



NIKE SALES GROWTH INITIATIVE

SPRINT 02





CONTENT

01

Data
Manifesto

02

Automated
ETL Pipeline

03

Diagnostic Analytics
Dashboard

04

Predictive
Model

05

A/B Testing

06

Recommendation

Data Manifesto

Empowering Through Data

Purpose: Cultivate a robust data culture for trend anticipation, market adaptation, and innovative product delivery.

Importance: Enhance decision-making, innovation, and data-backed strategy across Nike.

Core Principles

Data Literacy

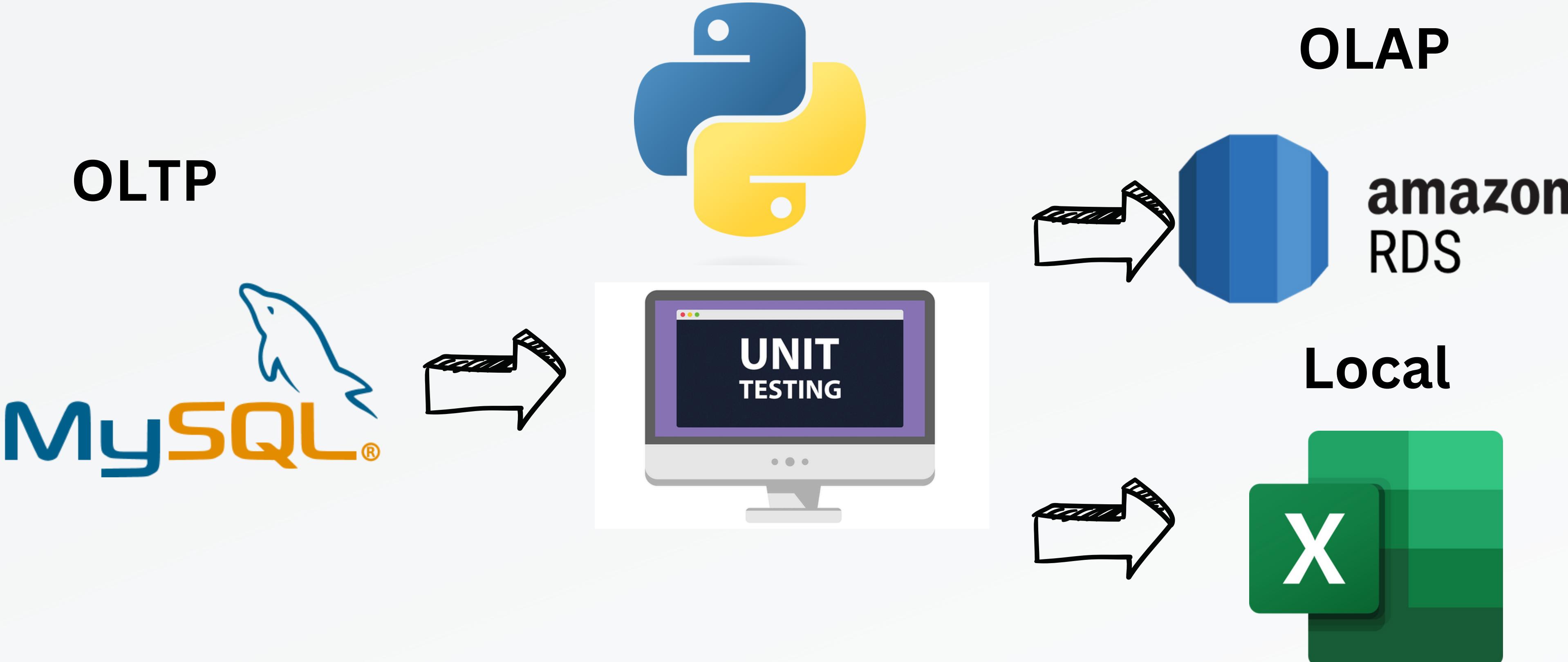
Analytics Maturity

Data-Informed Decisions

Competitive Advantage



ETL Pipeline Overview



Automate ETL Pipeline



Pros:

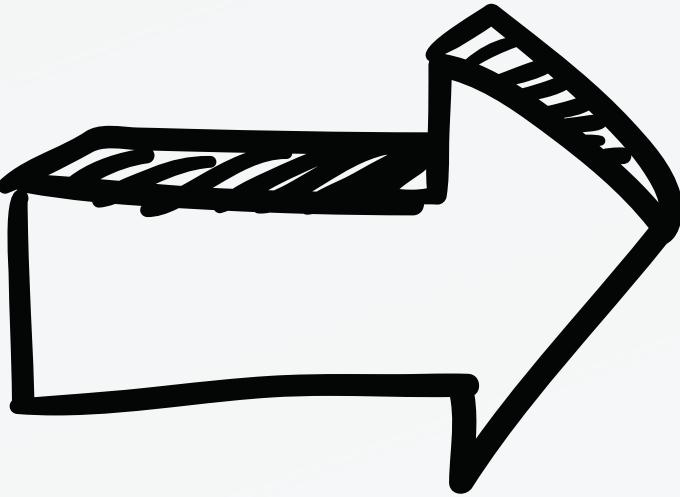
Reduce Manual Process

Free To use

Cons:

Computer needs to be open

Automate ETL Pipeline - Schedule



Every Day at 9:30

Automate ETL Pipeline - Execution and Result

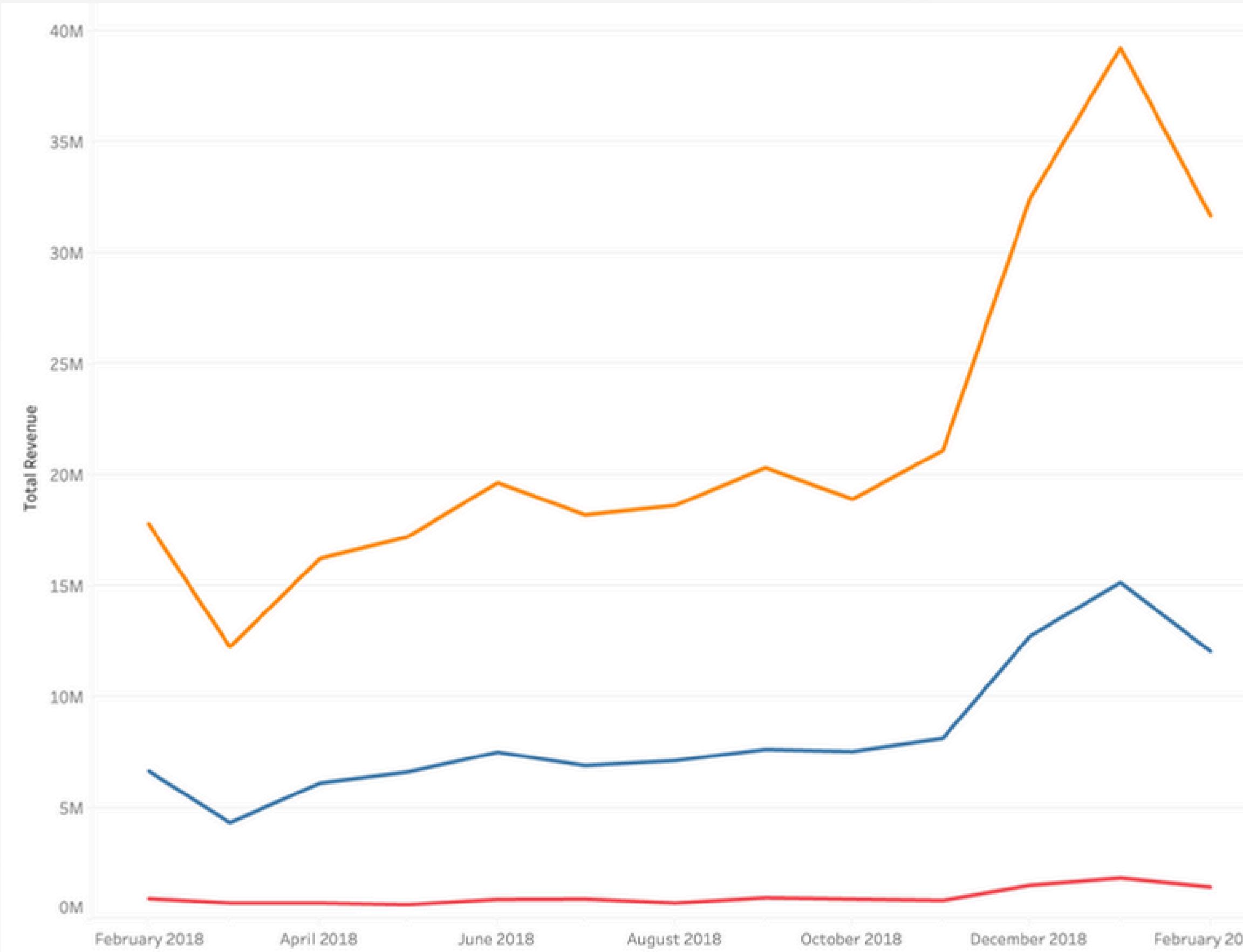
Number of events: 36					
Level	Date on...	Event...	Task Category	Operational Code	Correlation Id
Info	4/24/20...	200	Action started	(1)	b8c7f867-e1...
Info	4/24/20...	100	Task Started	(1)	b8c7f867-e1...
Info	4/24/20...	129	Created Task Pr...	Info	
Info	4/24/20...	119	Task triggered ...	Info	b8c7f867-e1...
Info	4/24/20...	102	Task completed	(2)	03ebc97a-0...
Info	4/24/20...	201	Action complet...	(2)	03ebc97a-0...
Info	4/24/20...	200	Action started	(1)	03ebc97a-0...
Info	4/24/20...	100	Task Started	(1)	03ebc97a-0...
Info	4/24/20...	129	Created Task Pr...	Info	

Event 200, TaskScheduler X

Diagnostic Analytics Dashboard



Seasonal Peaks Drive Revenue Growth



Product Type

- APPAREL
- EQUIPMENT
- FOOTWEAR

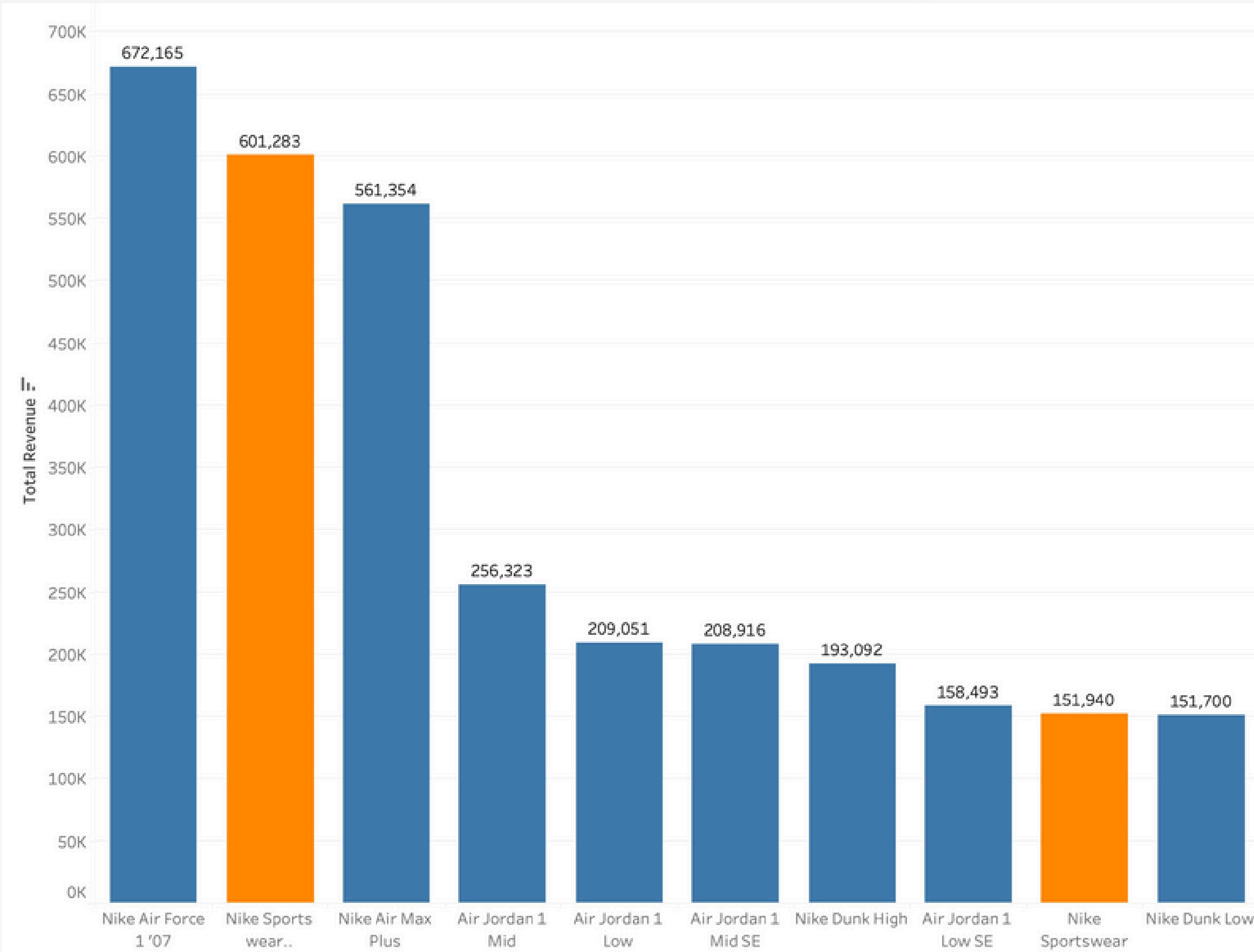
Recommendation

- Intensify marketing before Q4 across all product types.
- Review and adjust inventory levels to meet the forecasted high demand.

Prediction

- Stronger revenue peak in Q4 and smoother sales throughout the year.

Footwear Dominates Bestseller Revenue



Product Type

- APPAREL
- EQUIPMENT
- FOOTWEAR

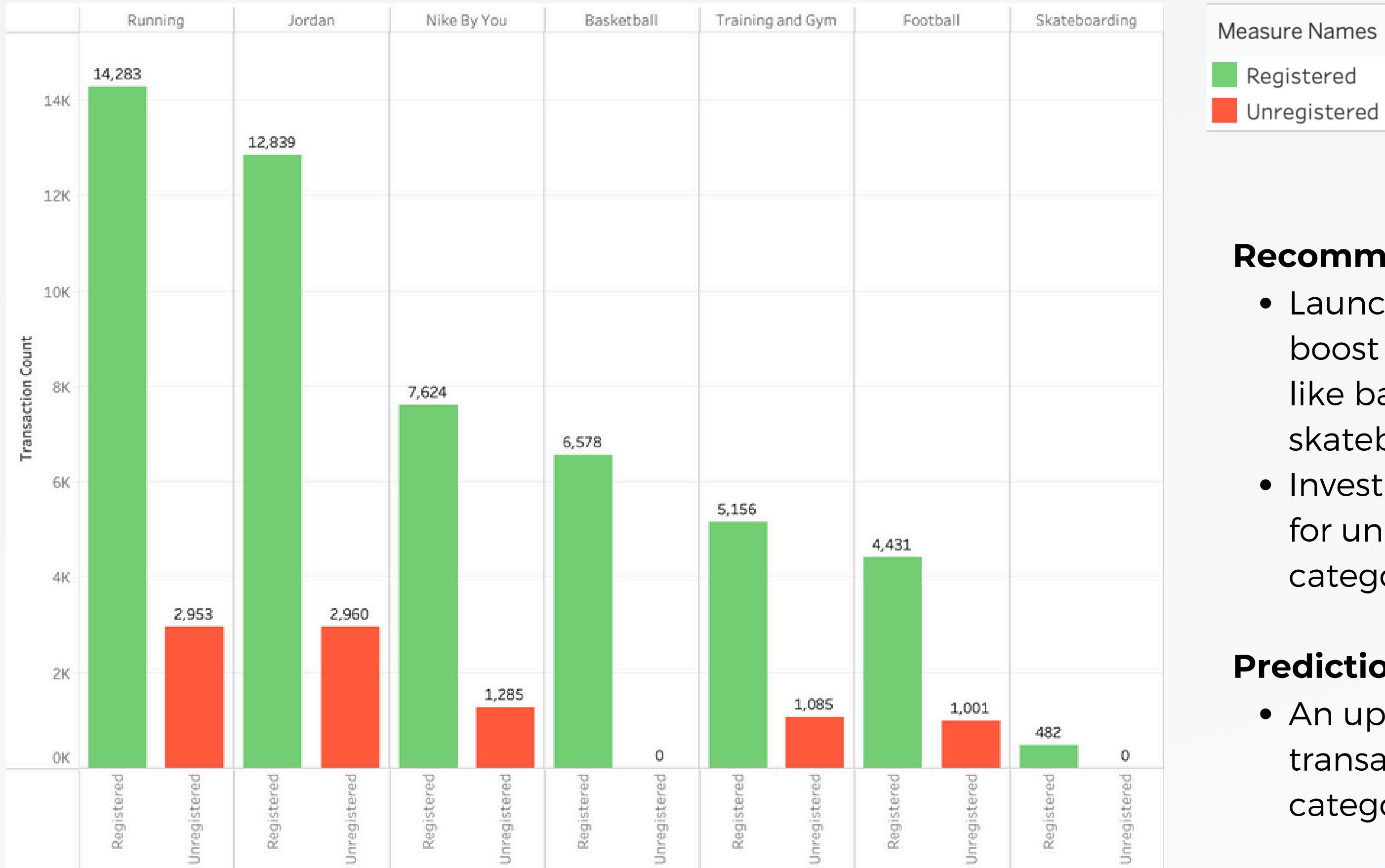
Recommendation

- Boost marketing for leading footwear models.
- Analyze features driving top sales for product enhancements.

Prediction

- Focused marketing may lead to increased sales of already popular footwear lines.

Registered Users Dominate; Unregistered Absent in Niche Categories



Recommendation

- Launch targeted campaigns to boost sales for niche markets like basketball and skateboarding shoes.
- Investigate barriers to purchase for unregistered users in these categories.

Prediction

- An uptick in unregistered user transactions within niche shoe categories.

Soccer Merchandise Leads Apparel Bestsellers



SUM(Total Units Sold)

612 6,878

Recommendation

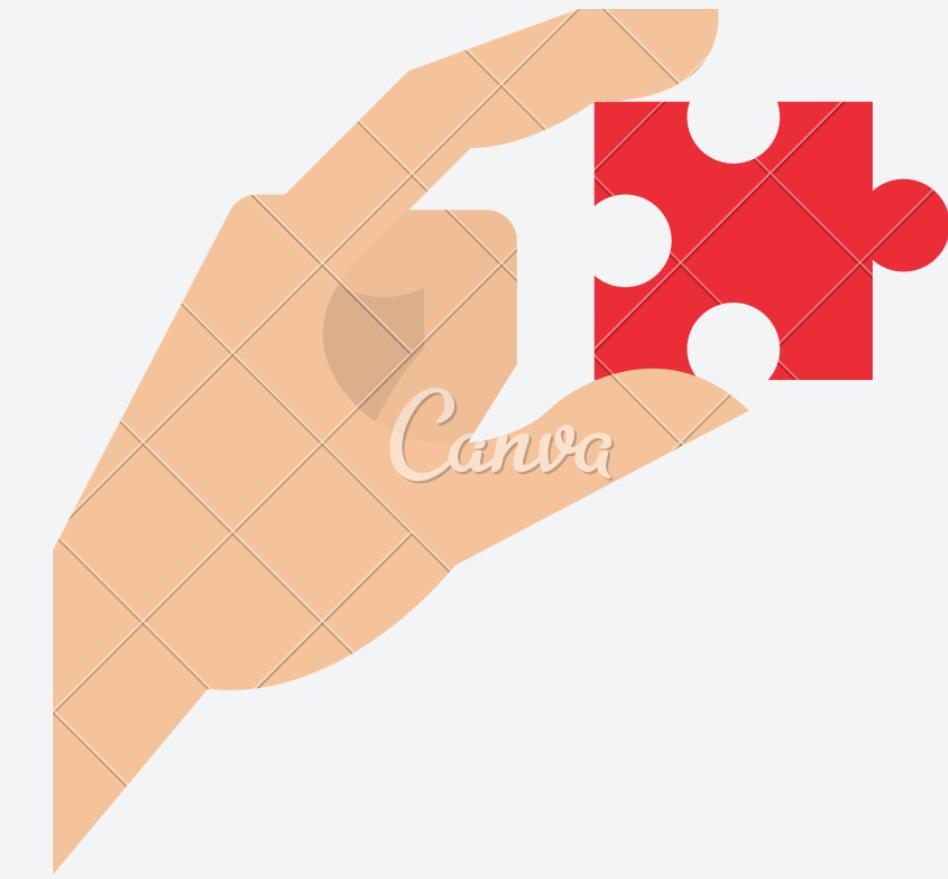
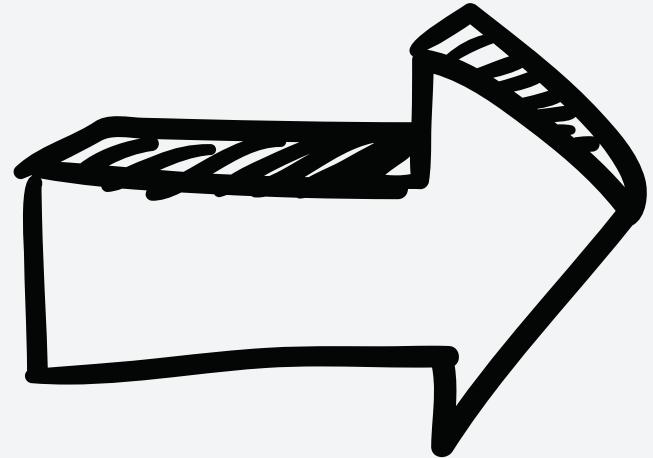
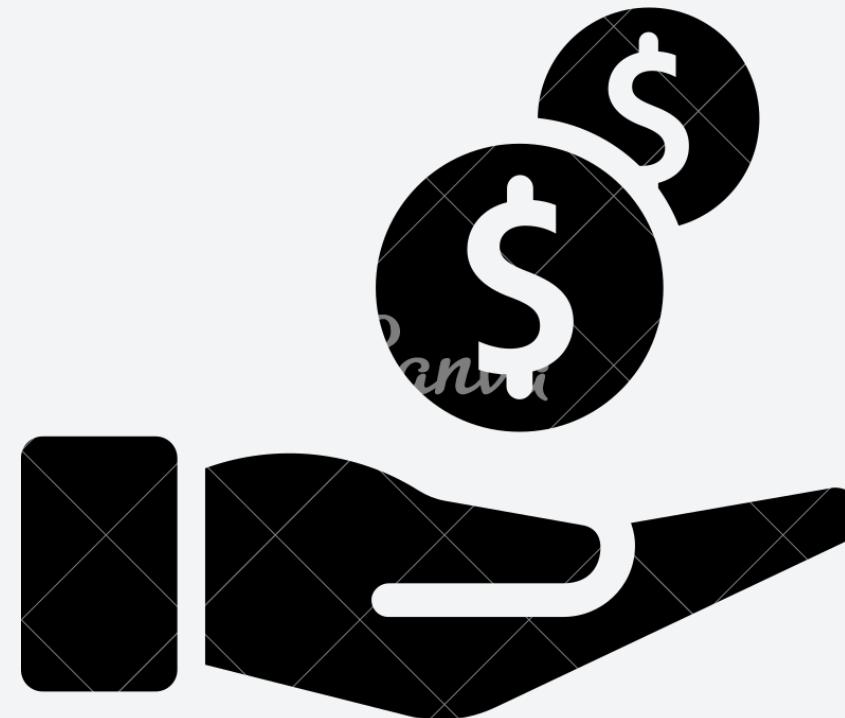
- Expand soccer-related apparel lines.
- Invest in more soccer team collaborations.

Prediction

- Growth in soccer apparel sales and broader market penetration.

Predictive Model

Goal: By predicting the **revenue** with Linear Regression, find out which variables have more impact on predicting revenue

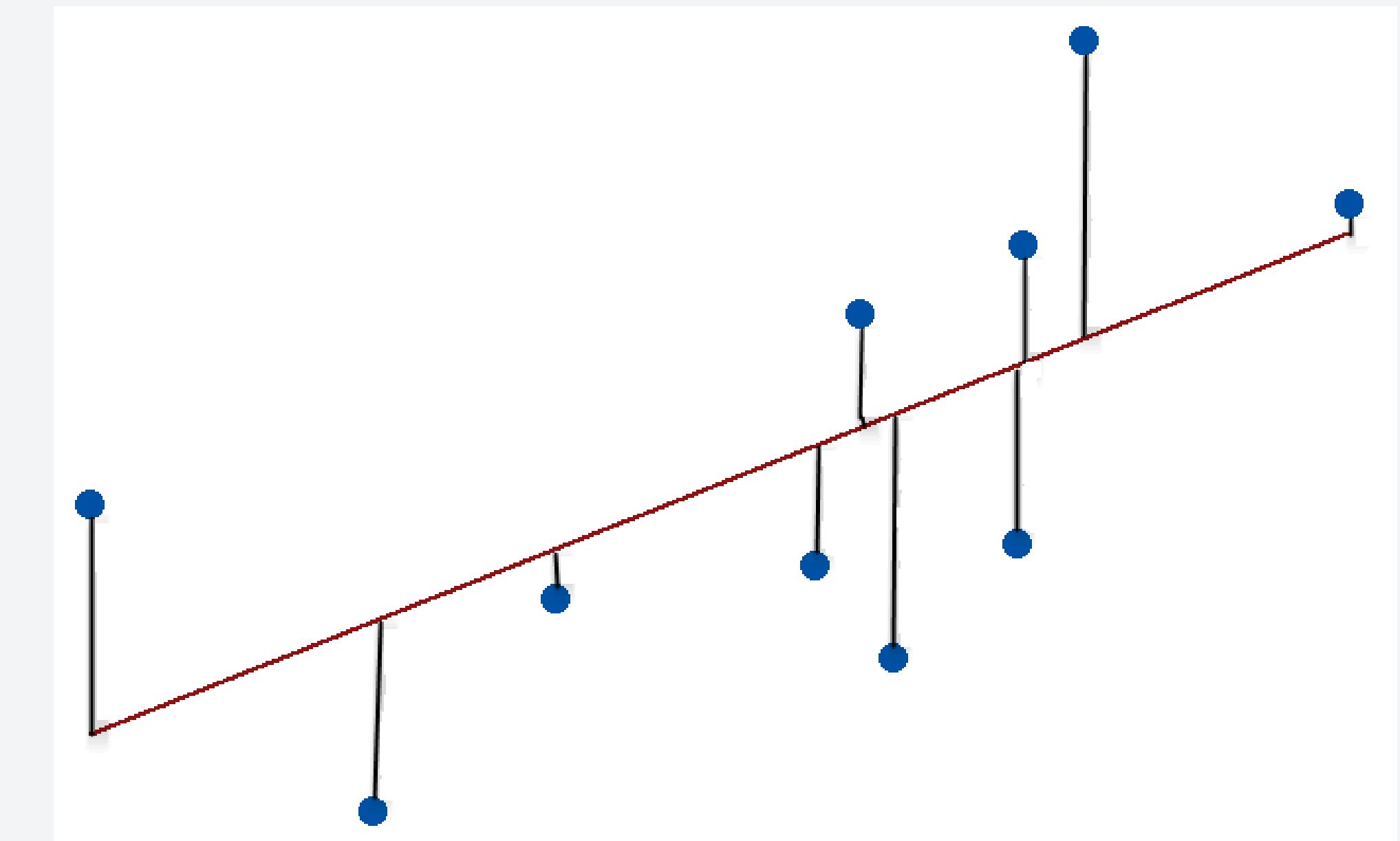


Predictive Model Factors

- Department (Men, Women, Kid)
- Subcategory (Jacket, Hats, Socks...)
- IS_BESTSELLER or not
- Product Color
- Customer State
- Customer Age
- * Product Price

Predictive Model Terminology

MSE: The higher the MSE, the higher the difference of the prediction result



Predictive Model Terminology

R²: The higher the R², the more the variables can explain the model output



Predictive Model Result

Result With Product Price

Mean Squared Error: 101271.51

R² Score: 0.57



Result Without Product Price

Mean Squared Error: 228722.03

R² Score: 0.03



A/B Testing - Metrics

The average revenue generated by registered users is 3 times higher than unregistered users.



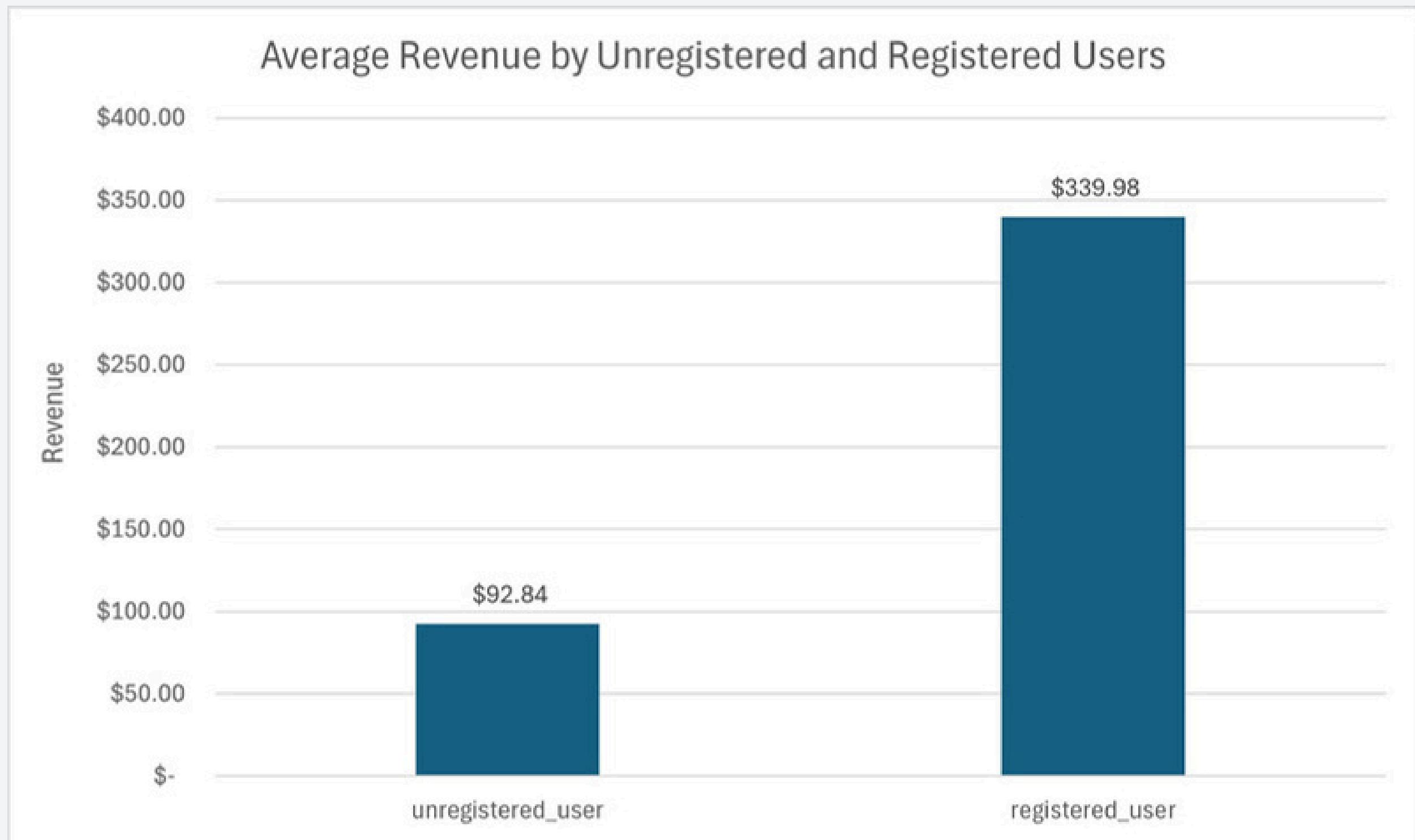
Overall Business Objective:

- Optimize Nike sales



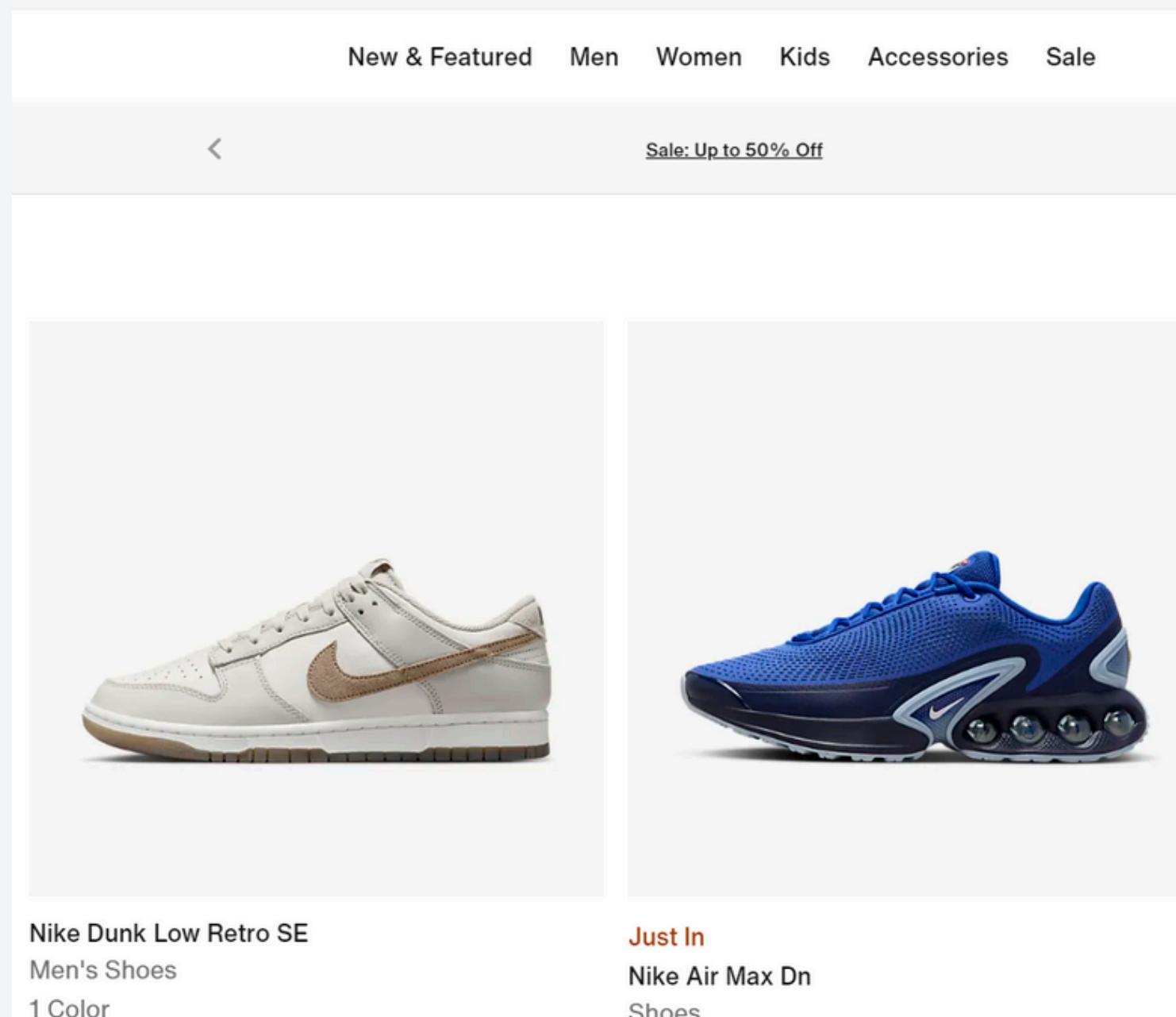
Key Performance Metrics:

- Increase 10% of conversion rate within one month.

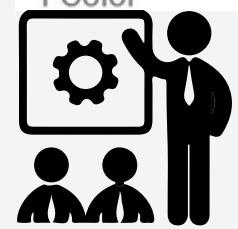


A/B Testing - Experimental Design

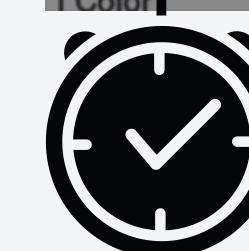
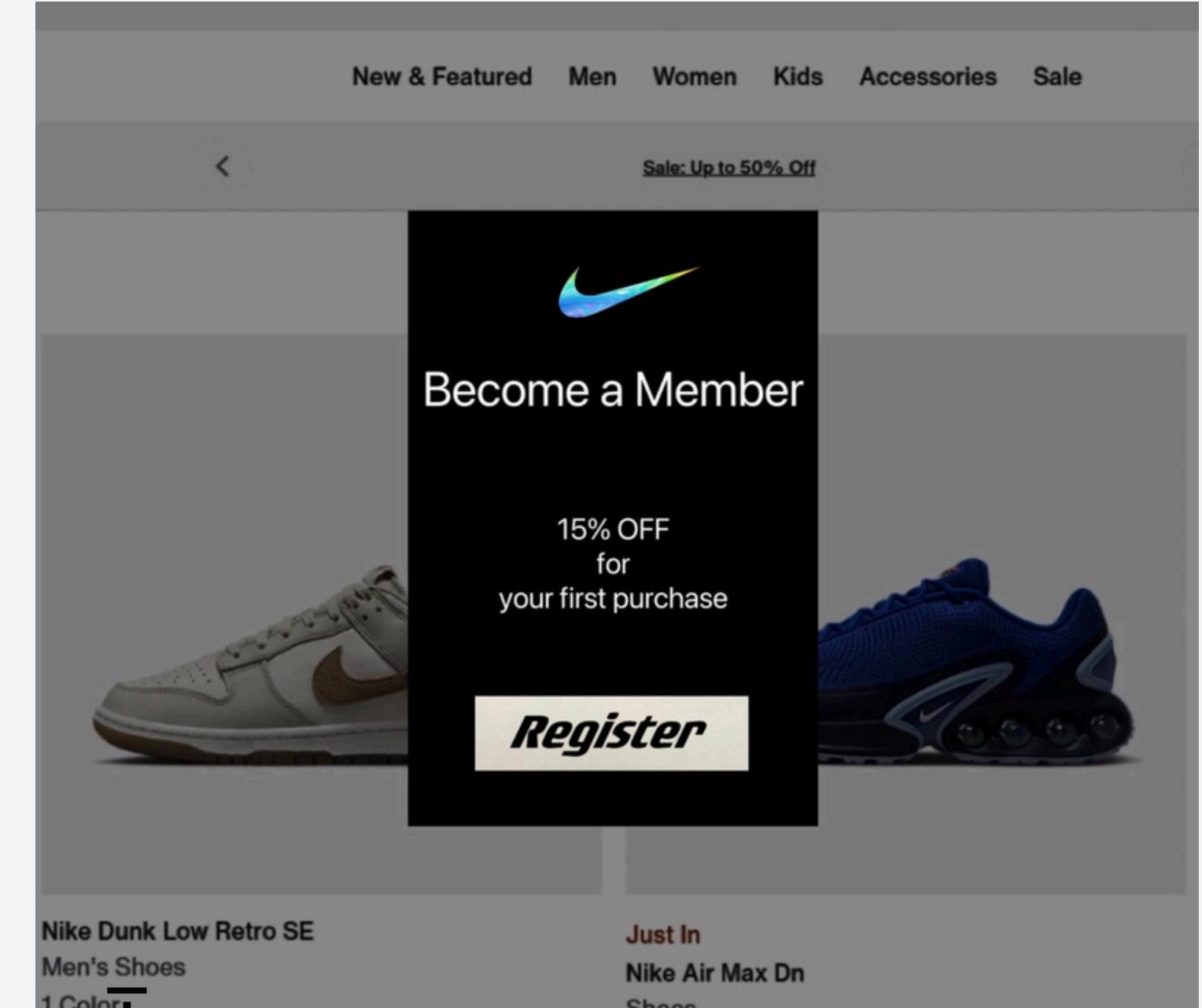
Control Group:



Split the website traffic evenly



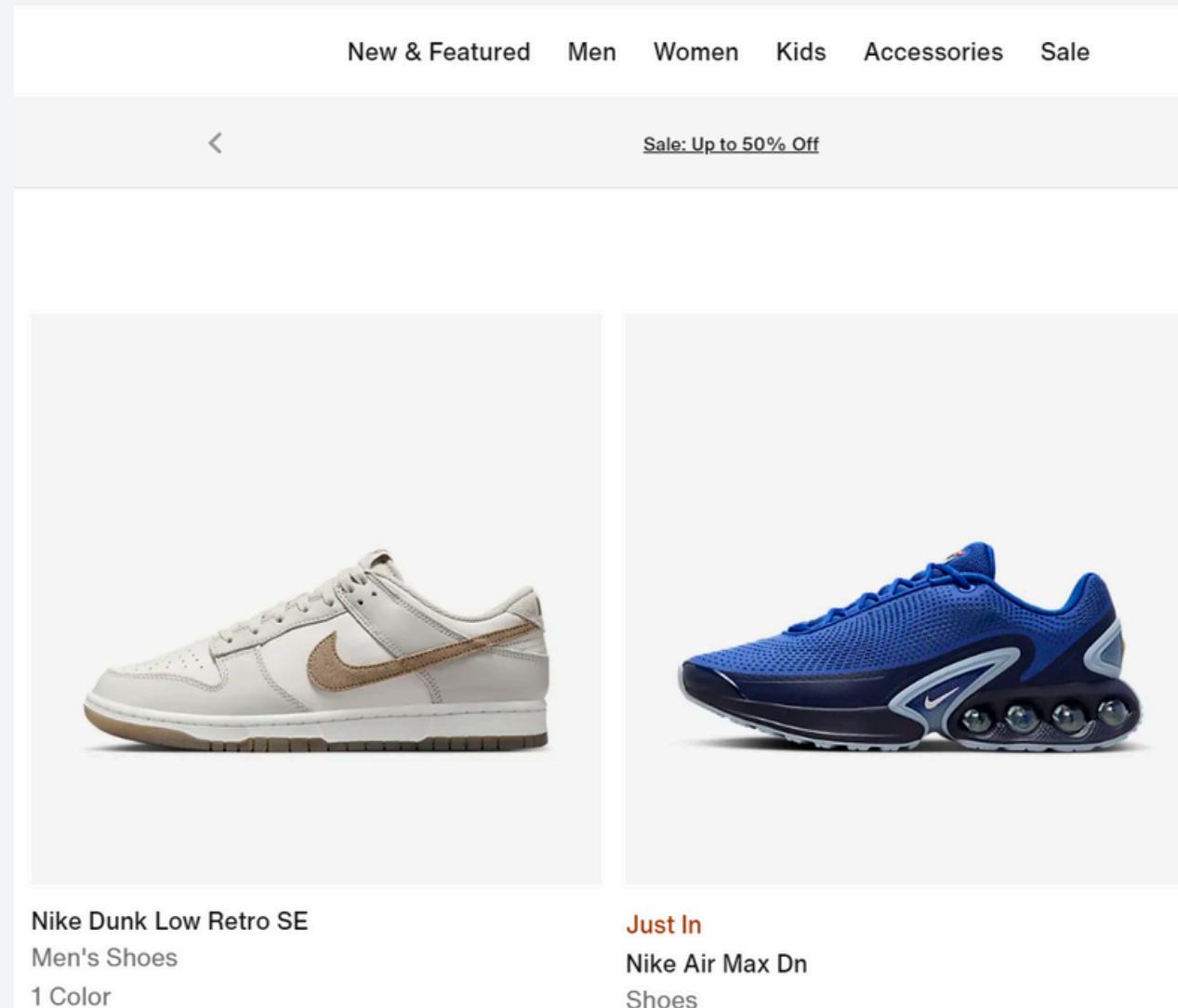
Experimental Group:



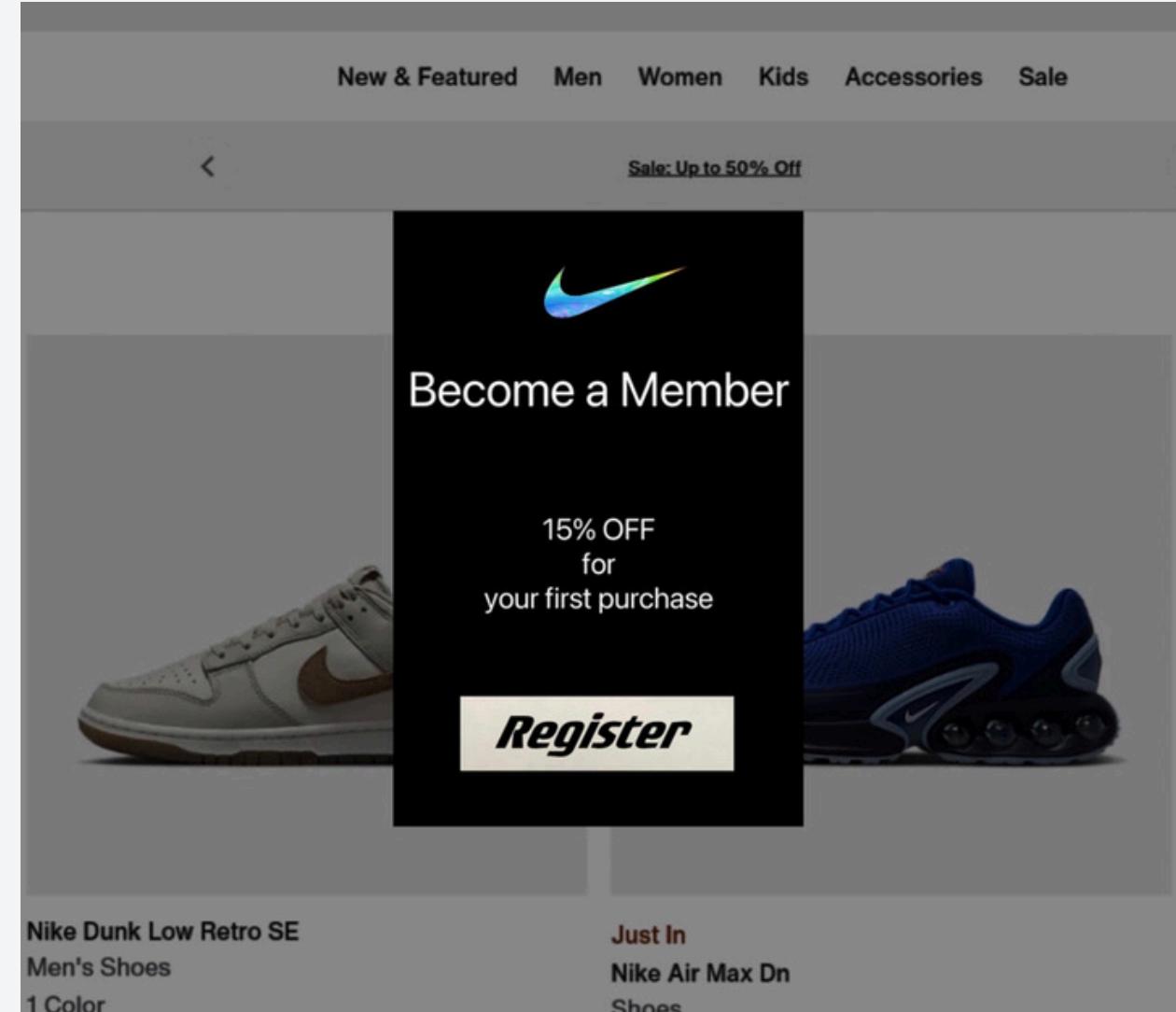
1-month testing period

A/B Testing - Hypotheses

Control Group:



Experimental Group:



- Null hypothesis: There is no significant difference in the conversion rate between the control and experimental group.

- Alternative hypothesis: There is a significant difference in the conversion rate between the control and experimental group.



Expected
Outcome

A/B Testing - Sample Size Calculation



We want:

- result to be statistically significant
- correctly reject the null
- lower MDE
- 10% conversion rate
- enough sample size

Evan's Awesome A/B Tools ([home](#)):
[Sample Size Calculator](#) | [Chi-Squared Test](#) | [Sequential Sampling](#) | [2 Sample T-Test](#) | [Survival Times](#) | [Count Data](#)

Question: How many subjects are needed for an A/B test?

Baseline conversion rate:	10 %		10%	[link]
Minimum Detectable Effect:	5 %		5% – 15%	
<small>The Minimum Detectable Effect is the smallest effect that will be detected $(1-\beta)\%$ of the time.</small>		<input checked="" type="radio"/> Absolute	<input type="radio"/> Relative	Conversion rates in the gray area will not be distinguishable from the baseline.

Sample size:

1,022

per variation

Statistical power $1-\beta$:

95% Percent of the time the minimum effect size will be detected, assuming it exists

Significance level α :

5% Percent of the time a difference will be detected, assuming one does NOT exist

See also: [How Not To Run an A/B Test](#)

A/B Testing - Implementation Plan



Technical Requirement:

- Google Analytics



Ethical considerations:

- All data secured in Data warehouse
- Protect customer privacy
- Restriction of access - credentials only



Potential bias:

- seasonality bias
- Example - Christmas

x

i It could take up to a minute for the Google Ads conversion actions table to show updated tracking statuses. [?](#)

Results of troubleshooting

This conversion action is sending data to Google Ads

Category	Conversion ID	Conversion label	Conversion value	Transaction ID
Sign-up	517835455	U0m7CL-V9vYBEJmdvfoC	100 USD	3083

1 more conversion actions

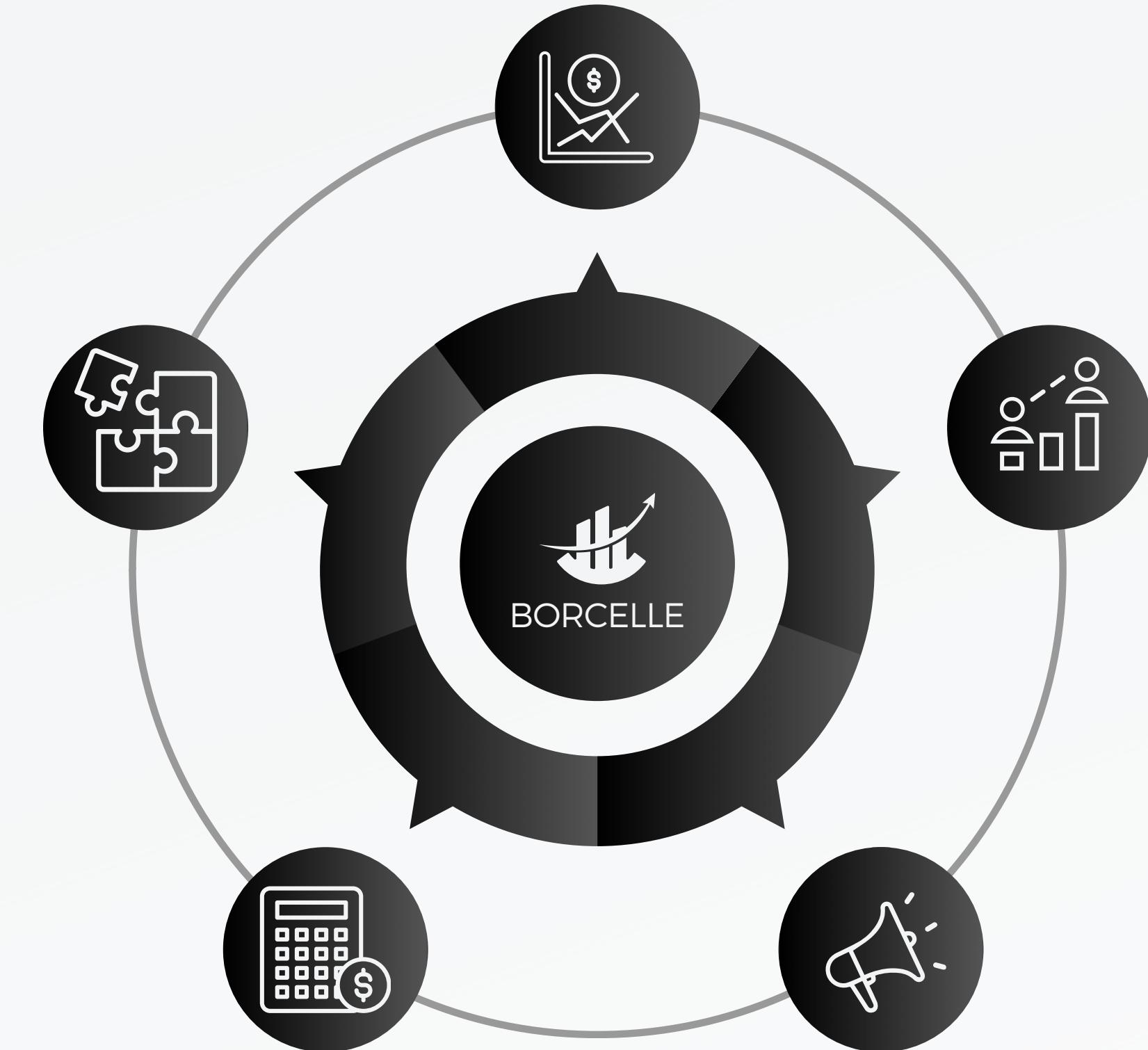
i My Test Page Conversion

Category	Conversion ID	Conversion label	Conversion value	Transaction ID
Purchase	517464719	CwGnCI_F3_YBEJmdvfoC	1200 USD	7105

[See more details in Tag Assistant](#)

A/B Testing - Data Collection & Analysis

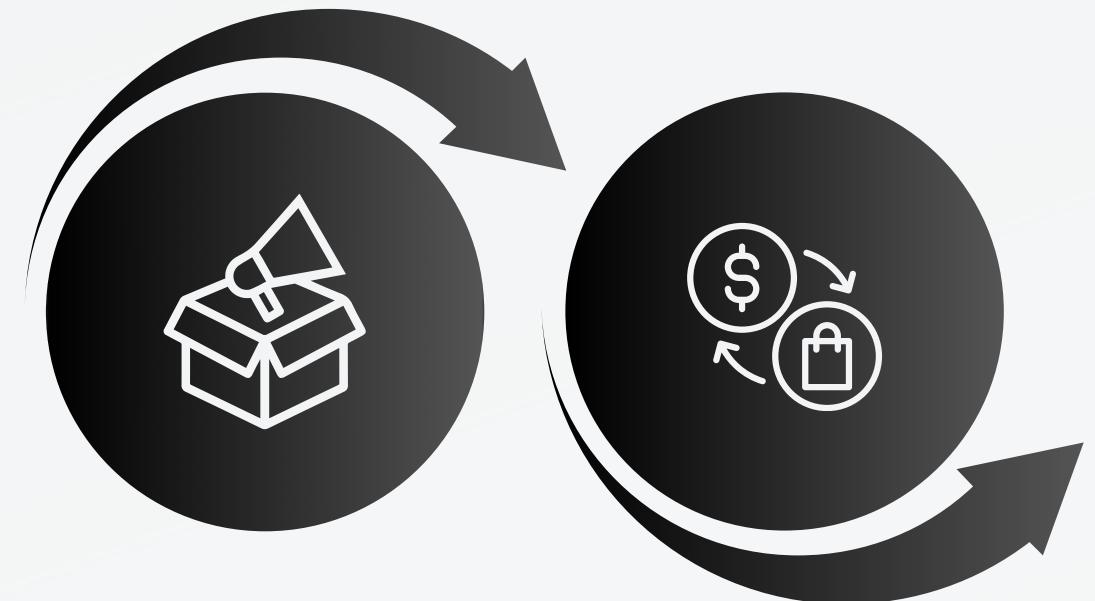
- 01** Compare & define the significant difference
- 02** Store and secure data in data warehouse
- 03** Calculating statistics: t-test, p-value in Excel
- 04** Visualize the results
- 05** Generate a report & decision-making



A/B Testing - TimeLine

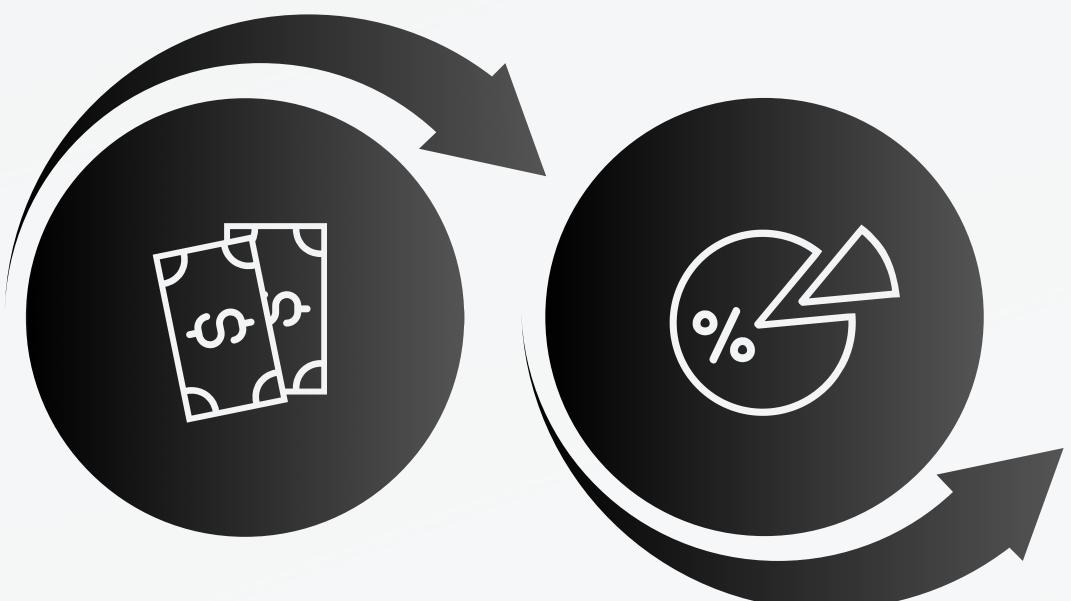
week#1

Create and set up a Google Analytics account and a Google Optimize account.



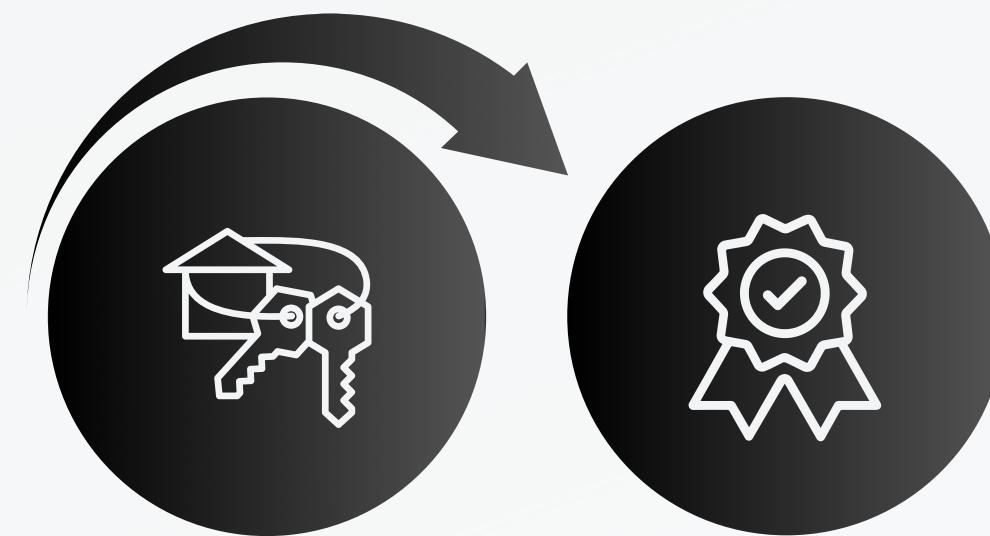
week#2

Discuss and finalize the wording and graphic design of the pop-up advertisement.



week#3

Set up the A/B testing on Google Analytics with both control and experimental variants.



week#4 - week#8

Daily monitor the changes in the website traffic, click-through rate, and conversions.

week#9

Calling the A/B testing, collect the data in CSV form, and store the data in our data warehouse.

week#10

Perform data analysis, visualizations, and generate reports.

RECOMMENDATIONS



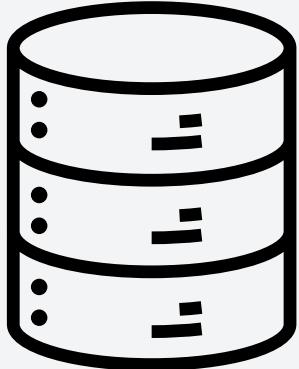
Improve

Improve the predictive model due to low R^2 , high MSE, and a need for more relevant data



Invest

Invest in soccer collaborations, Q4 marketing, niche markets, leading footwear lines,



ETL

Utilize ETL for as many processes as are relevant



A/B Testing

Conduct A/B testing in the future. Seek opportunities for increasing sales.