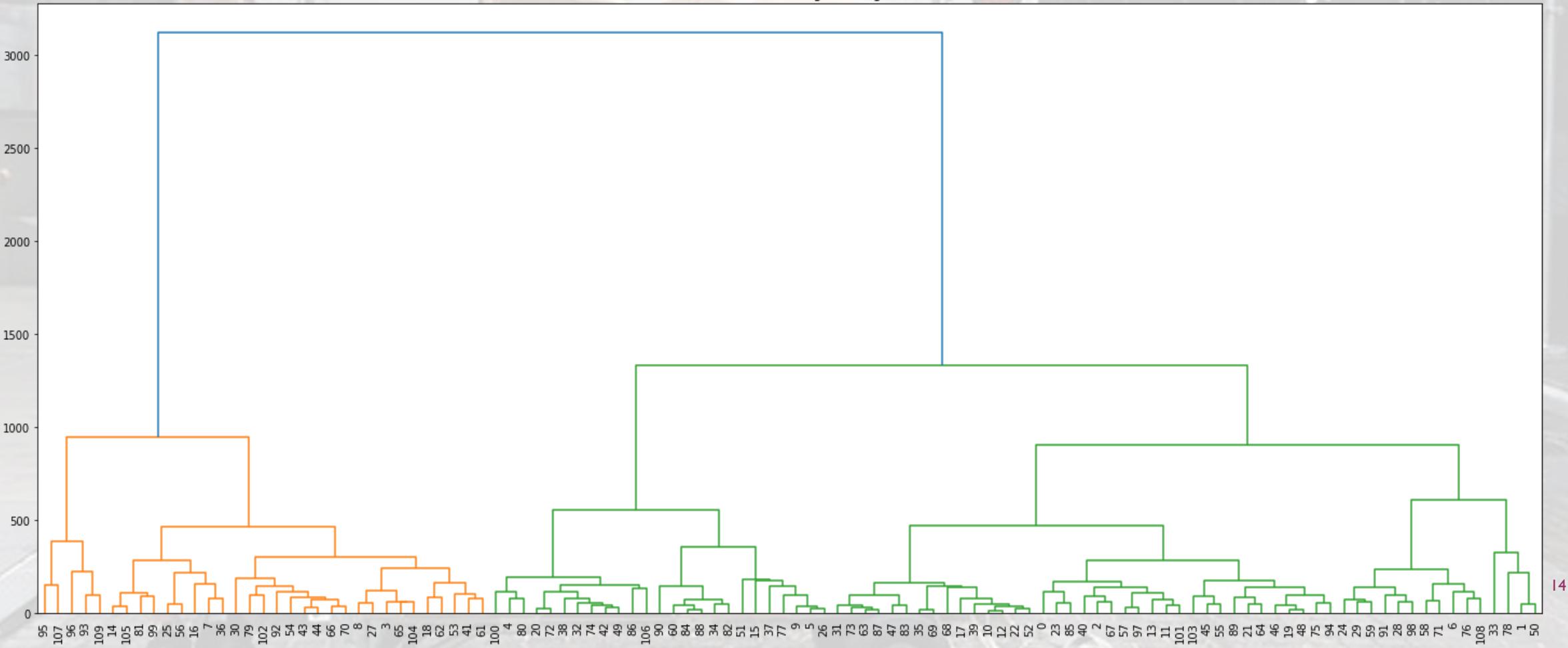


# HIERARCHICAL CLUSTERING



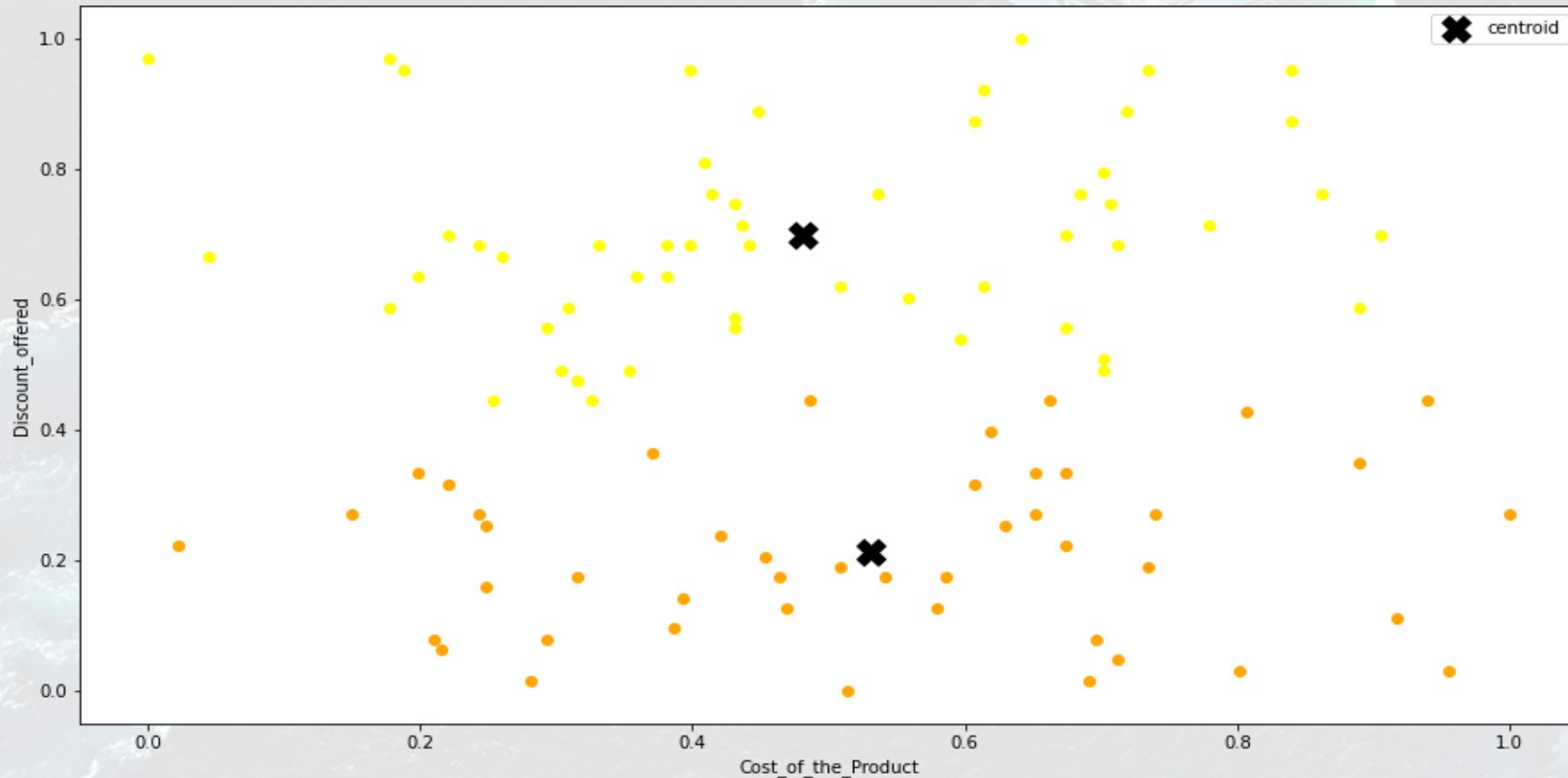
# DENDOGRAM

Hierarchical Clustering Dendrogram

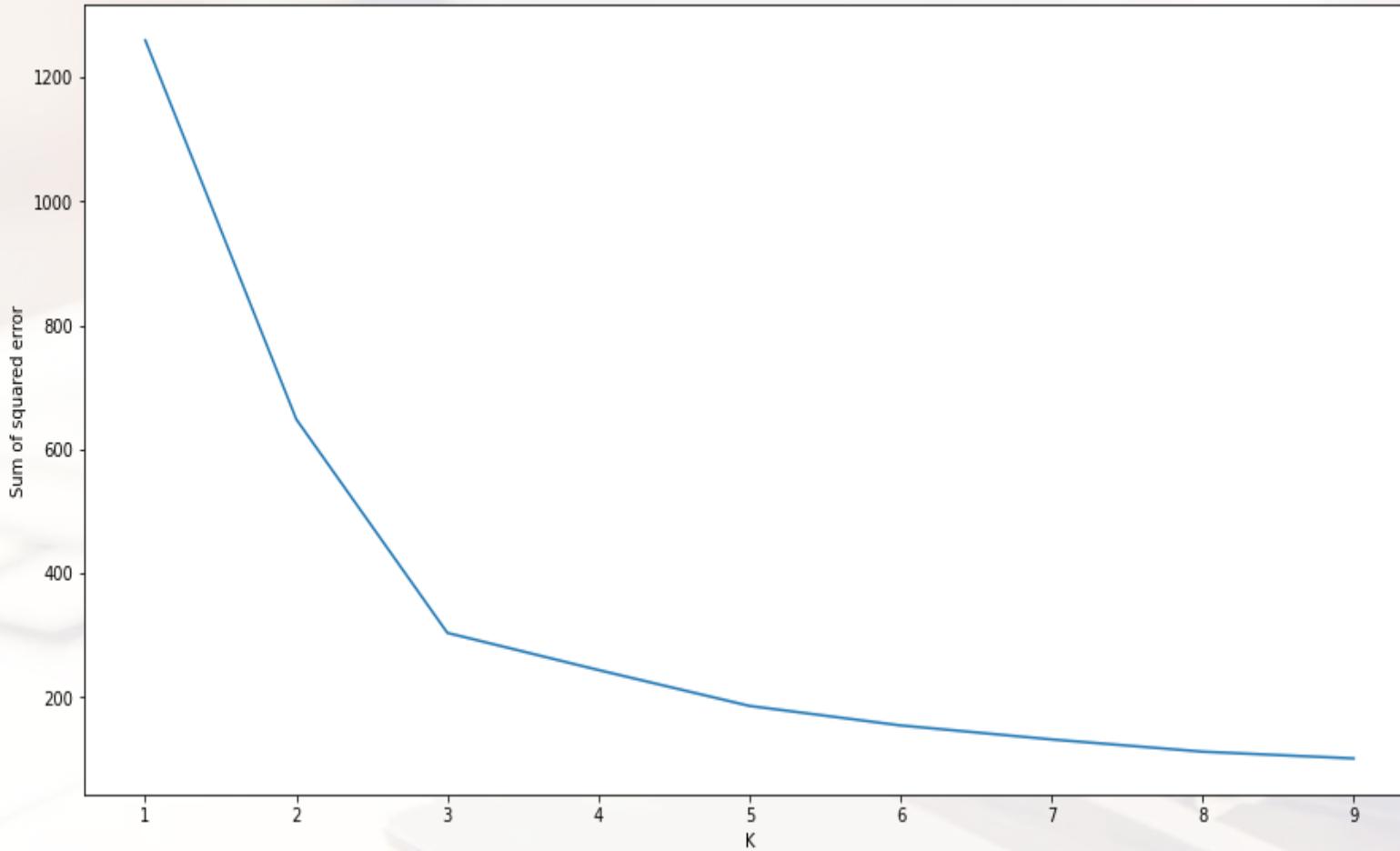


# K-MEANS

Inertia of Kmeans with 2 Clusters: 15.09908500746953



# ELBOW METHOD

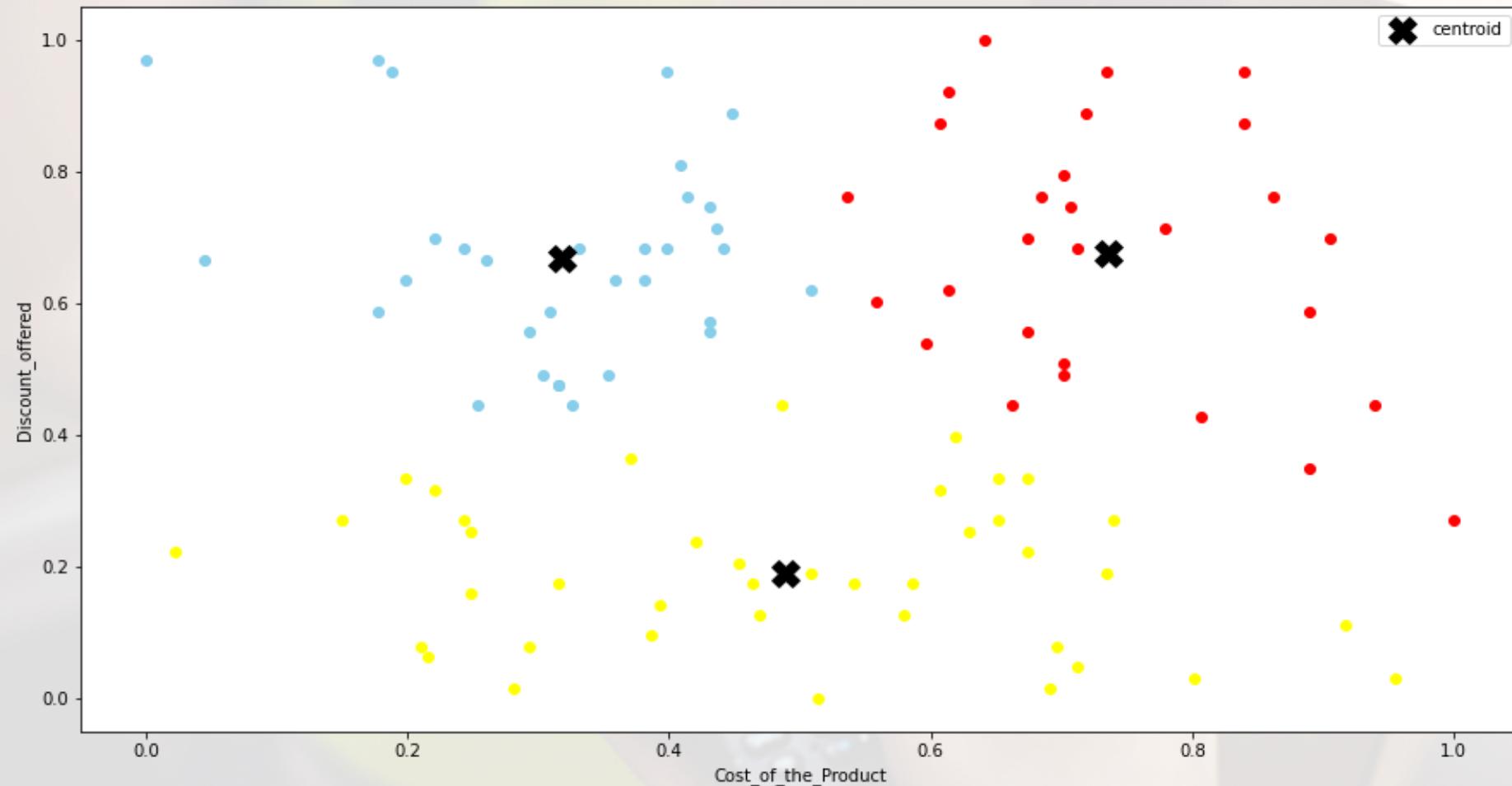


Inertia of Kmeans:

For k=2 :- 15.09908500746953  
For K=3 :- 6.707625979792594  
For k=4 :- 10.666940328941607

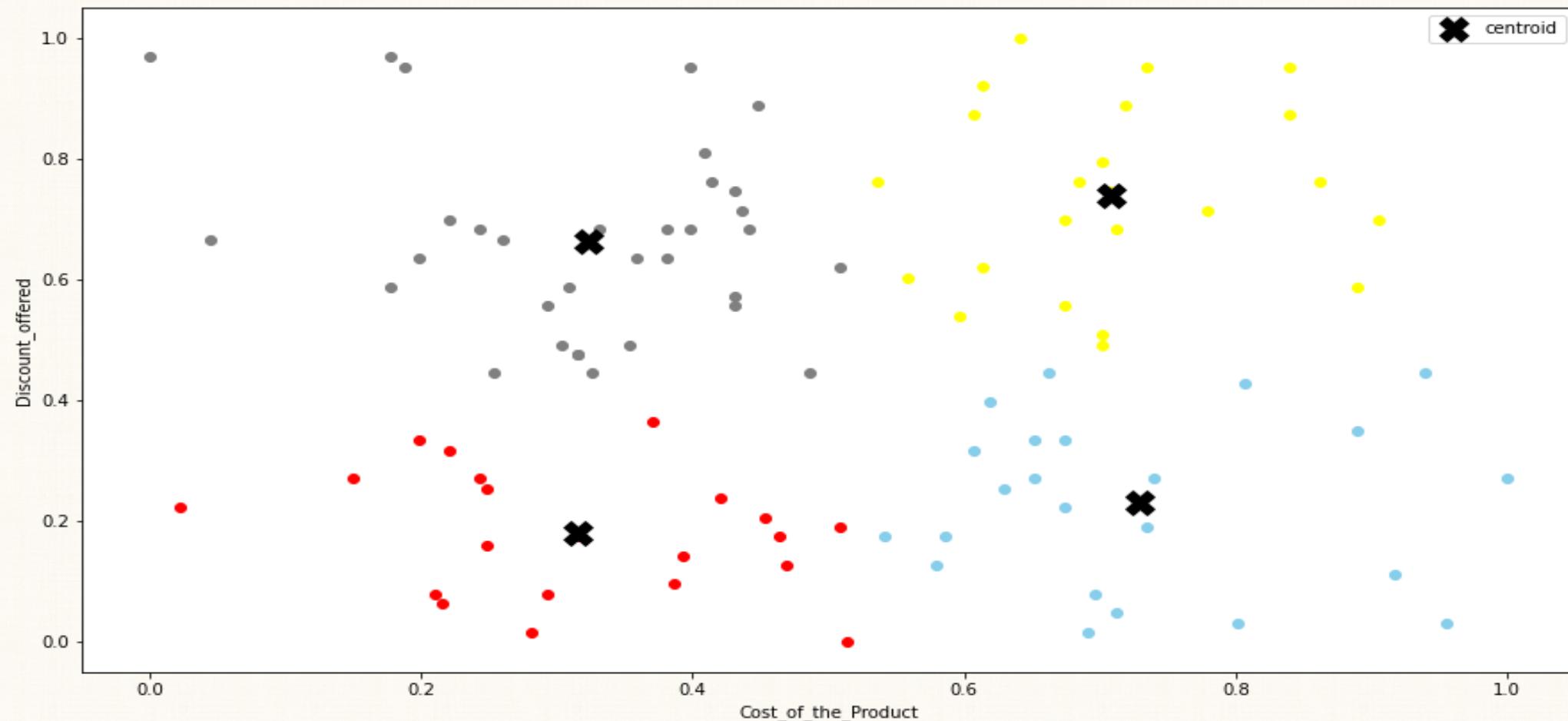
# KMEANS WITH K=3

Inertia of Kmeans with 3 Clusters: 6.707625979792594

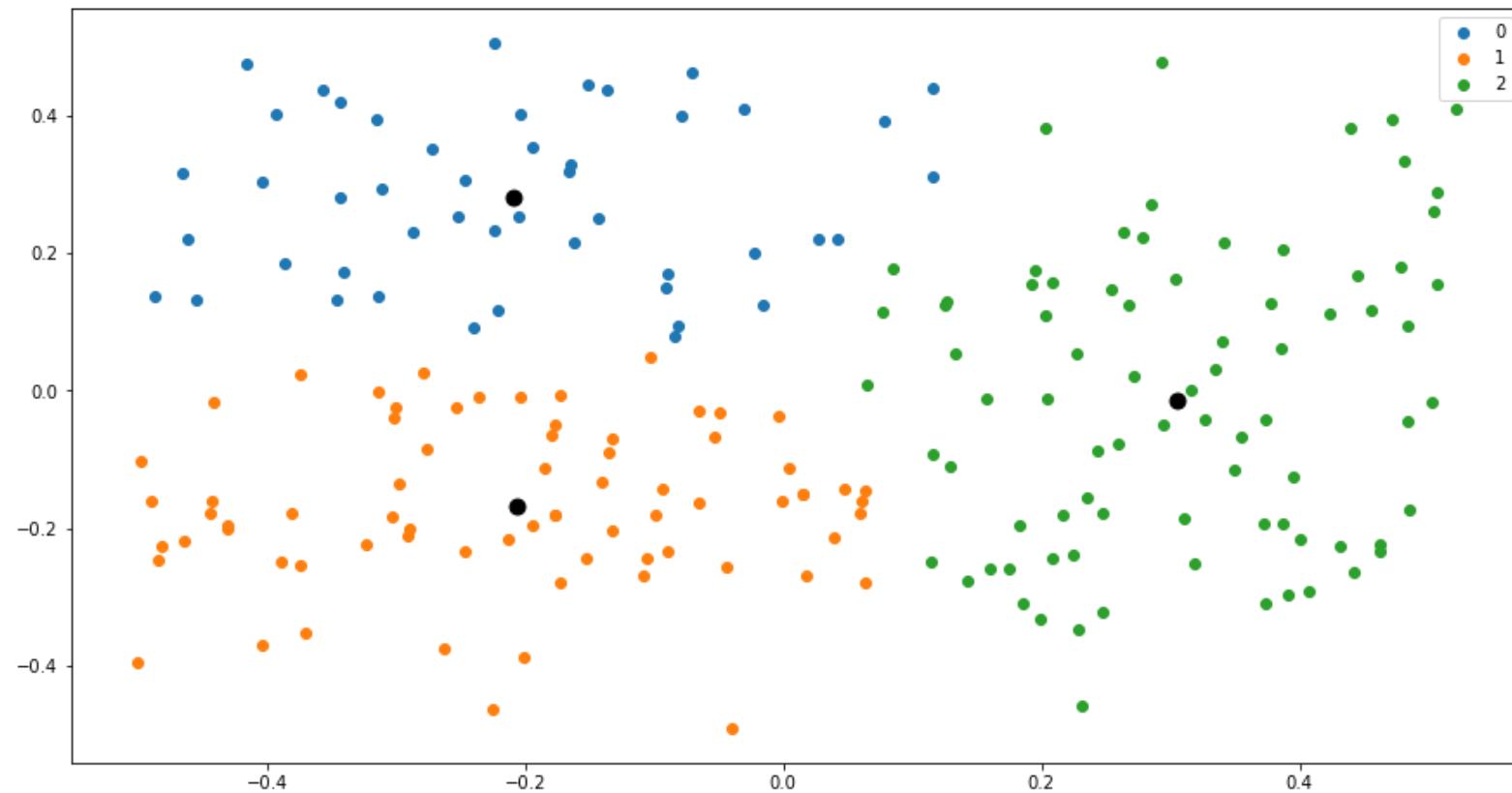


# KMEANS WITH K=4

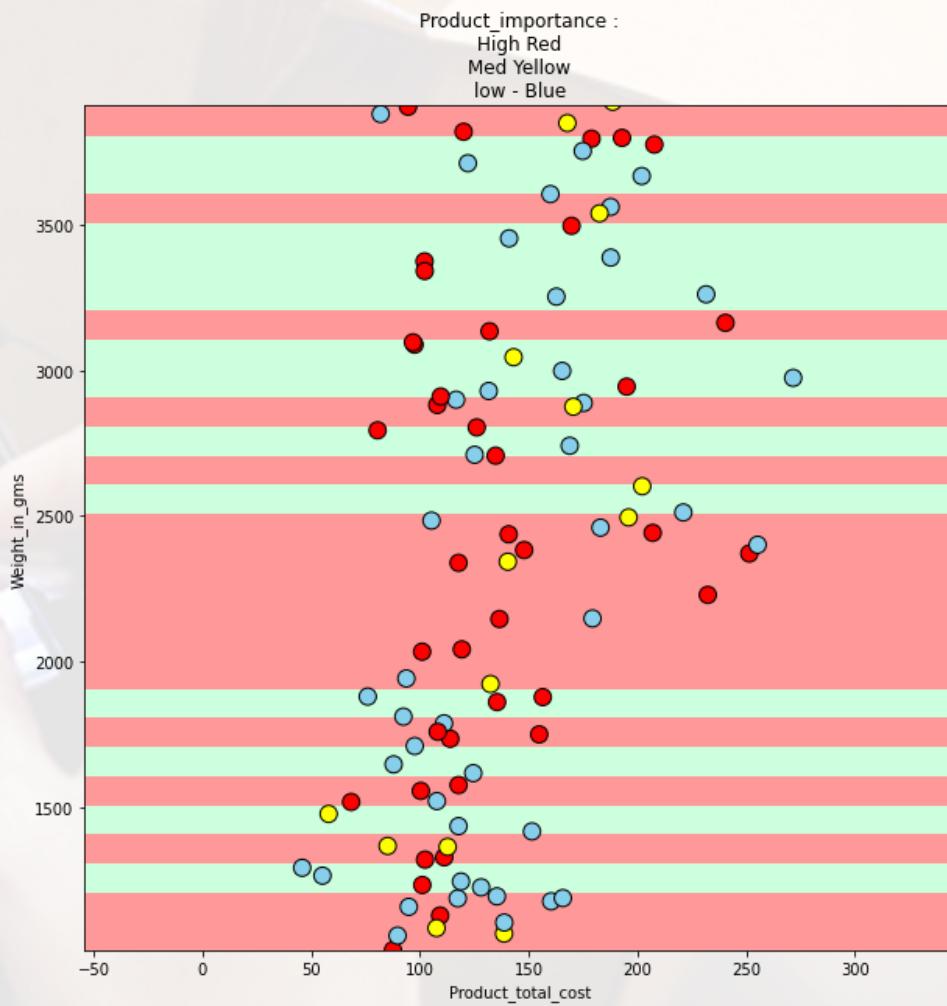
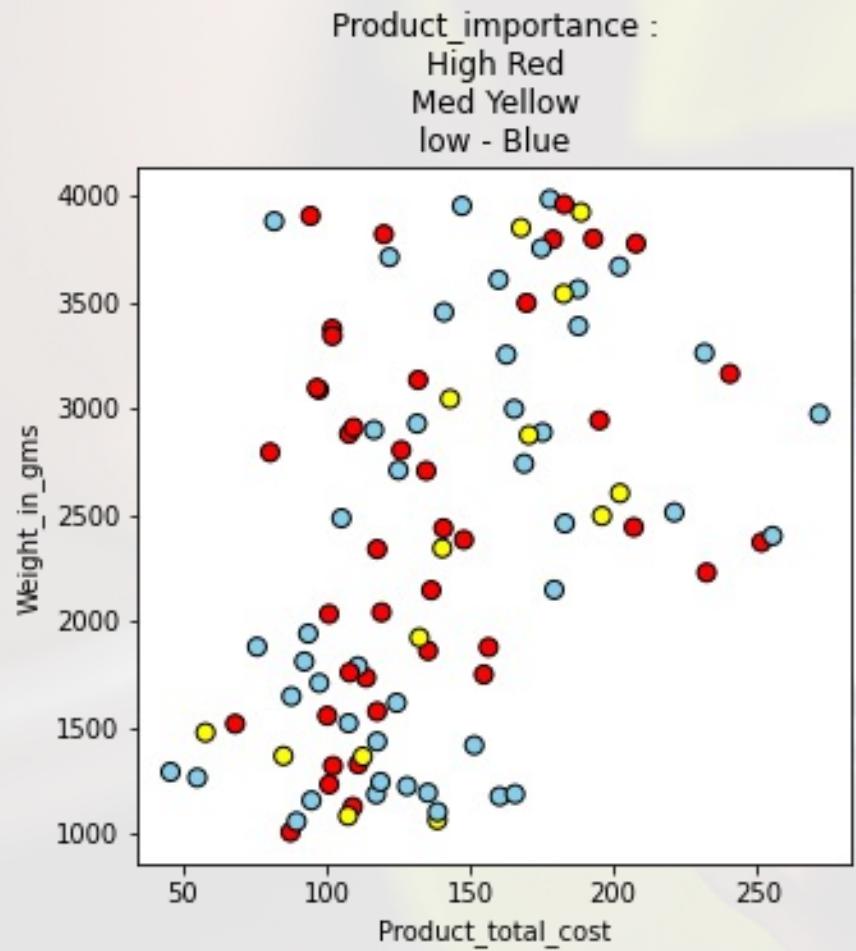
Inertia of Kmeans with 4 Clusters: 10.666940328941607



# Sklearn cluster



# KNN



# KNN PREDICTION

```
# make prediction
Cost = int(input('Product_total_cost: '))
Weight = int(input('Weight_in_gms: '))
data_class = knn.predict(np.array([Cost, Weight]).reshape(1, -1))[0]
class_name = ['', 'red', 'skyblue', 'yellow']

print('Prediction: Loan #', data_class, class_name[data_class])

knn.fit(ama[["Cost_of_the_Product", "Weight_in_gms"]], ama.Product_importance)
plotMesh()
```

```
Product_total_cost: 341
Weight_in_gms: 29
Prediction: Loan # 1 red
/usr/local/lib/python3.7/dist-packages/sklearn/base.py:451: UserWarning:
  X does not have valid feature names, but KNeighborsClassifier was fitted with feature names
/usr/local/lib/python3.7/dist-packages/sklearn/base.py:451: UserWarning:
  X does not have valid feature names, but KNeighborsClassifier was fitted with feature names
/usr/local/lib/python3.7/dist-packages/ipykernel_launcher.py:24: MatplotlibDeprecationWarning:
  Adding an axes using the same arguments as a previous axes currently reuses the earlier instance. In a future version, a new
```



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# THANK YOU

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