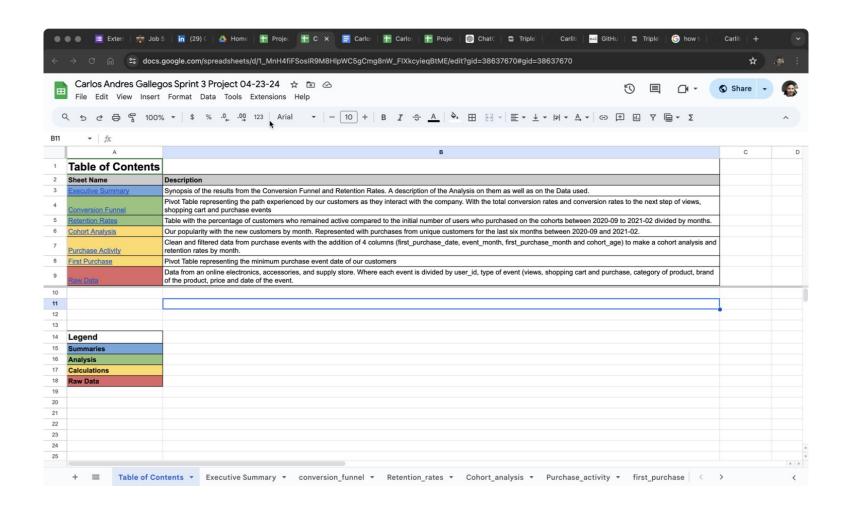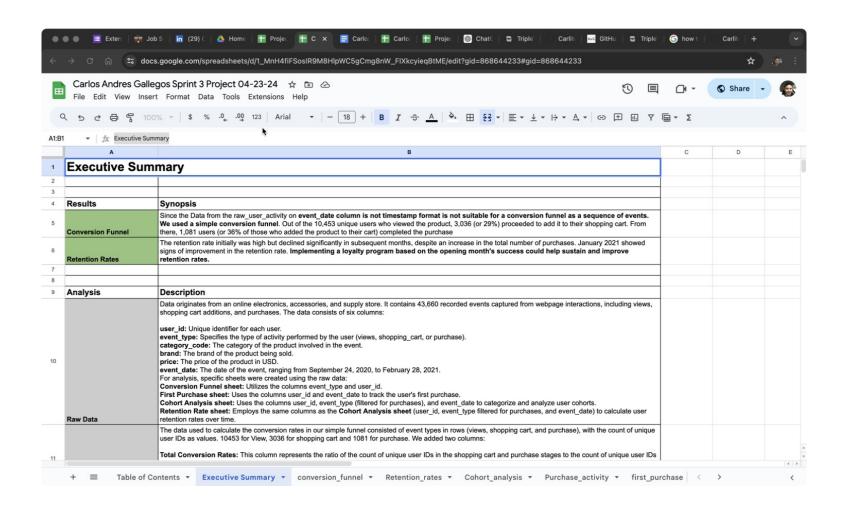# Business Analytics Project for e-commerce company

Carlos Gallegos
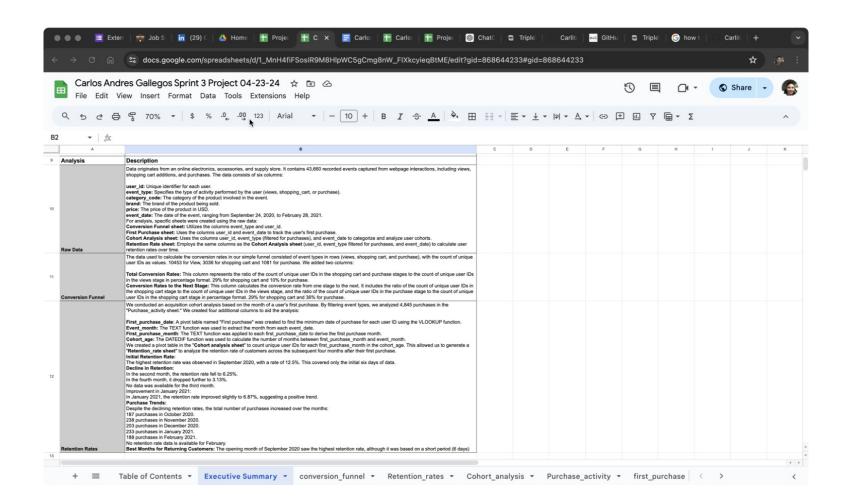
Table of Contents

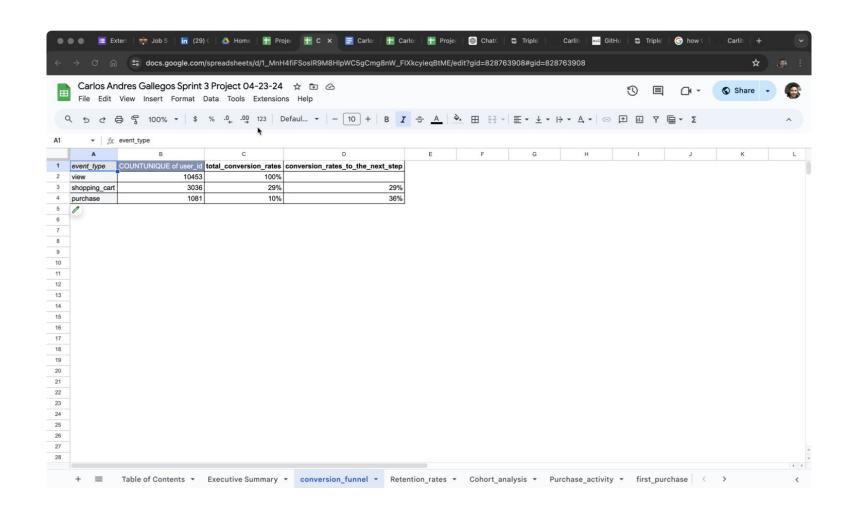# Executive Summary

Analysis

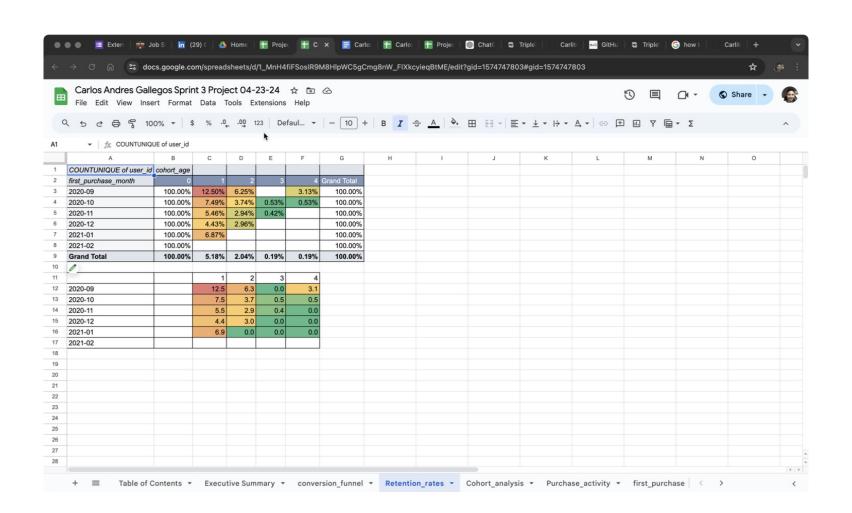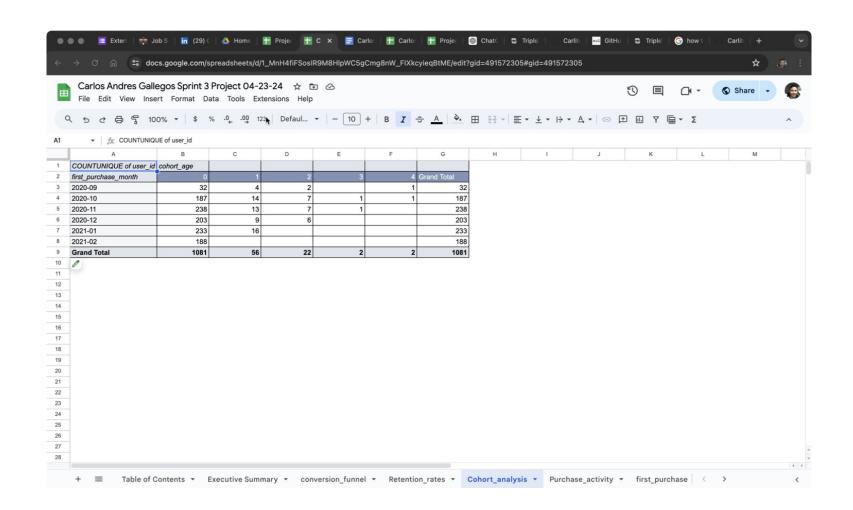Carlos Andres Gallegos Sprint 3 Project 04-23-24

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	A	B
9	Analysis	Description
10	Raw Data	Data originates from an online electronics, accessories, and supply store. It contains 43,660 recorded events captured from webpage interactions, including views, shopping cart additions, and purchases. The data consists of six columns: user_id: Unique identifier for each user. event_type: Specifies the type of activity performed by the user (views, shopping_cart, or purchase). category_code: The category of the product involved in the event. brand: The brand of the product being sold. price: The price of the product in USD. event_date: The date of the event, ranging from September 24, 2020, to February 28, 2021. For analysis, specific sheets were created using the raw data: Conversion Funnel sheet: Utilizes the columns event_type and user_id. First Purchase sheet: Uses the columns user_id and event_date to track the user's first purchase. Cohort Analysis sheet: Uses the columns user_id, event_type (filtered for purchases), and event_date to categorize and analyze user cohorts. Retention Rate sheet: Employs the same columns as the Cohort Analysis sheet (user_id, event_type filtered for purchases, and event_date) to calculate user retention rates over time.
11	Conversion Funnel	The data used to calculate the conversion rates in our simple funnel consisted of event types in rows (views, shopping cart, and purchase), with the count of unique user IDs as values. 10453 for View, 3036 for shopping cart and 1081 for purchase. We added two columns: Total Conversion Rates: This column represents the ratio of the count of unique user IDs in the shopping cart and purchase stages to the count of unique user IDs in the views stage in percentage format. 29% for shopping cart and 10% for purchase. Conversion Rates to the Next Stage: This column calculates the conversion rate from one stage to the next. It includes the ratio of the count of unique user IDs in the shopping cart stage to the count of unique user IDs in the views stage, and the ratio of the count of unique user IDs in the purchase stage to the count of unique user IDs in the shopping cart stage in percentage format. 29% for shopping cart and 36% for purchase.
12	Retention Rates	We conducted an acquisition cohort analysis based on the month of a user's first purchase. By filtering event types, we analyzed 4,845 purchases in the "Purchase_activity sheet." We created four additional columns to aid the analysis: First_purchase_date: A pivot table named "First purchase" was created to find the minimum date of purchase for each user ID using the VLOOKUP function. Event_month: The TEXT function was used to extract the month from each event_date. First_purchase_month: The TEXT function was applied to each first_purchase_date to derive the first purchase month. Cohort_age: The DATEDIF function was used to calculate the number of months between first_purchase_month and event_month. We created a pivot table in the "Cohort analysis sheet" to count unique user IDs for each first_purchase_month in the cohort_age. This allowed us to generate a "Retention_rate sheet" to analyze the retention rate of customers across the subsequent four months after their first purchase. Initial Retention Rate: The highest retention rate was observed in September 2020, with a rate of 12.5%. This covered only the initial six days of data. Decline in Retention: In the second month, the retention rate fell to 6.25%. In the fourth month, it dropped further to 3.13%. No data was available for the third month. Improvement in January 2021: In January 2021, the retention rate improved slightly to 6.87%, suggesting a positive trend. Purchase Trends: Despite the declining retention rates, the total number of purchases increased over the months: 187 purchases in October 2020. 238 purchases in November 2020. 203 purchases in December 2020. 233 purchases in January 2021. 188 purchases in February 2021. No retention rate data is available for February. Best Months for Returning Customers: The opening month of September 2020 saw the highest retention rate, although it was based on a short period (6 days)

Table of Contents | Executive Summary | conversion_funnel | Retention_rates | Cohort_analysis | Purchase_activity | first_purchase

conversion_funnel

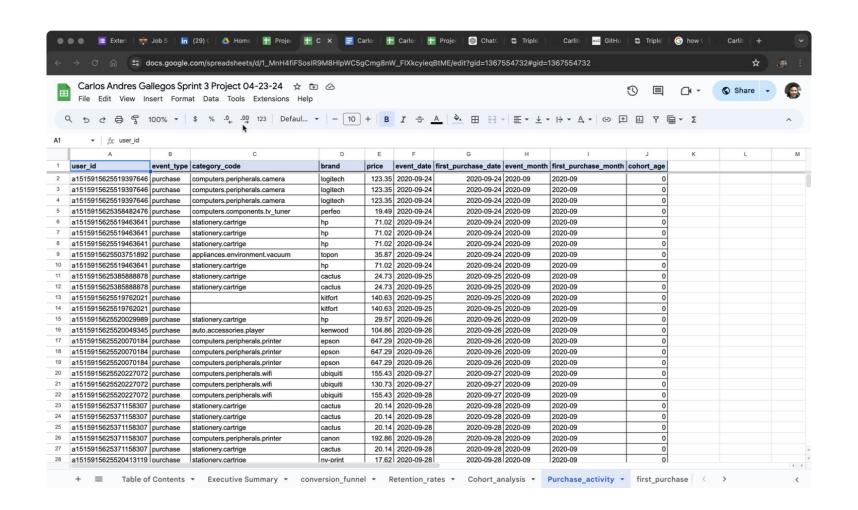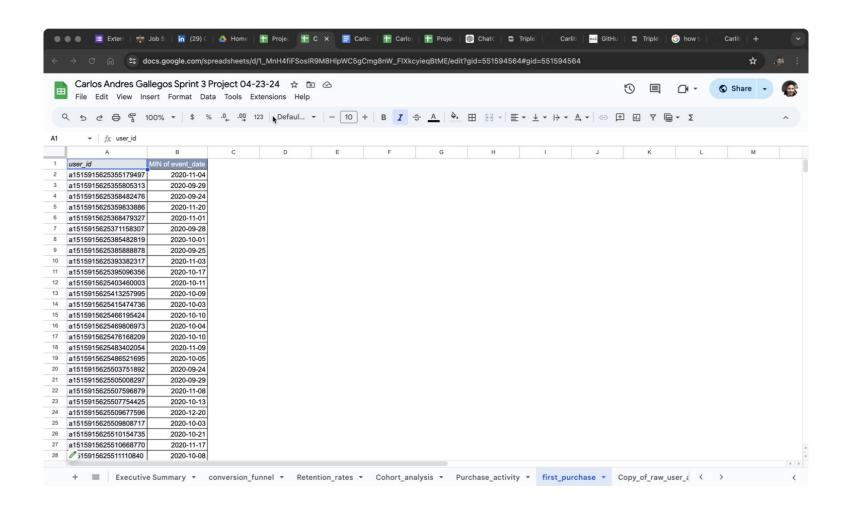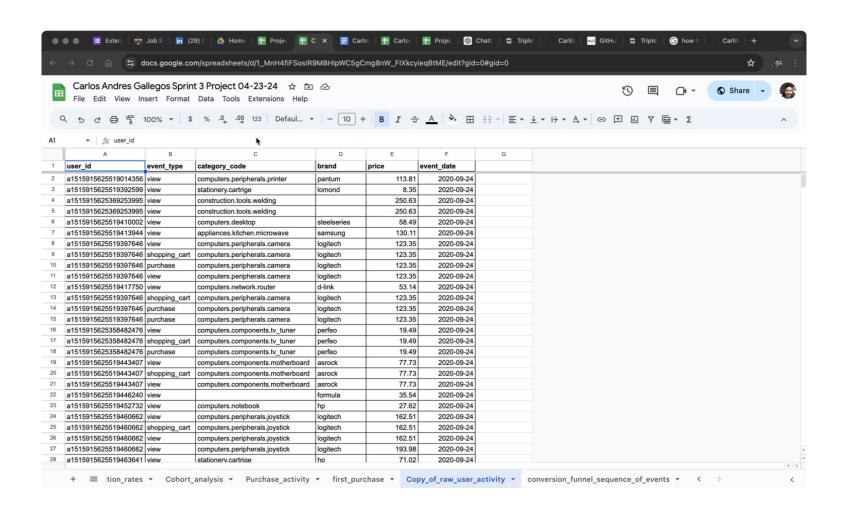| event_type	COUNTUNIQUE of user_id	total_conversion_rates	conversion_rates_to_the_next_step
view	10453	100%	
shopping_cart	3036	29%	29%
purchase	1081	10%	36%

Retention_rates

Cohort_analysis

Purchase_activity

first_purchase

Copy_of_raw_user_activity

conversion_funnel_sequence_of_events