Data Analytics Case Study Portfolio

Noah Vaknin

ABOUT ME

- Overview
- Values
- Traits

OVERVIEW

I AM RECENT GRADUATE FROM BINGHAMTON UNIVERSITY WHO MAJORED IN FINANCIAL ECONOMICS AND AM EAGER TO WORK IN A ROLE WHERE I CAN APPLY MY STRONG ANALYTICAL SKILLS, ABILITY TO FOCUS ON THE DETAILS AND COMMITMENT TO A POSITIVE OUTCOME. MY ACADEMIC TRAINING ALONG WITH MY PART-TIME EXPERIENCE AT NORTHWELL HEALTH HAS GIVEN ME A WELL-ROUNDED UNDERSTANDING OF PROBLEM SOLVING, TIME MANAGEMENT AND THE ABILITY TO WORK WELL IN A TEAM ENVIRONMENT

DURING MY INTERNSHIP I HAD THE OPPORTUNITY TO WORK WITH FINANCE PROFESSIONALS WHERE I WAS RESPONSIBLE FOR REVIEWING FINANCIAL STATEMENTS TO IDENTIFY VARIANCES TO BUDGET, OPTIMIZING KPI REPORTS AND CONSOLIDATING DATA TO PREPARE AND PLAN FOR AN IT SYSTEMS TRANSITION. IN ADDITION, THE COURSES THAT I HAVE TAKEN IN ACCOUNTING, FINANCE, STATISTICS, AND ECONOMICS HAVE PROVIDED ME WITH A SOLID FOUNDATION FOR THIS ROLE. LASTLY, I AM CURRENTLY ENROLLED IN CAREERFOUNDRY'S DATA ANALYTICS PROGRAM WHERE I'VE GAINED PRACTICAL SKILLS IN MICROSOFT EXCEL, TABLEAU, SQL, PYTHON, AND GITHUB.

VALUES

- **HARDWORKING** - I APPROACH EVERY TASK WITH DEDICATION AND PERSISTENCE, ENSURING THAT I PUT IN THE EFFORT NEEDED TO ACHIEVE THE BEST RESULTS.

- **DETAIL-ORIENTED** - I PAY CLOSE ATTENTION TO THE FINER DETAILS, MAKING SURE THAT NOTHING IS OVERLOOKED AND THAT MY WORK IS THOROUGH AND ACCURATE.

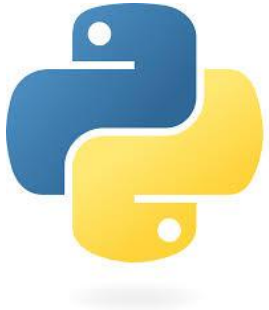
- **ACCEPTING** - I VALUE DIFFERENT PERSPECTIVES AND CREATE AN INCLUSIVE ENVIRONMENT WHERE EVERYONE FEELS RESPECTED AND HEARD.

INTERESTS

LIFTING WEIGHTS - COMMITTED TO STRENGTH TRAINING AND PERSONAL FITNESS.

BASKETBALL & FOOTBALL - ENJOY FOLLOWING AND PLAYING BOTH SPORTS.

COOKING - LOVE EXPERIMENTING WITH NEW RECIPES AND FLAVORS.



INTRODUCTION

The CareerFoundry Data Analytics program is a comprehensive, hands-on course designed to equip students with the skills and tools needed to excel in data-driven roles. Over the course of the program, I've gained expertise in:

- **Microsoft Excel** for data cleaning, analysis, and visualization
- **SQL** for database management and querying
- **Tableau** for creating interactive dashboards and visualizations
- **Python** for advanced data analysis and automation
- **GitHub** for version control and collaborative work

INSTACART GROCERY BASKET ANALYSIS

https://github.com/NoahVaknin641/Achievement-4-Python-Instacart

INSTACART

Overview: Instacart, an online grocery platform accessible via a mobile app, provides customers with the convenience of shopping from home. This project examines its sales data to reveal customer purchasing patterns, aiding in the development of a targeted marketing strategy.

Methods:

- Data Wrangling
- Data Merging
- Deriving Variables
- Grouping Data
- Aggregating Data
- Reporting in Excel
- Population Flows

Tools Used

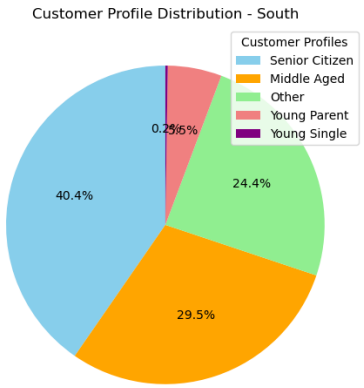
Objectives:

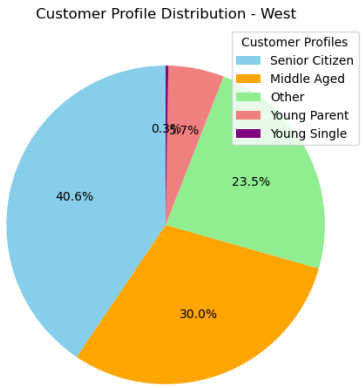
- Identify peak and low-order times to optimize advertising schedules and product marketing strategies
- Analyze customer purchasing behaviors, including loyalty, demographics, and regional variations, to support targeted marketing efforts
- Determine popular product categories and preferred price ranges to inform sales and promotional strategies

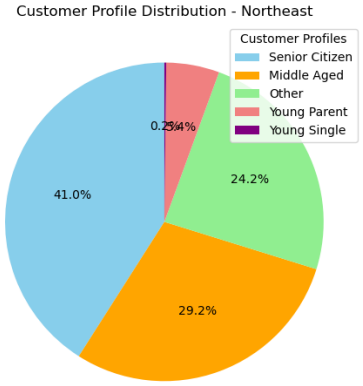
Data:

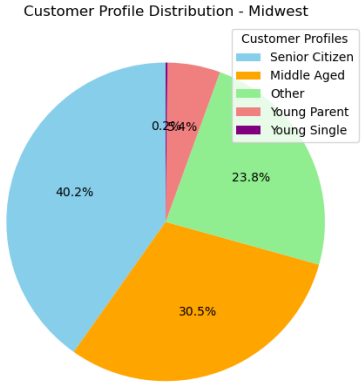
Open-source data sets from Instacart and a customer dataset from CareerFoundry. "The Instacart Online Grocery Shopping Dataset 2017" , Accessed from www.instacart.com/datasets/groceryshopping-2017 via Kaggle on December 2024.

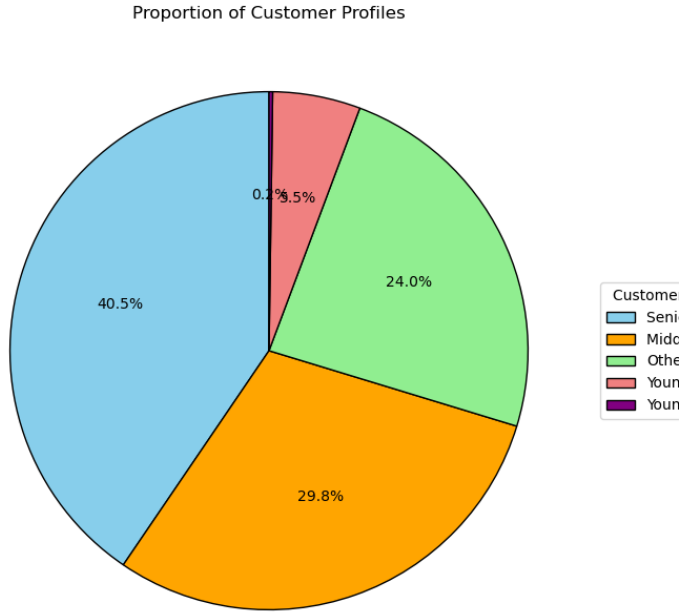
VISUALS 1&2


Customer Profile Distribution - South
Customer Profiles
Senior Citizen
Middle Aged
Other
Young Parent
Young Single
40.4%
29.5%
24.4%

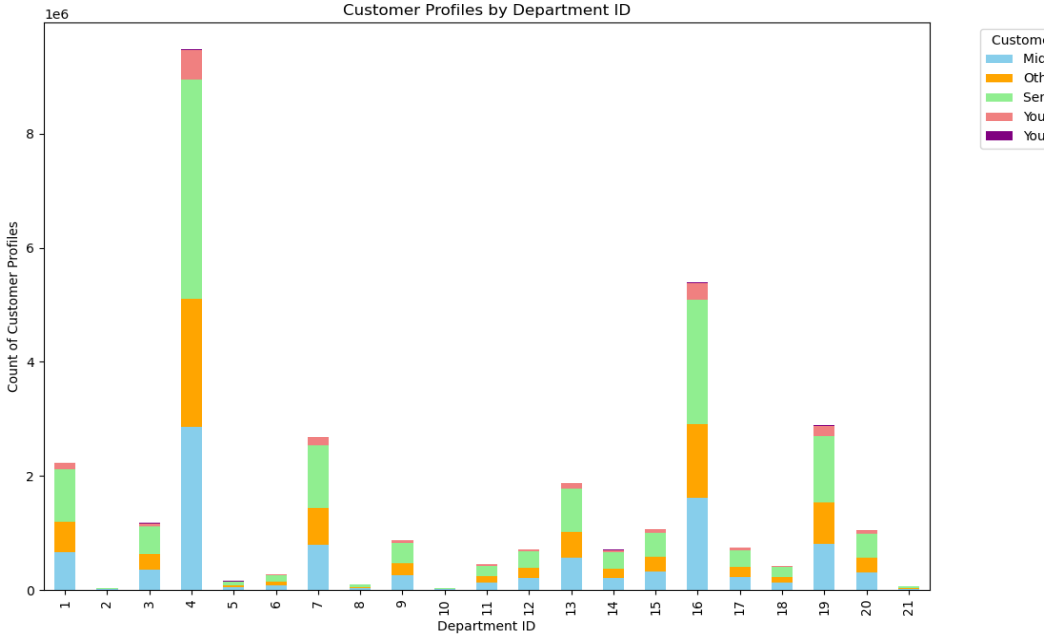

Customer Profile Distribution - West
Customer Profiles
Senior Citizen
Middle Aged
Other
Young Parent
Young Single
40.6%
30.0%
23.5%

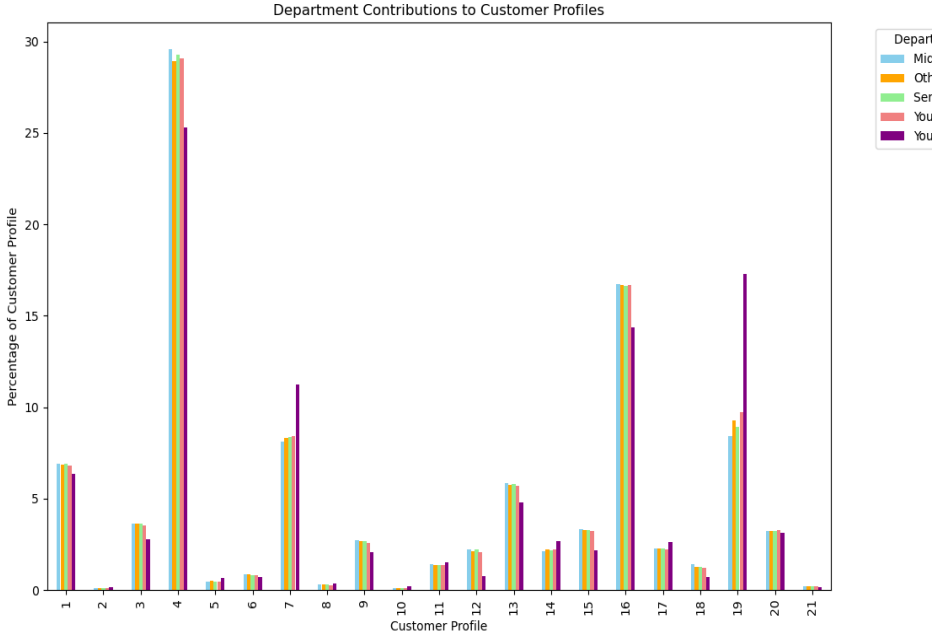

Customer Profile Distribution - Northeast
Customer Profiles
Senior Citizen
Middle Aged
Other
Young Parent
Young Single
41.0%
29.2%
24.2%


Customer Profile Distribution - Midwest
Customer Profiles
Senior Citizen
Middle Aged
Other
Young Parent
Young Single
40.2%
30.5%
23.8%


Proportion of Customer Profiles
40.5%
29.8%
24.0%

VISUALS 3&4

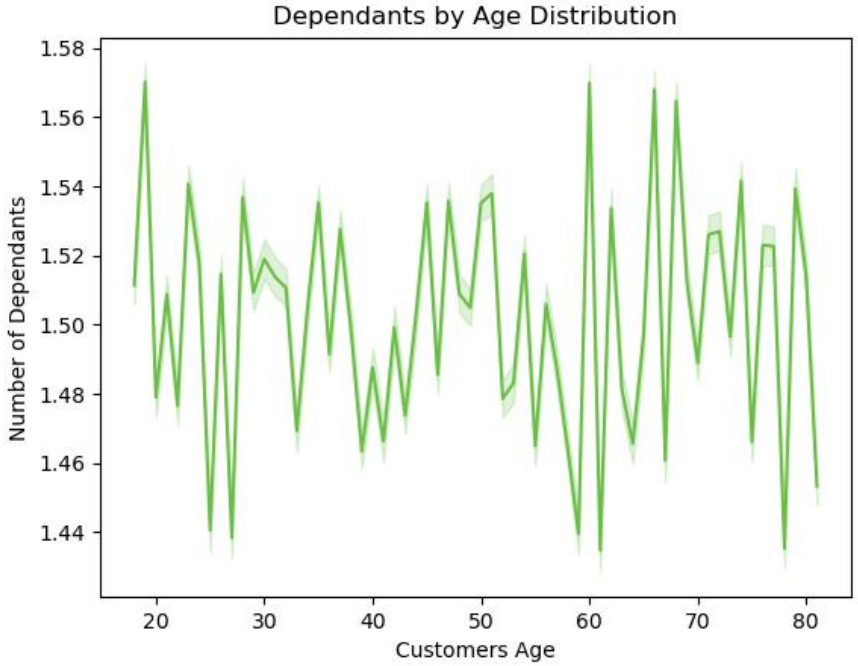


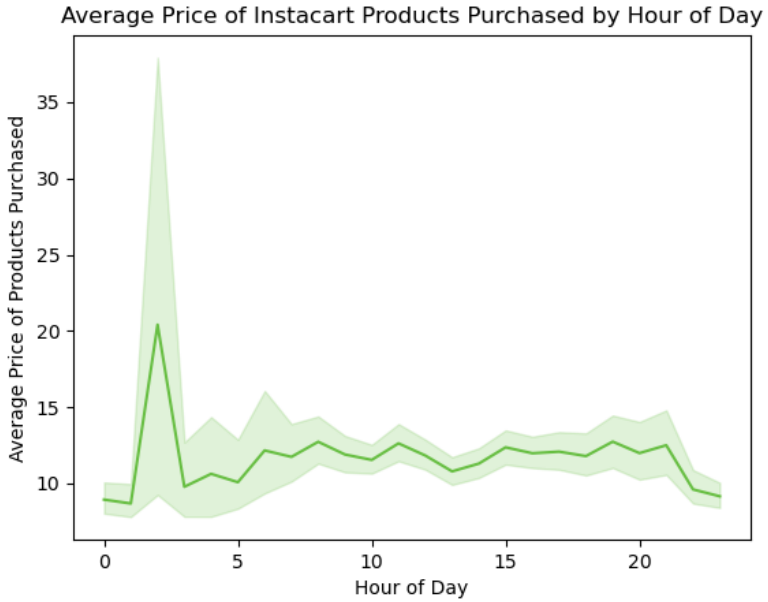


	Middle Aged	Other	Senior Citizen	Young Parent	Young Single
1	29.87	23.9	40.63	5.39	0.21
2	29.66	25.06	39.95	5.05	0.28
3	29.97	24.06	40.42	5.37	0.17
4	30.11	23.73	40.51	5.45	0.2
5	29.23	25.64	39.71	5.1	0.31
6	30.48	24.08	40.01	5.23	0.2
7	29.21	24.12	40.81	5.56	0.31
8	29.36	24.56	41.07	4.76	0.25
9	30.28	23.92	40.41	5.22	0.17
10	28.93	24.63	40.38	5.67	0.4
11	30.1	23.83	40.43	5.39	0.25
12	30.54	23.37	40.82	5.19	0.08
13	30.0	23.87	40.56	5.38	0.19
14	29.31	24.53	40.22	5.66	0.28
15	30.26	23.84	40.38	5.37	0.15
16	29.96	24.0	40.35	5.49	0.19
17	29.65	24.13	40.66	5.31	0.26
18	31.81	23.31	39.68	5.08	0.12
19	28.13	24.97	40.48	5.99	0.44
20	29.73	23.99	40.55	5.51	0.22
21	29.82	24.53	39.75	5.72	0.17

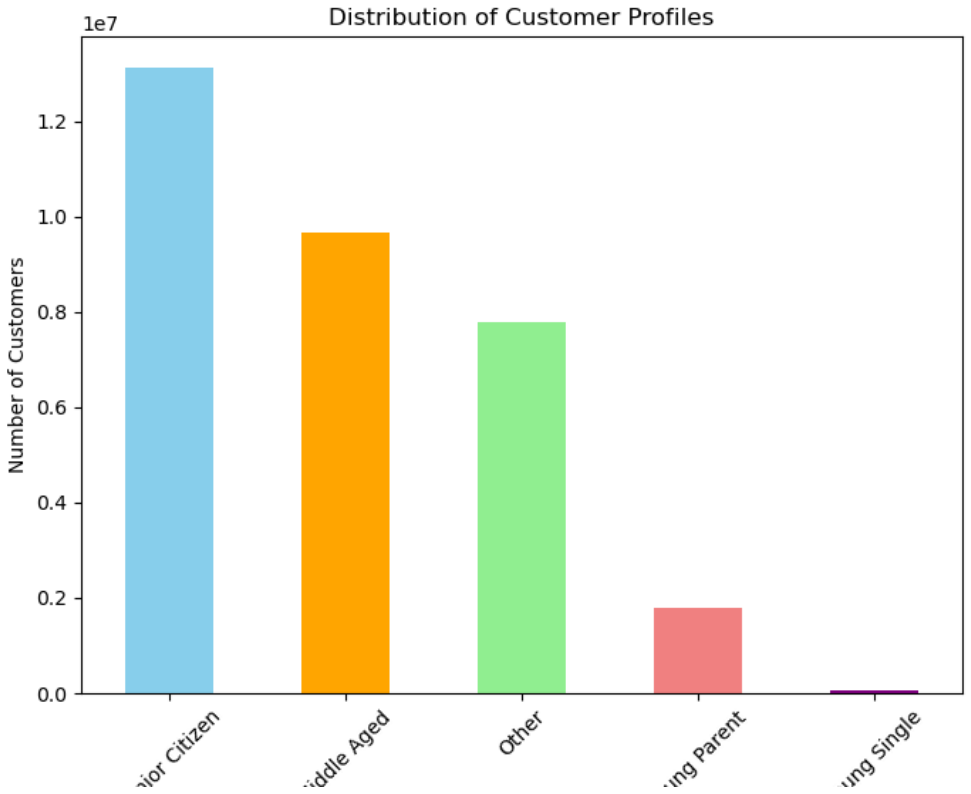
	Middle Aged	Other	Senior Citizen	Young Parent	Young Single
1	6.91	6.87	6.92	6.78	6.36
2	0.11	0.12	0.11	0.1	0.14
3	3.64	3.63	3.61	3.55	2.76
4	29.56	28.92	29.27	29.08	25.3
5	0.47	0.51	0.47	0.44	0.66
6	0.85	0.83	0.82	0.79	0.73
7	8.13	8.34	8.36	8.41	11.22
8	0.3	0.31	0.31	0.26	0.34
9	2.72	2.67	2.67	2.55	2.04
10	0.1	0.11	0.11	0.11	0.19
11	1.4	1.37	1.38	1.36	1.5
12	2.24	2.13	2.21	2.07	0.78
13	5.83	5.75	5.8	5.69	4.79
14	2.13	2.22	2.16	2.24	2.69
15	3.35	3.27	3.29	3.23	2.19
16	16.75	16.66	16.6	16.68	14.38
17	2.27	2.29	2.29	2.21	2.63
18	1.4	1.27	1.28	1.21	0.7
19	8.41	9.27	8.91	9.74	17.3
20	3.24	3.24	3.25	3.26	3.14
21	0.21	0.22	0.21	0.22	0.16

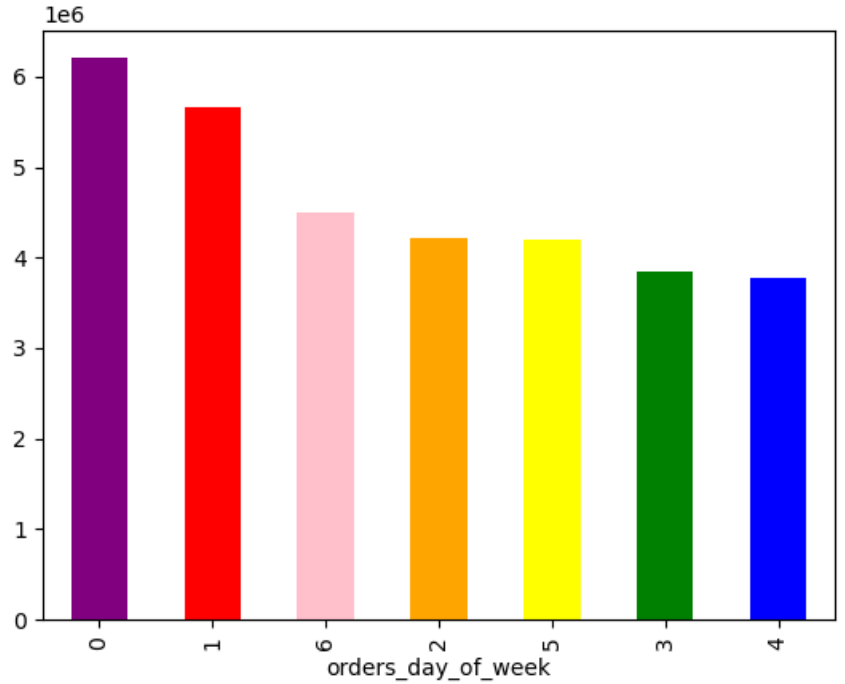
VISUALS 5&6


Dependants by Age Distribution
Number of Dependants
1.58
1.56
1.54
1.52
1.50
1.48
1.46
1.44
20
30
40
50
60
70
80
Customers Age


Average Price of Instacart Products Purchased by Hour of Day
Average Price of Products Purchased
35
30
25
20
15
10
0
5
10
15
20
Hour of Day

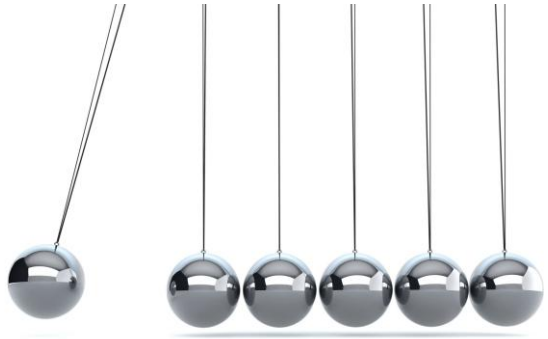
VISUALS 7&8


Distribution of Customer Profiles
1e7
Number of Customers
0.0
0.2
0.4
0.6
0.8
1.0
1.2
Other


1e6
0
1
2
3
4
5
6
0
1
6
2
5
3
4
orders_day_of_week

INSIGHTS AND RECOMMENDATIONS

- The busiest shopping days are Saturday and Sunday, with peak hours from late morning to late afternoon (10 a.m. – 4 p.m.). Advertising efforts should focus on weekends during these times.
- Spending is generally consistent throughout the day, with early mornings showing the highest spending, though likely an outlie Advertising should remain consistent across all hours.
- Produce (department 4) significantly outperforms all other departments, followed by dairy and eggs (department 16). Ads shoul target underperforming categories like frozen (1), beverages (7), and snacks (19) to boost sales.
- Most customers place moderate orders ($10–$40), with loyal customers exceeding $40. To encourage higher spending, target new customers with promotions.
- Ordering habits are consistent across regions. Younger customers (ages 26–35) spend the most on baby products (department 19), making them ideal for targeted ads.
- Middle-aged and senior customers spend slightly more overall and order more frequently. Seniors may benefit from targeted campaigns but could face tech limitations. Middle-aged customers, the wealthiest group, are efficient shoppers but represent a key audience for promotions.



THANK YOU

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