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Funnels with Warby Parker

Learn SQL from Scratch: Capstone

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Outline

1. Quiz Funnel
2. A/B Testing with Home Try-On Funnel
3. Warby Parker Online Survey Results

1. Quiz Funnel

1.1 Quiz Funnel: Answer to Question 1

Survey table has three columns:

1. question
2. user_id
3. responses

question	user_id	response
1. What are you looking for?	005e7f99-d48c-4fce-b605-10506c85aaf7	Women's Styles
2. What's your fit?	005e7f99-d48c-4fce-b605-10506c85aaf7	Medium
3. Which shapes do you like?	00a556ed-f13e-4c67-8704-27e3573684cd	Round
4. Which colors do you like?	00a556ed-f13e-4c67-8704-27e3573684cd	Two-Tone
1. What are you looking for?	00a556ed-f13e-4c67-8704-27e3573684cd	I'm not sure. Let's skip it.
2. What's your fit?	00a556ed-f13e-4c67-8704-27e3573684cd	Narrow
5. When was your last eye exam?	00a556ed-f13e-4c67-8704-27e3573684cd	<1 Year
3. Which shapes do you like?	00bf9d63-0999-43a3-9e5b-9c372e6890d2	Square
5. When was your last eye exam?	00bf9d63-0999-43a3-9e5b-9c372e6890d2	<1 Year
2. What's your fit?	00bf9d63-0999-43a3-9e5b-9c372e6890d2	Medium

```
SELECT *
FROM survey
LIMIT 10;
```

1.2 Quiz Funnel: Answer to Question 2

question	COUNT(DISTINCT user_id)
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

```
SELECT question,
 COUNT(DISTINCT user_id)
FROM survey
 GROUP BY question;
```

1.3 Quiz Funnel: Answer to Question 3

Number	Question	Completion rate	Notes
1.	What are you looking for?	100%	Highest completion rate
2.	What's your fit?	95%	High completion rate
3.	**Which shapes do you like?**	**80%**	**Low completion rate**
4.	Which colors do you like?	95%	High completion rate
5.	**When was your last eye exam?**	**75%**	**Lowest completion rate**

Why do questions 3 and 5 have lower response rates?

Question 3: Which shapes do you like?

People taking this survey appear to have stronger feelings about glasses color and fit than shape.

Question 5: When was your last eye exam?

This can be difficult to recall. Also, it is a more intimate/sensitive question than those about a person's style preferences, and may not seem as relevant to finding the right pair glasses as the other questions in the survey.

1.4 Quiz Funnel: Answer to Question 5 – Create a new table

Quiz table columns: user_id, style, fit, shape, color
Home try on table columns: user_id, number_of_pairs, address
Purchase table columns: user_id, product_id, style, model_name, color, price
Each table has a ‘user_id’ variable that can be used to link, or join, tables.
In the bottom query, I selected 4 variables and dropped any null values from ‘is_home_try_on’ and ‘is_purchase’. Then used a left join to join the tables on ‘user_id’, the variable that is consistent across all three tables.

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
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
0143cb8b-bb81-4916-9750-ce956c9f9bd9	0		0
a4ccc1b3-cbb6-449c-b7a5-03af42c97433	1	5 pairs	0
b1dded76-cd60-4222-82cb-f6d464104298	1	3 pairs	0

```
SELECT *
FROM quiz
LIMIT 5;

SELECT *
FROM home_try_on
LIMIT 5;

SELECT *
FROM purchase
LIMIT 5;

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

2. A/B Testing with Home Try-On

2.1 Answer to Question 6

In this section, I created a temporary table called funnels and used that table to select the number of quizzes completed, number that moved to the Try-On phase and finally the number that purchased glasses.

Num_quiz = 1,000
Num_try_on = 750
Num_purchase = 495

Overall:

- 75% of quiz takers moved to the Try-On phase
- 66% of the 750 who moved to the Try-On phase purchased glasses

```
WITH funnels AS (
SELECT DISTINCT q.user_id,
  h.user_id IS NOT NULL AS 'is_home_try_on',
  h.number_of_pairs,
  p.user_id IS NOT NULL AS 'is_purchase'
FROM quiz as 'q'
LEFT JOIN home_try_on as 'h'
  ON q.user_id = h.user_id
LEFT JOIN purchase as 'p'
  ON q.user_id = p.user_id)

SELECT COUNT(*) AS 'num_quiz',
   SUM(is_home_try_on) AS 'num_try_on',
   SUM(is_purchase) AS 'num_purchase'
FROM funnels;
```

2.2 Answer to Question 6, cont'd - Comparing 3 vs 5 glasses

750 people took the quiz and received glasses to try on

- 379, or 50.5% received 3 pairs of glasses and 53% of them ended up purchasing a pair
- 379, or 49.5% received 5 pairs of glasses and 79% of them ended up purchasing a pair

The other 250 people took the quiz but did not move to the try-on phase.

number_of_pairs	num_quiz	num_try_on	num_purchase
3 pairs	379	379	201
5 pairs	371	371	294

```
WITH funnels AS (
SELECT DISTINCT q.user_id,
            h.user_id IS NOT NULL AS
'is_home_try_on',
  h.number_of_pairs,
  p.user_id IS NOT NULL AS 'is_purchase'
FROM quiz as 'q'
LEFT JOIN home_try_on as 'h'
            ON q.user_id = h.user_id
LEFT JOIN purchase as 'p'
            ON q.user_id = p.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'
FROM funnels
WHERE number_of_pairs IS NOT NULL
GROUP BY number_of_pairs
;
```

Recommendation

Only 50% of customers who received 3 pairs of glasses to try on purchased, compared with 79% of customers who received 5 pairs of glasses. Sending 5 pairs of glasses resulted in the number of purchases increasing by almost 50%.

Warby Parker should send 5 pairs of glasses for customers to try on.

3. Warby Parker Online Survey Results

3.1 Summary of Quiz Results (n=1,000)

1. Fit: The most popular fit was Narrow at 40.8% of survey respondents, followed by Medium (30.5%), Wide (19.8%) and skipped (8.9%)

2. Style: Slightly more respondents were looking for Women's Styles (46.9%) than Men's Styles (43.2%), with 9.9% skipping this question.

3. Shape: More respondents chose Rectangular (39.7%), followed by Square (32.6%), Round (18.0%) and No preference (9.7%)

4. Color: The most popular color was Tortoise (29.2%), followed by Black (28.0%), Crystal (21.0%), Neutral (11.4%) and Two-tone (10.4%)

3.2 Summary of Purchases (n=495)

1. Style: About the same number of Women's Styles (252, 50.9%) and Men's Styles (243, 49.1%) were purchased.

2. Model: Most popular style purchased was Eugene Narrow (23.4%), followed by Dawes (21.6%) and Brady (19.2%).

- Top model among Men's Styles was Dawes
- Top model among Women's Styles was Eugene Narrow

3. Color: The most popular color purchased was Jet Black (17.4%), followed by Driftwood Fade (12.7%) and Rosewood Tortoise (12.5%). The top two colors:

- Among Men's Styles (n=243): Driftwood Fade (25.9%) and Layered Tortoise Matte (21.4%)
- Among Women's Styles (n=252): Rosewood Tortoise (25.0%) and Rose Crystal (21.4%)

4. Price: Average price of glasses sold was $112.72

- Among Men's Styles: 107 glasses were sold at $150, 95 glasses at $95 and 41 glasses at $50 (average price of $111.63).
- Among Women's Styles: 166 glasses were sold at $95 and 86 glasses at $150 (average price of $113.77)