



Understanding Customer Buying Patterns:

Data-Driven Strategies for Online Retail

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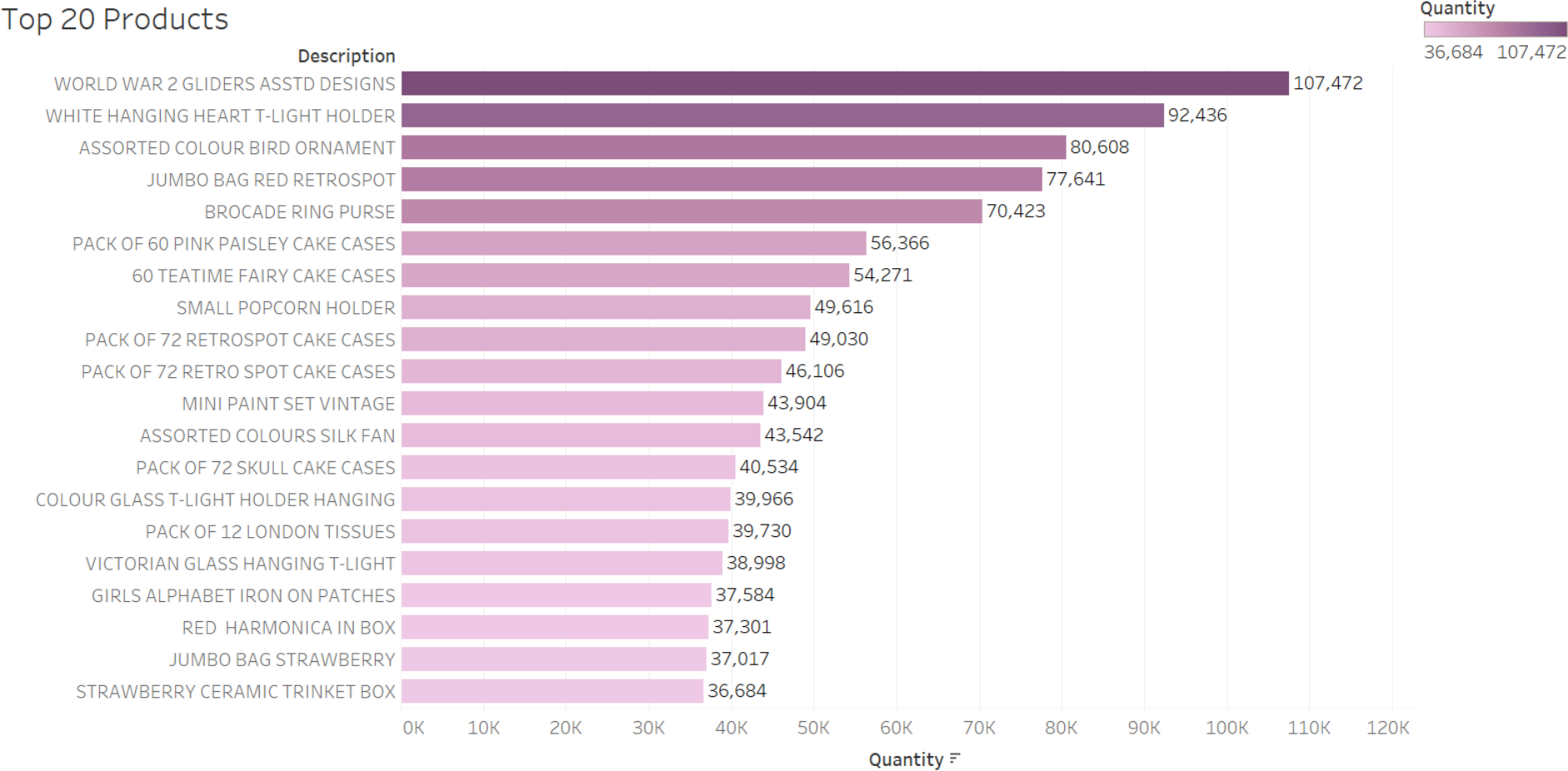
What factors drive customer purchasing behavior?

1 million transactions

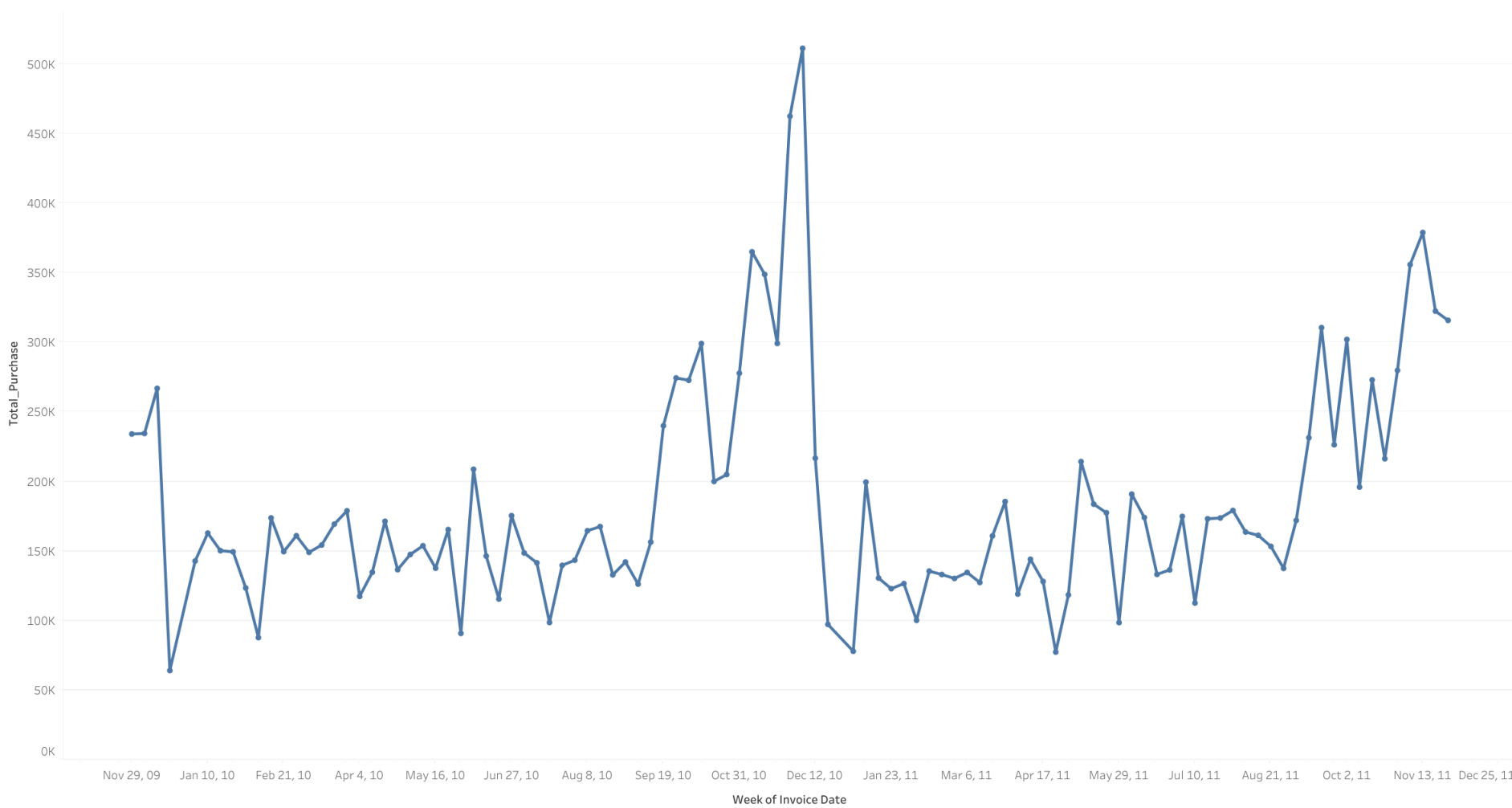
- Transaction Numbers
- Product Codes and Names
- Purchase Quantity and Price
- Customer Information



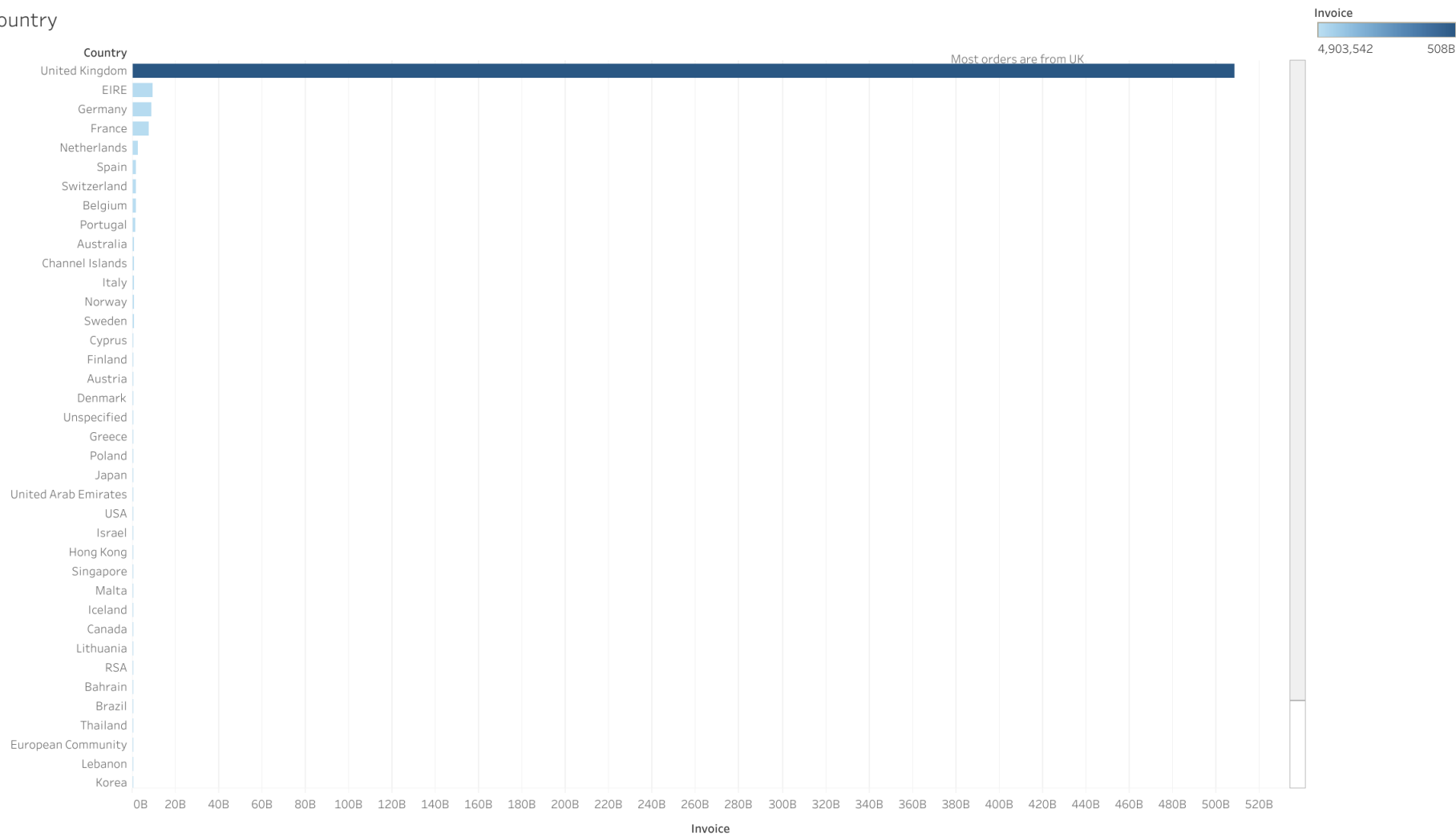
Top 20 Products



Total Purchase From 2010-2011



Top Country



THE HYPOTHESES



NULL HYPOTHESIS

Customer purchasing behavior is random and **not** influenced by identifiable factors.



ALTERNATIVE HYPOTHESIS

Factors such as demographics and time or purchase play a significant role in shaping purchasing behavior.

DATA ANALYSIS PROCESS

Data Cleaning

Ensure the data analyzed is reliable



Feature Engineering

Create a new variable - TotalPurchase



Data Transformation

Apply mathematical transformation to ensure consistent patterns



DATA ANALYSIS PROCESS

Multiple Linear Regression

Explore the relationship between the total purchase among customer attributes



Clustering Analysis

Technique to group customers based on their purchasing behavior



REGRESSION ANALYSIS

findings

The analysis explains

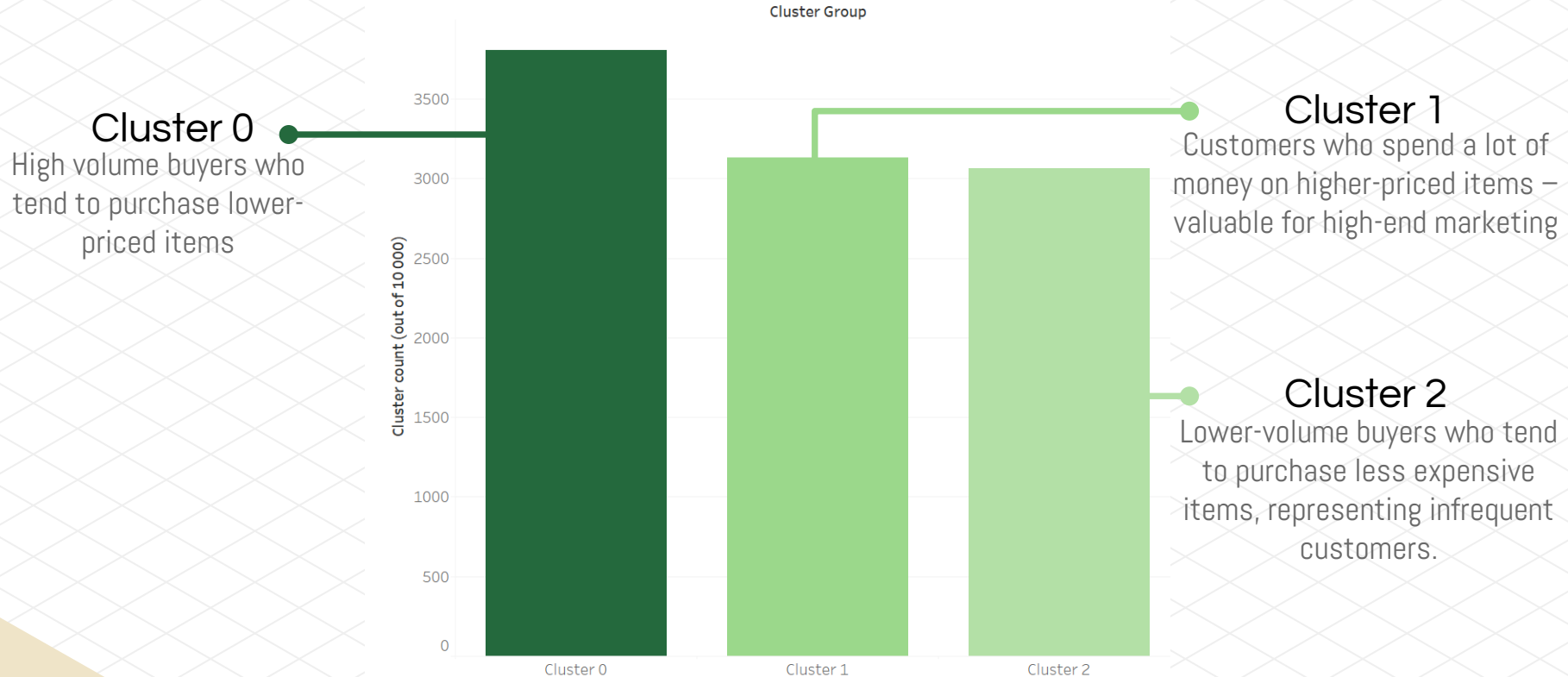
16.7%

of the variance in
customer purchasing behavior.



CLUSTERING ANALYSIS

findings

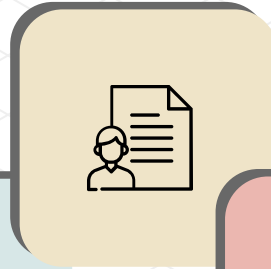
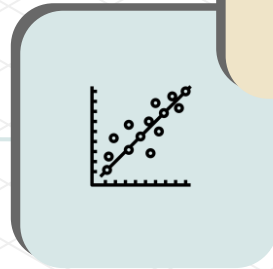


LIMITATIONS



Techniques

Relies heavily on linear models; customer behavior is more complex



Data Constraints

Lacks important demographic details



Time Range

Data only spans a two-year period

PROPOSED ACTIONS

1

Segment-Specific Marketing

Create targeted marketing strategies



Cluster 0

Frequent Low-Priced Buyers

Implement bulk-purchase incentives



Cluster 1

High-Value Customers

Offer early access or premium services



Cluster 2

Infrequent Low-Spenders

Attracts with discounts and special offers

PROPOSED ACTIONS

2

Data Collection Improvements

Expand data collection efforts

3

Advanced Modeling

Consider using more advanced machine learning models



EXPECTED BENEFITS



Improved Customer Engagement

See better engagement from all types of customers



Increased Revenue

Retaining high-spending group could significantly boost revenue



Cost savings in Marketing

Focus resources on the right segments helps avoid wasted marketing spend



Better Customer Insights

Adding more data will allow deeper understanding of customer behavior



THANKS

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