ADS 575 Applied Testing for Data Science

Project

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01

Introduction

The New Service

Introduction

The company is considering to adopt a new service. To this end, pilot cities of A, B and C has been chosen.

The aim of this study is to come up with the policy suggestions regarding the adoption of the new service.

02

The Data

A Comparison of the Features

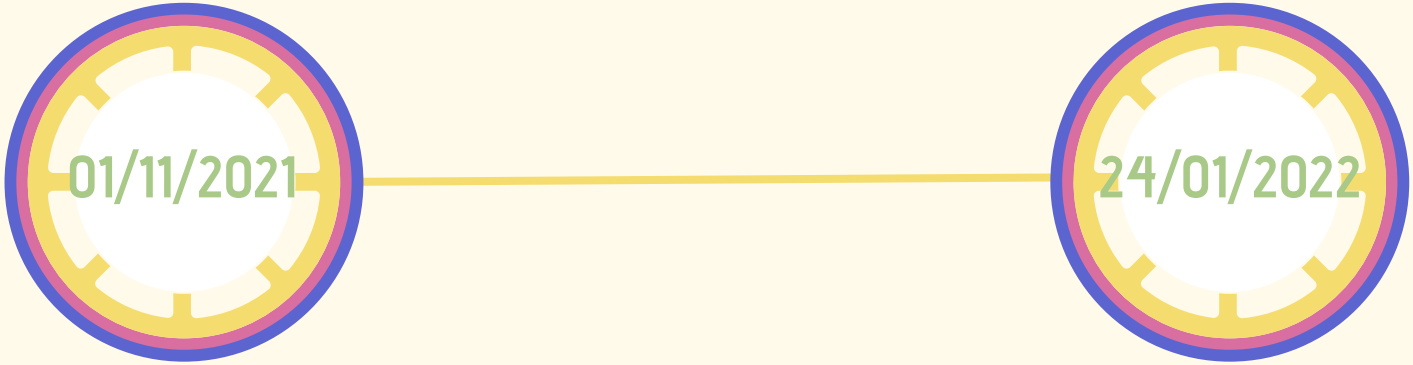
The Data

The Variables

city	Anonymized city name
customer_id	Anonymized unique customer id. One customer can have multiple orders.
order_date	Order date. Range from 01/11/2021 til 24/01/2022
customer_n_th_order	Count of orders per customer ordered by date. One customer can have one or more orders over time
order_id (key)	Anonymized unique order id. Order id is unique and doesn't repeat.
restaurant_id	Anonymized unique restaurant id. One restaurant can deliver one or more orders.
cuisine_type	Culinary group of the restaurant.
device_type	Two possibilities: mobile or website.
order_uses_new_service	binary value in case a customer uses a new service. One customer can have different values for each order.
customer_segment	binary value in case a customer is adopting a new segment. One customer can have different values for each order.
delivery_status	An order can be "delivered' or 'no delivered'.
delivery_distance	Delivery distance in metres.
delivery_time_min	The time, in minutes, between the payment and the delivery of an order.
delivered_on_time	Binary value, showing if an order was delivered on time or not.
order_food_price	Price in euros.
delivery_fee	Price in euros.
gross_order_value	sum of food price plus delivery
pct_comission_on_gross_order_value	the amount, in %, earns from the gross_order_value
delivery_cost	how much cost the delivery for (including all costs)
food_rating	Given by a customer. Classification from 1 to 5, being 1 the worst and 5 the best possible rating.
delivery_rating	Given by a customer. Classification from 1 to 5, being 1 the worst and 5 the best possible rating.

- 21 variables
- 5000 orders

Time Period for the Orders



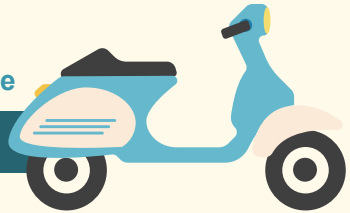
The dataset includes the orders of the one year period

Orders Breakdown by New Service Usage

19%

Orders with the New Service

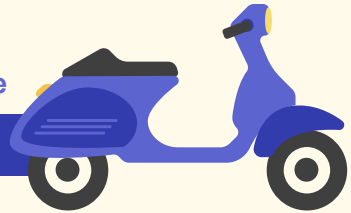
Customers have used the new feature only for 19% of the orders.



81%

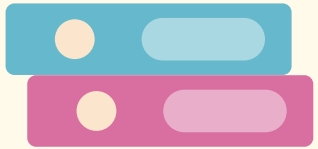
Orders without the New Service

81% of the orders did not include the new service.



Orders Breakdown by City

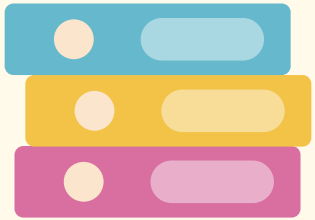
19%



City C

City C has the smallest share of the orders

28%



City B

City B has the second highest share in the orders.

53%

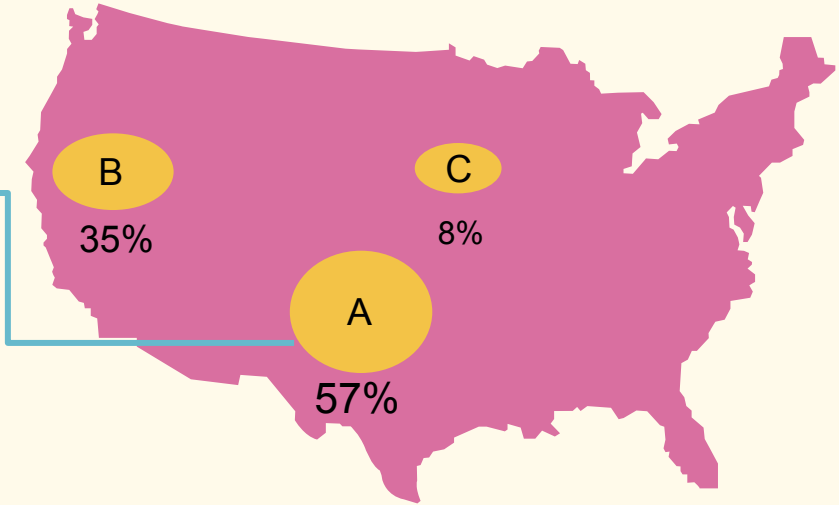
City A

City A has the highest share of orders.

City Breakdown of the Orders with the New Service

New Service Users

- City A has the highest share of orders with the new service.
- City B has the second highest share in the orders with the new service.
- City C has the smallest share of the orders with new service

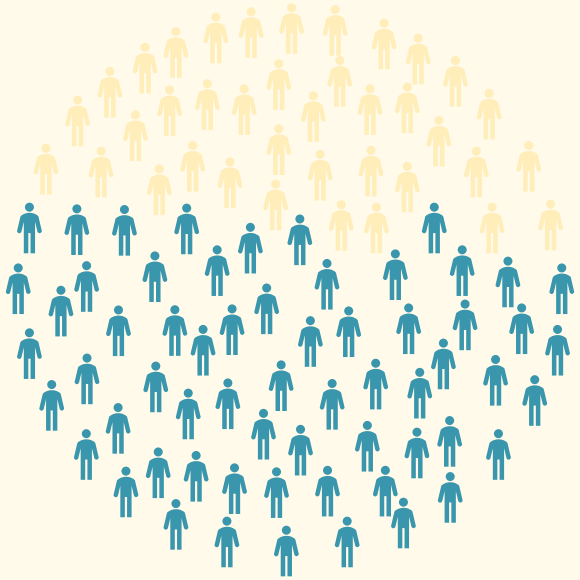


The Number of Orders

70%

1st Order

70% of the customers have ordered from the app just once in 2021.



2nd Order

13% of the customers have ordered from the app twice in 2021.

3rd Order

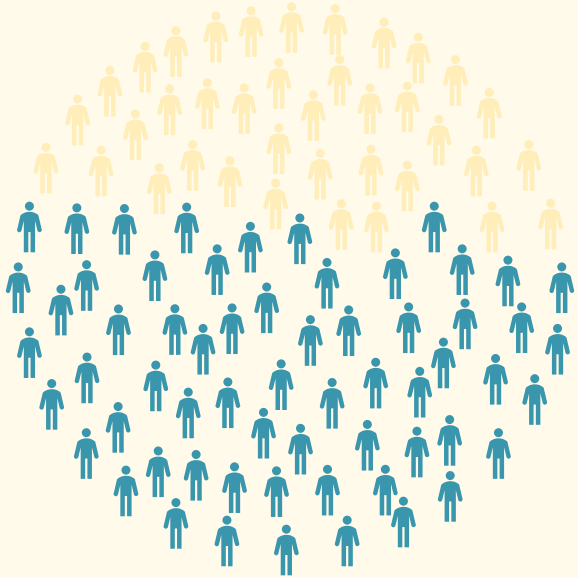
6% of the customers have ordered from the app three times in 2021.

4th Order

3% of the customers have ordered from the app four times in 2021.

The Breakdown of the Number of Orders with the New Service

70%



1st Order

70% of the customers who have used the new service ordered from the app just once in 2021.

2nd Order

12% of the customers who have used the new service ordered from the app twice in 2021.

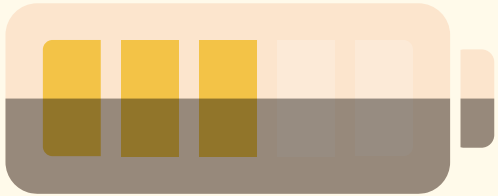
3rd Order

4% of the customers who have used the new service have ordered from the app three times in 2021.

4th Order

3% of the customers who have used the new service have ordered from the app four times in 2021.

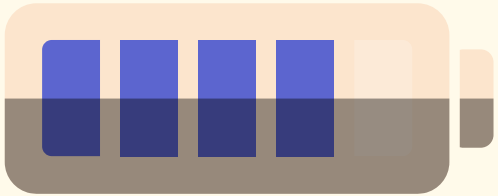
Orders Breakdown by App



38%

Website

Customers have ordered from the website in 38% of the orders.

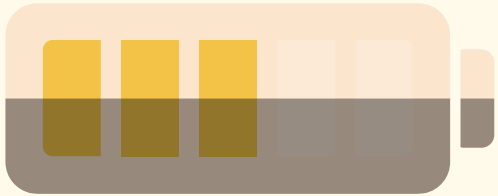


62%

Mobile

Customers have used mostly the mobile app for the orders.

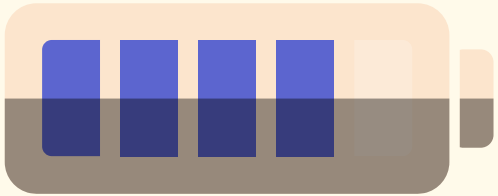
Orders with the New Service by App



37%

Website

Customers who have used the new service ordered from the website in 37% of the orders.

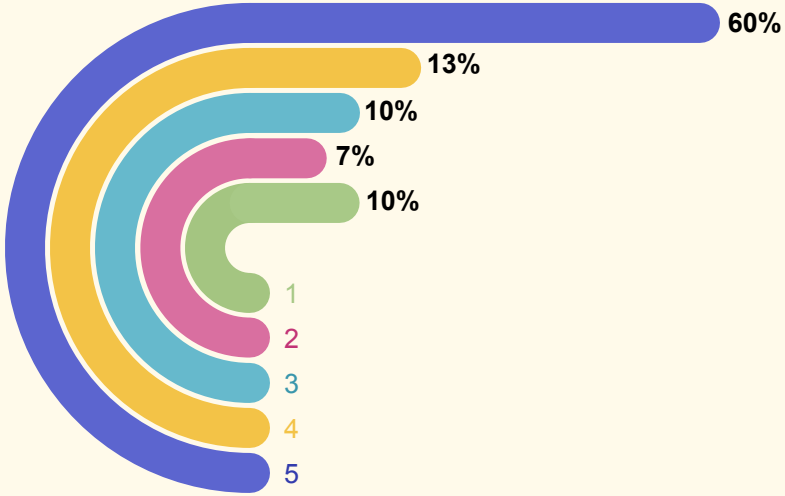


63%

Mobile

Customers who have used the new service used mostly the mobile app for the orders.

Order Breakdown by Food Rating



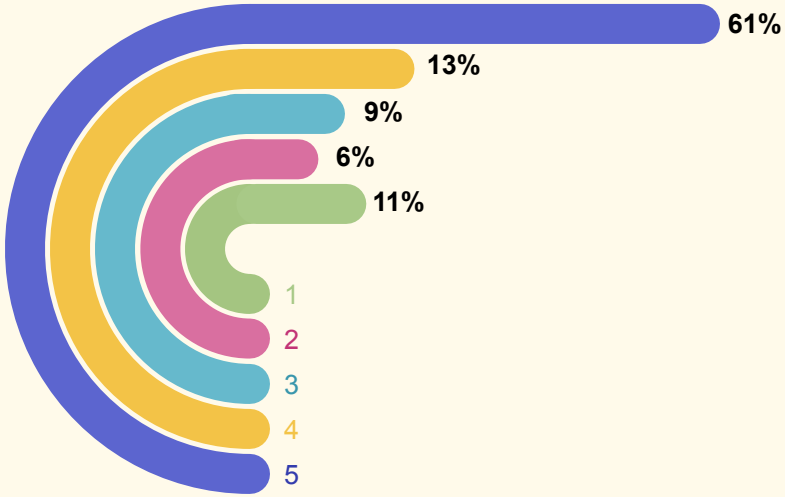
Food Rating

73% of food orders have received rating of 5 and 4.

27% of food orders have received lower rating.

Food Rating of 1
Food Rating of 2
Food Rating of 3
Food Rating of 4
Food Rating of 5

Orders with the New Service by Food Rating



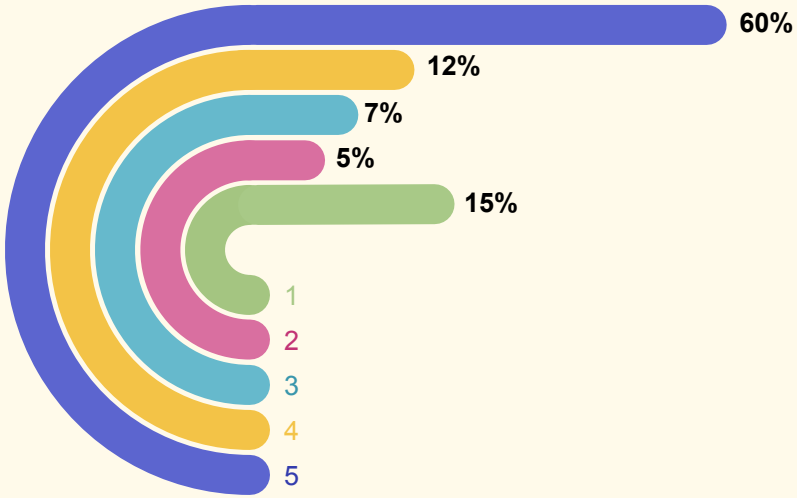
Food Rating

74% of food orders with the new service received rating of 5 and 4.

26% of food orders with the new service received lower rating.

Food Rating of 1
Food Rating of 2
Food Rating of 3
Food Rating of 4
Food Rating of 5

Order Breakdown by Delivery Rating



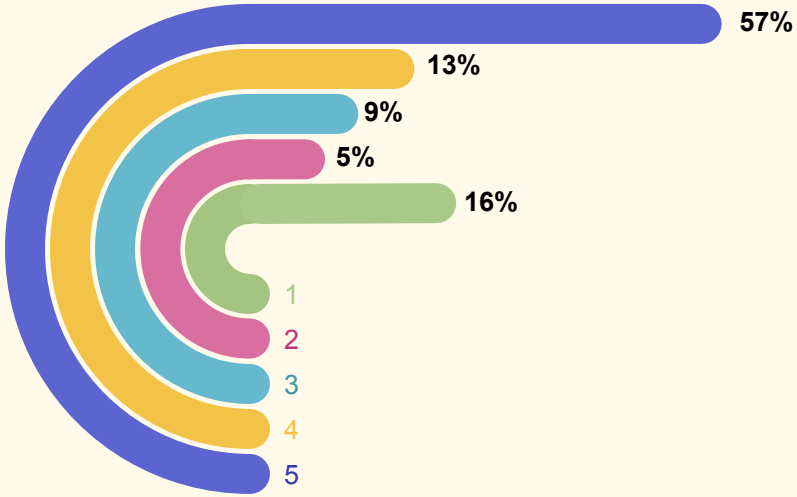
Delivery Rating

72% of orders have received delivery rating of 5 and 4.

28% of orders have received lower delivery rating.

Delivery Rating of 1
Delivery Rating of 2
Delivery Rating of 3
Delivery Rating of 4
Delivery Rating of 5

Orders with the New Service by Delivery Rating



Delivery Rating

70% of orders with the new service have received delivery rating of 5 and 4.

30% of orders with the new service have received lower delivery rating.

Delivery Rating of 1
Delivery Rating of 2
Delivery Rating of 3
Delivery Rating of 4
Delivery Rating of 5

Orders Breakdown by Delivery Time

Not Delivered on Time

23% of the orders have not been delivered on time.

Delivered on Time

77% of the orders have been delivered on time.

Orders with the New Service by Delivery Time

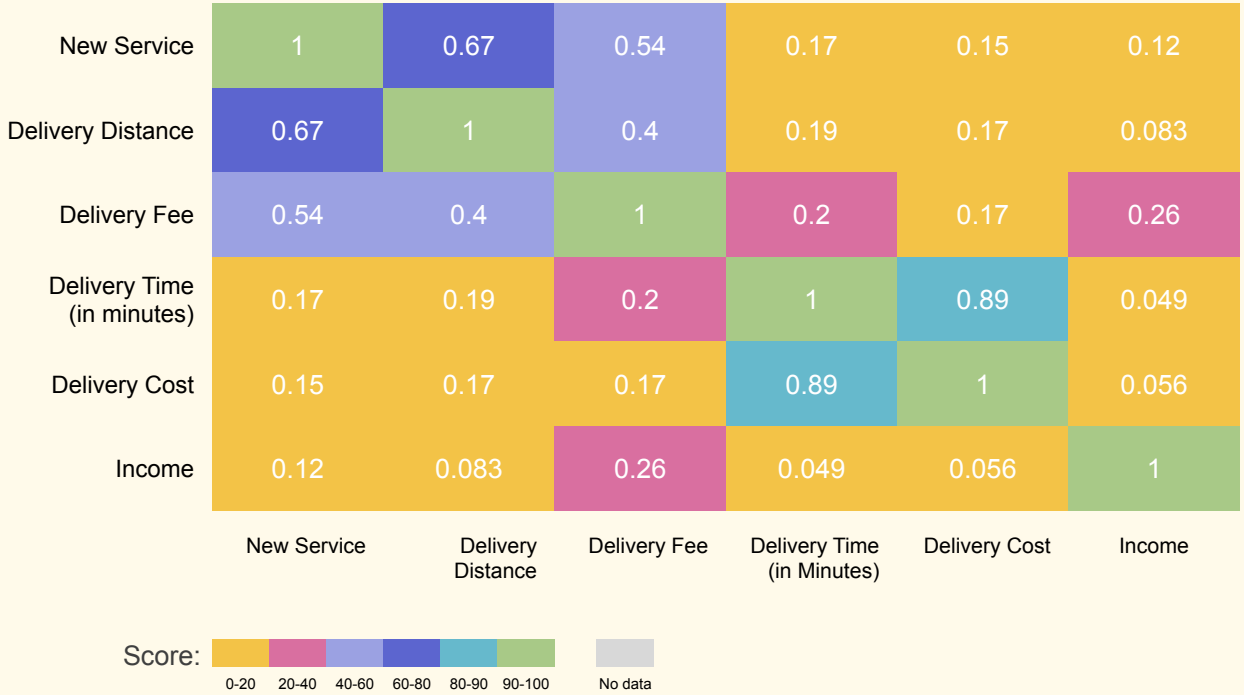
Not Delivered on Time

23% of the orders with the new service have not been delivered on time.

Delivered on Time

77% of the orders with the new service have been delivered on time.

Correlation Heat Map



03

Benefits- Costs

Cost

Delivery Cost

Benefit

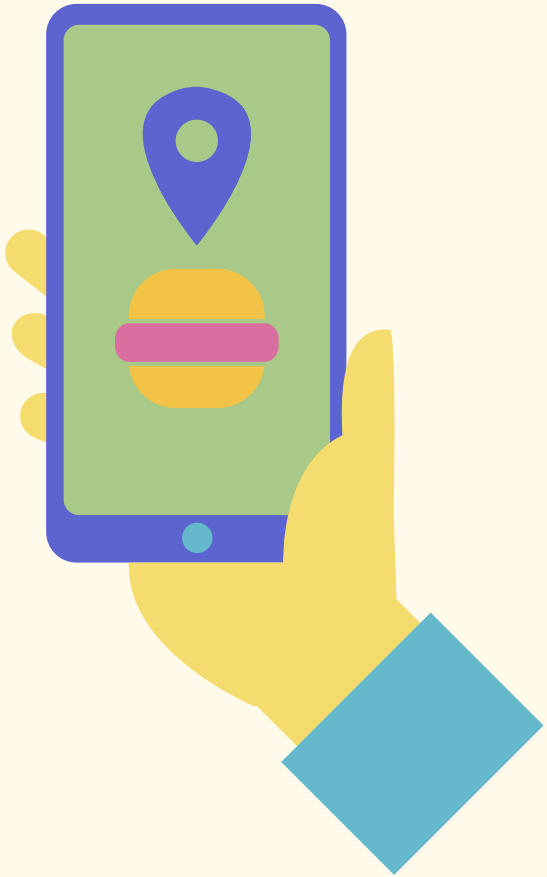
Income

Higher Income

Income= Delivery Fee + Order Food Price * Pct Commission

10 Euros

On average each order with the new service generates 10 Euros whereas the orders without the new service generates 8 Euros for the company.



Benefits of the New Service

Higher Income

On average the orders with the new service generates additional 2 Euros of income

Higher Order Food Price

On average the orders with the new service generates 1 additional Euro of food price

Higher Gross Order Value

On average the orders with the new service generates 3 additional Euros of gross order value

Lower Commission Percentage

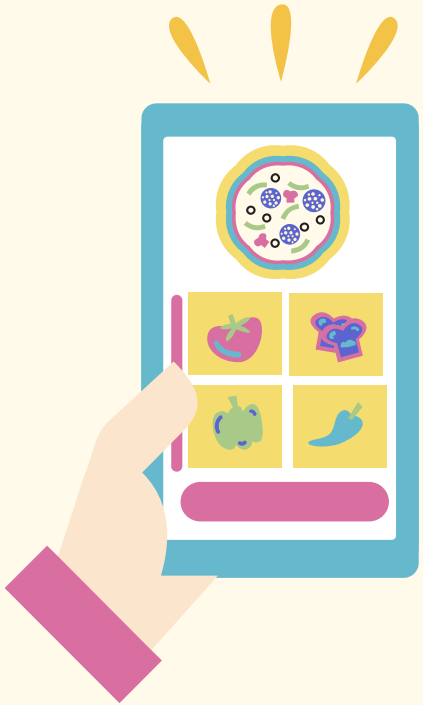
30%

Commission proportion for the orders without the new service

29%

Commission proportion for the orders with the new service

Higher Delivery Costs

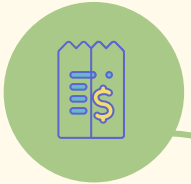


Delivery Cost: includes all the costs

11 Euros

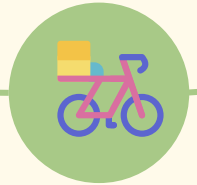
On average each order with the new service has a delivery cost of 11 Euros whereas the orders without the new system has an average delivery cost of 9 Euros.

Costs



Delivery Costs

On average the orders with the new service costs 2 Euros more



Delivery Distance

The orders with the new service is delivered to more distant areas (on average 2000 meters distant)

Delivery Time

The orders with the new service is delivered later (on average 9 minutes later)

04
Profits

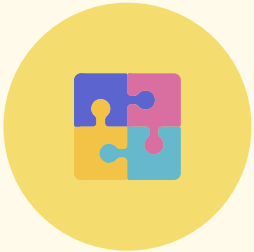
Profit= Income - Delivery Cost

-1 Euros

On average the company makes loss of 1 Euros at each order regardless of the new service usage.

05 Policy Suggestions

Findings



Challenges

Lower commission rate
Higher delivery costs
No additional profit

Benefits

Higher income
Higher food price

Suggestions

Charge higher commission rate
Charge higher delivery fee
Reduce delivery cost
Set a minimum price for the orders

Never stop investing.
Never stop improving.
Never stop doing something new.
Bob Parsons

Thank you!

Do you have any questions?
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