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Usage Funnels with Warby Parker

Learn SQL from Scratch

Kayla Kipps

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Table of Contents

1. Get familiar with Warby Parker

1.1 Select all columns from the first 10 rows. What columns does the table have?

```
1   --Quiz Funnel
2
3   SELECT *
4   FROM survey
5   LIMIT 10;
```

Question	user_id	response
TEXT	TEXT	TEXT

- The *survey* table contains three columns: question, user_id, and response. Each row represents a user_id's response to one of five questions that are asked by Warby Parker during their "Style Quiz." This table holds each of the responses that Warby Parker receives.

2. What is the Quiz Funnel?

2.1 Analyze how many users move from Question 1 to Question 2, etc. in the quiz. *What is the number of responses for each question?*

From this query, we can tell:

- Question 1: 500 responses
- Question 2: 475 responses
- Question 3: 380 responses
- Question 4: 361 responses
- Question 5: 270 responses

question	Count of Survey Responses
1. What are you looking for?	500
2. What's your fit?	475
3. Which shapes do you like?	380
4. Which colors do you like?	361
5. When was your last eye exam?	270

```
-- 2. Quiz Funnel

SELECT question,
    COUNT(DISTINCT user_id) AS 'Count of Survey
    Responses'
FROM survey
GROUP BY question
ORDER BY question;
```

2.2 Which question(s) of the quiz have a lower completion rate? What do you think is the reason?

question	Count of Survey Responses	Completion Rate
1. What are you looking for?	500	100%
2. What's your fit?	475	95%
3. Which shapes do you like?	380	80%
4. Which colors do you like?	361	95%
5. When was your last eye exam?	270	75%

Completion rate is calculated by dividing the number of people completing each step by the number of people completing the previous step (i.e. 475/500 = 0.95/ 95%).

From this calculation, we can tell:

- Question 3 (80%) and question 5 (75%) have the lowest completion rates.
- **Question 3 –** This may stump people who may be unaware or unsure of what shapes they would like in their frames.
- **Question 5 –** This probably stops people because they either do not remember or think that they may be disqualified from the service if their eye exams are out of date.

```
-- 2. Quiz Funnel

SELECT question,
    COUNT(DISTINCT user_id) AS 'Count of Survey
    Responses'
FROM survey
GROUP BY question
ORDER BY question;
```

3. A/B Testing with Home Try-On Funnel

3.1 Let’s find out whether or not users who get more pairs to try on at home will be more likely to make a purchase.

Examine the first 5 rows of each table. What are the column names?

quiz

user_id	style	fit	shape	color
TEXT	TEXT	TEXT	TEXT	TEXT

home_try_on

user_id	number_of_pairs	address
TEXT	TEXT	TEXT

purchase

user_id	product_id	style	model_name	color	price
TEXT	INTEGER	TEXT	TEXT	TEXT	INTEGER

```
-- 4. Home Try-On Funnel

SELECT *
FROM quiz
LIMIT 5;

SELECT *
FROM home_try_on
LIMIT 5;

SELECT *
FROM purchase
LIMIT 5;
```

3.2 Let’s make a new table with information from the quiz, home_try_on, and purchase tables using LEFT JOINS.

Select only the first ten rows. If the user has any entries in home_try_on, then is_home_try_on will be ‘True.’ number_of_pairs comes from home_try_on. If the user has any entries in is_purchase, then is_purchase will be ‘True.’

user_id	Is_home_try_on	number_of_pairs	is_purchase
4e8118dc-bb3d-49bf-85fc-cca8d83232ac	1	3 pairs	0
291f1cca-e507-48be-b063-002b14906468	1	3 pairs	1
75122300-0736-4087-b6d8-c0c5373a1a04	0	0	0
75bc6ebd-40cd-4e1d-a301-27ddd93b12e2	1	5 pairs	0
ce965c4d-7a2b-4db6-9847-601747fa7812	1	3 pairs	1
28867d12-27a6-4e6a-a5fb-8bb5440117ae	1	5 pairs	1
5a7a7e13-fbcf-46e4-9093-79799649d6c5	0	0	0
0143cb8b-bb81-4916-9750-ce956c9f9bd9	0	0	0
a4ccc1b3-cbb6-449c-b7a5-03af42c97433	1	5 pairs	0
b1dded76-cd60-4222-82cb-f6d464104298	1	3 pairs	0

```
-- 5. Home Try-On Funnel

SELECT DISTINCT quiz.user_id, home_try_on.user_id IS
NOT NULL AS ‘is_home_try_on’,
home_try_on.number_of_pairs, purchase.user_id IS NOT
NULL AS ‘is_purchase’
FROM quiz
LEFT JOIN home_try_on
     ON quiz.user_id = home_try_on.user_id
LEFT JOIN purchase
     ON purchase.user_id = quiz.user_id
LIMIT 10;
```

3.3 What are some actionable insights for Warby Parker?

We can calculate the difference in **purchase rates** between customers who had **3 number_of_pairs** with ones who had **5.**

number_of_pairs	num_quiz	num_Try_On	num_purchase	quiz_to_try_on	try_on_to_purchase
Ø	250	0	0	0.0	Ø
3 pairs	379	379	201	1.0	0.530343007915567
5 pairs	371	371	294	1.0	0.792452830188679

This query allowed my to calculate the difference in purchase rates between customers who had 3 number_of_pairs with ones who had 5.

The results told me that users who tried on 3 pairs of glasses purchased 53% of the time. Users who tried on 5 pairs of glasses purchased 79% of the time.

Users who have more options of frames to try on are more likely to make a purchase.

Warby Parker should use this information to encourage users to try on 5 pairs of glasses rather than 3 pairs in order to boost sales.

```
WITH funnels AS (
  SELECT DISTINCT quiz.user_id,
  home_try_on.user_id IS NOT NULL AS 'is_home_try_on',
  home_try_on.number_of_pairs, purchase.user_id IS NOT
NULL AS 'is_purchase'
FROM quiz
LEFT JOIN home_try_on
            ON quiz.user_id = home_try_on.user_id
LEFT JOIN purchase
            ON purchase.user_id = quiz.user_id
)
SELECT number_of_pairs, COUNT(*) AS 'num_quiz',
            SUM(is_home_try_on) AS 'num_Try_On',
  SUM(is_purchase) AS 'num_purchase',
  1.0 * SUM(is_home_try_on) / COUNT(user_id) AS
'quiz_to_try_on',
  1.0 * SUM(is_purchase) / SUM(is_home_try_on) AS
'try_on_to_purchase'
FROM funnels
GROUP BY number_of_pairs
ORDER BY number_of_pairs;
```

3.3 What are some actionable insights for Warby Parker?

What about which colors and/or styles were more popular for purchase?

style
Women's Styles
Men's Styles
model_name
Lucy
Dawes
Eugene Narrow
Brady
Monocle
Olive

From these queries we are able to list out the distinct styles and model_names from the purchase table.

```
SELECT DISTINCT style
FROM purchase;

SELECT DISTINCT model_name
FROM purchase;
```

3.3 What are some actionable insights for Warby Parker?

What about which models and styles were more popular for purchase?

style	COUNT(*)
Women's Styles	252
Men's Styles	243

model_name	COUNT(*)
Eugene Narrow	116
Dawes	107
Brady	95
Lucy	86
Olive	50
Monocle	41

Knowing which styles and model_names are being purchased, we can now examine which styles and models are most popular in the purchase table.

Women's Styles outnumber Men's Style, but not by much, so no action should be required there marketing or design wise.

Eugene Narrow is the most popular model. Perhaps these should be highlighted in advertising for Warby Parker. Olive and Monocle fall to the bottom of the list. These models may need a targeted marketing campaign, or a redesign in order to be better sellers.

```
SELECT DISTINCT color
FROM purchase;

SELECT DISTINCT style
FROM purchase;

SELECT style, COUNT(*)
FROM purchase
GROUP BY style
ORDER BY COUNT(*) desc;

SELECT model_name, COUNT(*)
FROM purchase
GROUP BY model_name
ORDER BY COUNT(*) desc;
```

3.3 What are some actionable insights for Warby Parker?

We can calculate the **most common results of the style quiz.**

style	COUNT(*)
Women's Styles	469
Men's Styles	432
I'm not sure. Let's skip it.	99

color	COUNT(*)
Tortoise	292
Black	280
Crystal	210
Neutral	114
Two-Tone	104

fit	COUNT(*)
Narrow	408
Medium	305
Wide	198
I'm not sure. Let's skip it.	89

shape	COUNT(*)
Rectangular	397
Square	326
Round	180
No Preference	97

```
SELECT style, COUNT(*)
FROM quiz
GROUP BY style
ORDER BY COUNT(*) desc;

SELECT color, COUNT(*)
FROM quiz
GROUP BY color
ORDER BY COUNT(*) desc;

SELECT fit, COUNT(*)
FROM quiz
GROUP BY fit
ORDER BY COUNT(*) desc;

SELECT shape, COUNT(*)
FROM quiz
GROUP BY shape
ORDER BY COUNT(*) desc;
```

These queries can help us determine which results from the quiz were the most popular among the users.

Women’s Styles were more popular than Men’s Styles, aligning with the purchase trends as well.

Tortoise and Black are the most popular colors. Narrow is by far the most popular fit, and rectangular and square are the most popular shapes for frames.

3.3 What are some actionable insights for Warby Parker?

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No Preference	97

```
SELECT style, COUNT(*)
FROM quiz
GROUP BY style
ORDER BY COUNT(*) desc;

SELECT color, COUNT(*)
FROM quiz
GROUP BY color
ORDER BY COUNT(*) desc;

SELECT fit, COUNT(*)
FROM quiz
GROUP BY fit
ORDER BY COUNT(*) desc;

SELECT shape, COUNT(*)
FROM quiz
GROUP BY shape
ORDER BY COUNT(*) desc;
```

This data can help Warby Parker align their inventory with what their users are telling them that they want.

They should continue providing an even amount of men and women style frames.

Because narrow is their most popular fit result, Warby Parker should work on designing more and more frames for this fit to match demand. The same goes for rectangular and square frames.

3.3 What are some actionable insights for Warby Parker?

We can compare conversion from quiz -> home_try_on and home_try_on -> purchase.

Query Results

num_browse	num_try_on	num_purchase	% browse to try on	% try on to purchase
1000	750	495	0.75	0.66

This query allowed myself to build a funnel from multiple tables in order to look out for some trends for Warby Parker users.

From this query I am able to determine that 75% of Warby Parker users decided to try-on after taking the quiz. Of those 75%, 66% went on to purchase glasses once they tried them on.

While 75% is a good number for amount of users who try-on, Warby Parker should work on their campaign in order to boost those numbers so that the eventual purchases will go up since they seem directly related. I think a promotion could occur where users who 'try-on' get a discount. This tied in with the incentive to try on 5 pairs could work very well and could boost purchases.

```
--6. Home Try-On Funnel
WITH funnels AS (
  SELECT DISTINCT quiz.user_id,
  home_try_on.user_id IS NOT NULL AS 'is_home_try_on',
  home_try_on.number_of_pairs, purchase.user_id IS NOT
NULL AS 'is_purchase'
FROM quiz
LEFT JOIN home_try_on
            ON quiz.user_id = home_try_on.user_id
LEFT JOIN purchase
            ON purchase.user_id = quiz.user_id
)
SELECT COUNT(*) AS 'num_browse',
            SUM(is_home_try_on) AS 'num_try_on',
  SUM(is_purchase) AS 'num_purchase', 1.0 *
SUM(is_home_try_on) / COUNT(user_id) AS '% browse to
try on', 1.0 * SUM(is_purchase) / SUM(is_home_try_on)
AS '% try on to purchase'
FROM funnels;
```

That’s all. Thanks!