

Case

Grehashti Grocery store

It's been more than a year since the opening of the Grehashti Grocery store. Mr. Sashwat, owner of the store, observed that the products sold in market are of low quality. This leads to various problems for the customers. With the dream of providing quality products to the customers at market price he started his store named 'Grehashti'. Sashwat worked day and night to source good quality products for consumers. In spite of sourcing the high-quality products for sale, the store is yet to turn profitable. Very less number of customers are shopping from the store.

In order to find the concerns of customers he decided to take feedback from them. After getting responses, he analyzed to check the satisfaction level of customers. He found that the customers are very much satisfied with the quality of products. So, he could not take anything substantial out of this effort. He was tensed about not getting any way out of this problem.

He decided to talk about the problem with one of his friends working with a retail store chain in Germany and ask for his advice. His friend told him that his company uses the data of customer transactions to analyze customer behavior and choices. Sashwat insisted on more explanation about what type of analysis they do. His friend explained that their data analysis department provide the information about the products having chances of getting bought together and what are the most and least sold products of the store. Based on available information the company devices the marketing strategy and offers on the purchase of products. Products are also arranged in such a way that customers can pick more and more products. But Sashwat don't know anything about such techniques. Therefore, his friend advised him to hire a data analyst for getting some answers from available data.

After talking to his friend, Sashwat tried to collect the data of all the transactions carried out in last year. He has created a file of all the transactions data but don't know how to go about analyzing it. He has data of 2928 customer transactions conducted in last year. The store is selling only 5 categories of products namely vegetables, baby products, fruit, milk, DVDs, and meat. The store is open on all days of the week. For each transaction, the day of purchase and what are the products bought in that transaction has been reported. For example, the first transaction was carried out on 5th day of the week, and it included vegetables, milk, and meat.

Based upon his discussion with the friend, he wants the solution to following concerns. (use dataset

- Which product category out of 5 is the head category?
- On which day of the week do most of the transactions happen? Is there any particular day of the week on which fraction of transactions is higher?
- Identify the pairs of the products that customers tend to purchase together or what are the possible pairs of products that can be placed together in the store?
- What should be the appropriate place of products in store in order to increase the revenue?

How as a data analyst can you help Mr. Sashwat to find ways of increasing sales?

He provides you with the dataset of transactions and the present layout of the store. There are 6 aisles in the store arranged as shown in figure. Help him to find optimized layout of store.

B1	B2	B3
A1	A2	A3

	A	B	C	D	E	F	G	H	I
		day week	vegetables	baby	fruit	milk	dvds	meat	
8	transaction #								
9	1	5	1	0	0	1	0	1	
10	2	4	1	1	1	1	0	0	
11	3	5	1	0	0	0	0	0	
12	4	5	1	0	1	0	0	0	
13	5	7	1	1	0	1	0	1	
14	6	2	1	0	1	0	0	1	
15	7	3	0	0	0	1	1	0	
16	8	3	1	0	0	1	0	1	
17	9	6	1	0	1	0	0	0	
18	10	6	1	0	0	0	0	0	
19	11	1	1	0	0	0	0	0	
20	12	4	0	0	0	0	1	0	
21	13	1	1	0	0	0	0	0	
22	14	7	0	0	0	0	0	0	
23	15	7	0	0	0	1	0	0	
24	16	6	0	0	0	0	1	0	
25	17	5	1	1	0	0	1	1	
26	18	3	1	0	0	1	0	1	
27	19	3	0	0	1	0	0	0	
28	20	3	1	0	1	0	0	0	
29	21	1	1	1	0	1	0	0	
30	22	1	0	0	1	0	1	0	
31	23	3	0	0	0	1	0	1	
32	24	7	1	0	0	0	0	1	

optimize Initial