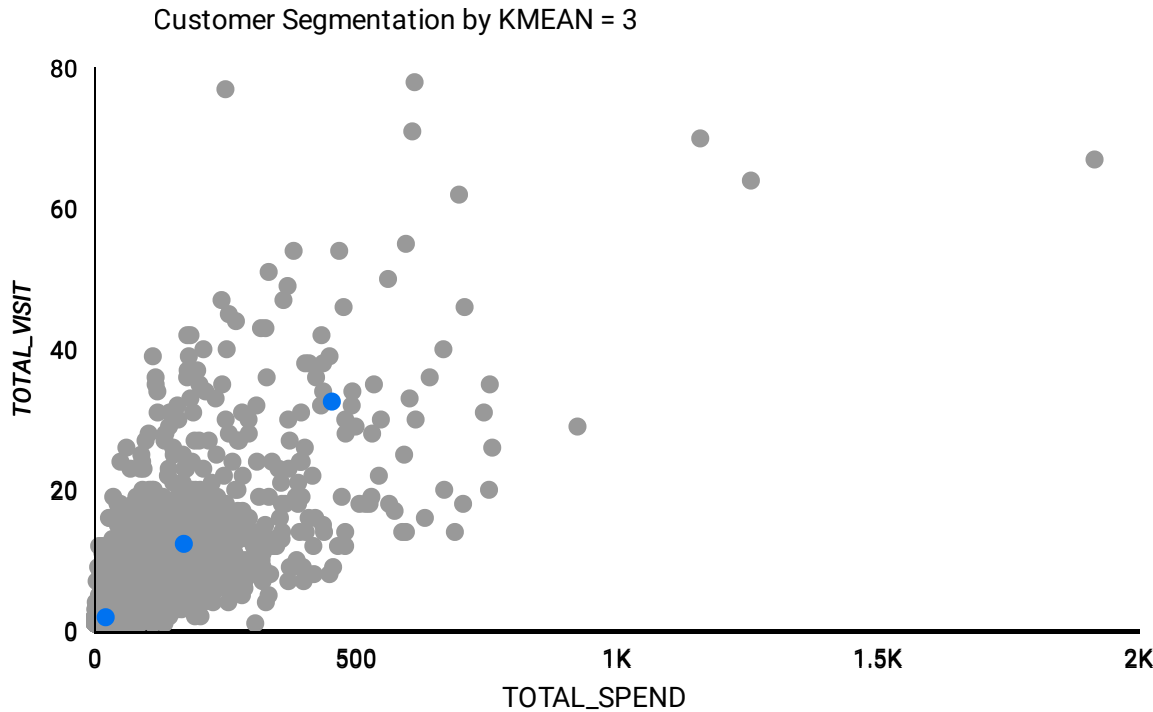
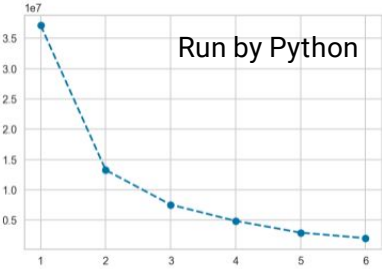


# HW6: Customer Segmentation

**NOTE:**

- **K means clustering**, K = 3
- Period of data only 3 months (Q2/2008) so it does not use spending/visiting
- It should analyze every quarter



	CUST_CODE ▲	CENTROID_ID	TOTAL_VISIT	TOTAL_SPEND
1.	CUST0000000369	3	24	90.34
2.	CUST0000000689	1	4	84.23
3.	CUST0000001163	1	1	0.52
4.	CUST0000001194	3	12	304.16
5.	CUST0000002605	1	2	0.6
6.	CUST0000002637	1	2	19.15
7.	CUST0000002813	1	1	8.71
8.	CUST0000003252	1	1	2.58
9.	CUST0000003287	1	1	1.82
...	CUST0000004088	3	10	126.48

**NOTE:**

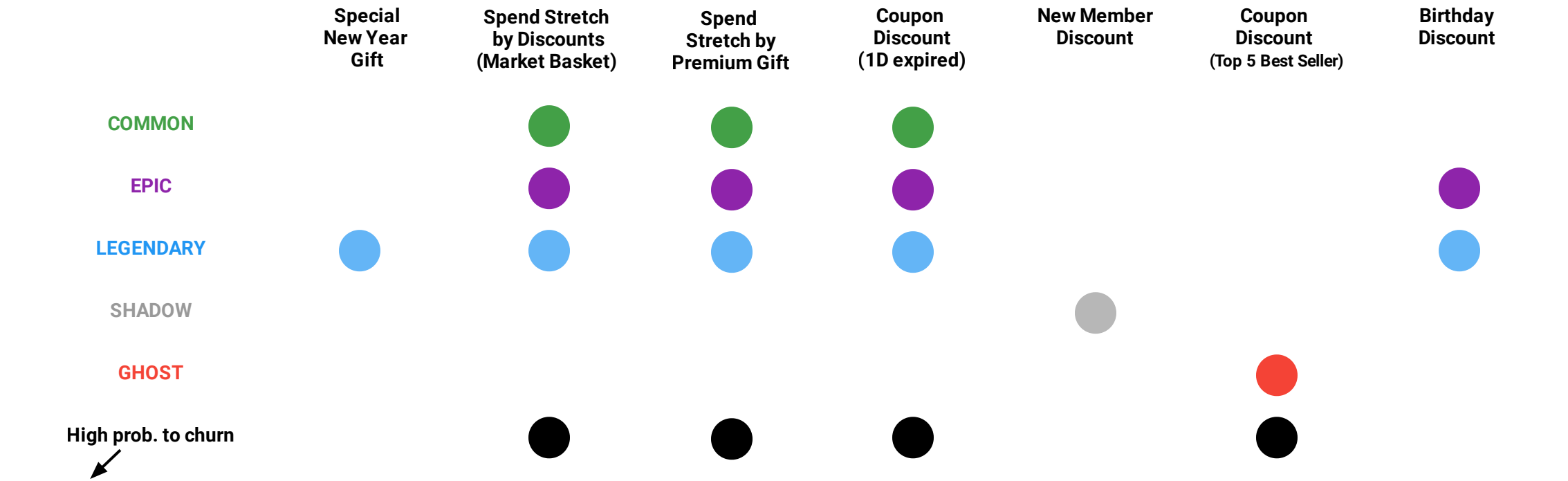
- Actually, it should range by Total\_SPEND (Range by cust\_code to show color condition)

1 - 100 / 2614 < >

**INTERPRETING K-MEANS RESULTS for Q2/2008**

	COMMON	EPIC	LEGENDARY	SHADOW	GHOST
TOTAL_SPEND	42,799	49,046	77,343	33,282	-
CUSTOMER SIZE	2,060	108	446	-	3,464 (only member)
# of Transaction	4,457	3,590	5,651	2,792	-
Recommendations	<ul style="list-style-type: none"><li>- Up spend strategies by</li><li>- Cross sell by apply product association analysis (Page 3) with spend stretch discounts eg. "Buy for amount X to get discount Y"</li><li>- Up sell by premium gift "Buy for amount X to get premium gift"</li><li>- More engagement by</li><li>- Daily promotional specials to encourage more visits (expire in short time frame)</li></ul>		<ul style="list-style-type: none"><li>- Target: Maintain their loyalty</li><li>- Communication on new product, discount coupon, activities can be rolled out to keep the retailer brand top of mind.</li><li>- Create special image for Legendary member</li></ul>	<ul style="list-style-type: none"><li>- Promote membership via "Coupon for new member only"</li></ul>	<ul style="list-style-type: none"><li>- Coupon discount on Top 5 best seller by segment (Page 3)</li><li>- Identify cause for churn</li></ul>

CREATING VALUE FROM CLUSTERING RESULTS



CHURN PREDICTION

	CUST_CODE	Total_Spend ▾	Total_Visit	Last_Visiting_date	GAP visiting_1	GAP visiting_2	GAP visiting_3	GAP visiting_4	GAP visiting_5
1.	CUST0000123240	1914.84	67	30 มิ.ย. 2008	1	2	0	0	3
2.	CUST0000372422	1256.5	64	30 มิ.ย. 2008	1	1	2	2	1
3.	CUST0000543233	1159.49	70	30 มิ.ย. 2008	1	3	1	1	1
4.	CUST0000173993	924.3	29	25 มิ.ย. 2008	2	0	2	2	17
5.	CUST0000539672	760.97	26	24 มิ.ย. 2008	6	3	12	12	0
6.	CUST0000420363	756.32	35	30 มิ.ย. 2008	3	0	3	3	3
7.	CUST0000986278	754.84	20	11 มิ.ย. 2008	4	10	8	8	5
8.	CUST0000158306	744.94	31	30 มิ.ย. 2008	3	2	3	3	3
9.	CUST0000417479	708.04	46	30 มิ.ย. 2008	3	7	1	1	3
1...	CUST00000923296	705.15	18	30 มิ.ย. 2008	9	1	4	4	7

**NOTE:**

- Churn prediction by monitor GAP of visiting (If the customer has high GAP, it looks like they already have another choice).
- Ranking by Top spending (analysis only 3 months so it does not use spending/visiting)
- It should analyze every quarter

MARKET BASKET ANALYSIS

	antecedents	consequents	antecedent support	consequent support	support	confidence	lift	leverage	conviction
1	(PRD0900531)	(PRD0903052)	0.022490	0.145505	0.012821	0.570055	3.917766	0.009548	1.987451
3	(PRD0901265)	(PRD0903052)	0.061013	0.145505	0.025425	0.416709	2.863878	0.016547	1.464954
5	(PRD0903074)	(PRD0903052)	0.039234	0.145505	0.012728	0.324409	2.229540	0.007019	1.264812
8	(PRD0904250)	(PRD0903052)	0.031356	0.145505	0.010009	0.319212	2.193819	0.005447	1.255155
2	(PRD0900830)	(PRD0903052)	0.044362	0.145505	0.013346	0.300836	2.067527	0.006891	1.222166
4	(PRD0901265)	(PRD0903678)	0.061013	0.141736	0.015879	0.260253	1.836180	0.007231	1.160213
9	(PRD0904358)	(PRD0903052)	0.104078	0.145505	0.026568	0.255269	1.754362	0.011424	1.147387
6	(PRD0903678)	(PRD0903052)	0.141736	0.145505	0.033550	0.236704	1.626778	0.012926	1.119481
7	(PRD0903052)	(PRD0903678)	0.145505	0.141736	0.033550	0.230573	1.626778	0.012926	1.115459
0	(PRD0900121)	(PRD0903052)	0.081804	0.145505	0.018505	0.226208	1.554643	0.006602	1.104296

NOTE:  
- Market basket analysis: Ranking by confidence  
- Raw data is not provided "Product name"  
- Query data by SQL and simulate by Python

TOP 5 BEST SELLER

NOTE:  
- Top 5 Best Seller: Separate by CUST\_LIFESTAGE  
- Raw data have only 1 store type "LS"

Young Adult (YA) LIFESTAGE

	PROD_CODE	USD ▾
1.	PRD0904358	389.6
2.	PRD0903052	197.7
3.	PRD0900121	192.1
4.	PRD0900722	145.2
5.	PRD0903815	130.1

Young Family (YF) LIFESTAGE

	PROD_CODE	USD ▾
1.	PRD0903269	796.2
2.	PRD0904358	649.9
3.	PRD0901265	299.1
4.	PRD0903052	260.5
5.	PRD0900121	245

Persioners (PE) LIFESTAGE

	PROD_CODE	USD ▾
1.	PRD0904358	175.6
2.	PRD0900121	158.8
3.	PRD0903052	142.2
4.	PRD0901265	120.1
5.	PRD0904250	109.6

Old Adult (OA) LIFESTAGE

	PROD_CODE	USD ▾
1.	PRD0904358	389.6
2.	PRD0903052	279.1
3.	PRD0900121	275.4
4.	PRD0904250	261.5
5.	PRD0902503	253.3

OldFamily (OF) LIFESTAGE

	PROD_CODE	USD ▾
1.	PRD0904358	229.5
2.	PRD0901923	102
3.	PRD0904933	88.3
4.	PRD0901310	87.6
5.	PRD0902129	72.5

Others (OT) LIFESTAGE

	PROD_CODE	USD ▾
1.	PRD0904358	827
2.	PRD0900121	515.5
3.	PRD0903052	418.7
4.	PRD0901265	339.1
5.	PRD0900324	275.2