



Funnels with Warby Parker

Learn SQL from Scratch

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1. Get Familiar with Warby Parker: Quiz Funnel

1.1 What columns does the table have?

- The columns in the **survey** table are:
question, user_id, and response

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

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

1.2 What is the number of responses for each question?

- There were 500 responses for question #1 (What are you looking for?), 475 responses for question #2 (What's your fit?), 380 responses for question #3 (Which shapes do you like?), 361 responses for question #4 (Which colors do you like?), and 270 responses for question #5 (When was your last eye exam?)

```
SELECT question, COUNT response)
FROM survey
GROUP BY 1;
```

Question	Number of 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

1.3 What question(s) of the quiz have a lower completion rate?

What do you think is the reason?

Questions #3 (Which shapes do you like?) and #5 (When was your last eye exam?) had the lowest completion rates at 80% and 75% respectively. After going through the survey myself, the possible reasons for the lower completion rates include:

- For Question #3 – The survey allows the respondent to skip the question by choosing “No preference.” Respondents that skipped the question, most likely didn’t know what specific frame they were interested in or maybe didn’t know what frames Warby Parker had to offer so wanted to Warby Parker to suggest some frame shapes for them.
- For Question #5 – Respondents who skipped the question most likely didn’t remember when their last eye exam was (and maybe didn’t have the time to go back and look) so chose “I’m not sure. Let’s skip it.”

Question	Number of 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%

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

2.1 What are the column names?

- For the **quiz** table, the columns are: user_id, style, fit, shape, and color
- For the **home_try_on** table, the columns are: user_id, number_of_pairs, and address
- For the **purchase** table, the columns are: user_id, product_id, style, model_name, color, and price

```
SELECT *  
FROM quiz  
LIMIT 5;
```

```
SELECT *  
FROM home_try_on  
LIMIT 5;
```

```
SELECT *  
FROM purchase  
LIMIT 5;
```

Quiz

user_id	style	fit	shape	color
4e8118dc-bb3d-49bf-85fc-cca8d83232ac	Women's Styles	Medium	Rectangular	Tortoise
291f1cca-e507-48be-b063-002b14906468	Women's Styles	Narrow	Round	Black
75122300-0736-4087-b6d8-c0c5373a1a04	Women's Styles	Wide	Rectangular	Two-Tone
75bc6ebd-40cd-4e1d-a301-27dd93b12e2	Women's Styles	Narrow	Square	Two-Tone
ce965c4d-7a2b-4db6-9847-601747fa7812	Women's Styles	Wide	Rectangular	Black

Home_try_on

user_id	number_of_pairs	address
d8add87-3217-4429-9a01-d56d68111da7	5 pairs	145 New York 9a
f52b07c8-abe4-4f4a-9d39-ba9fc9a184cc	5 pairs	383 Madison Ave
8ba0d2d5-1a31-403e-9fa5-79540f8477f9	5 pairs	287 Pell St
4e71850e-8bbf-4e6b-acc4-49a7bb46c586	3 pairs	347 Madison Square N
3bc8f97f-2336-4dab-bd86-e391609dab97	5 pairs	182 Cornelia St

Purchase

user_id	product_id	style	model_name	color	price
00a9dd17-36c8-430c-9d76-df49d4197dcf	8	Women's Styles	Lucy	Jet Black	150
00e15fe0-c86f-4818-9c63-3422211baa97	7	Women's Styles	Lucy	Elderflower Crystal	150
017506f7-aba1-4b9d-8b7b-f4426e71b8ca	4	Men's Styles	Dawes	Jet Black	150
0176bfb3-9c51-4b1c-b593-87edab3c54cb	10	Women's Styles	Eugene Narrow	Rosewood Tortoise	95
01fdf106-f73c-4d3f-a036-2f3e2ab1ce06	8	Women's Styles	Lucy	Jet Black	150

2.2 Creating a new table using LEFT JOIN

```
SELECT DISTINCT q.user_id,  
CASE  
  WHEN (h.user_id IS NOT NULL)  
    THEN 'True'  
    ELSE 'False'  
END AS 'is_home_try_on',  
h.number_of_pairs,  
CASE  
  WHEN (p.user_id IS NOT NULL)  
    THEN 'True'  
    ELSE 'False'  
END 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 p.user_id = q.user_id  
LIMIT 10;
```

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

2.3 Are users who get more pairs to try on at home more likely to make a purchase?

Yes. Based on the results of our A/B test, we see the the control group (control_try_on and control_purchase; contains users who received 5 pairs of glasses to try on) had a conversion rate of 79%, while the variant group (variant_try_on and variant_purchase; contains users who received 3 pairs of glasses to try on) had a conversion rate of 53%.

This could be due to the fact that with a higher number of glasses to try on, the probability of someone finding a pair of glasses they like, and therefore want to purchase, is higher.

control_try_on (5 pairs)	control_purchase	Conversion Rate
371	294	79%

variant_try_on (3 pairs)	variant_purchase	Conversion Rate
379	201	53%

```
WITH browse_funnel 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 p.user_id = q.user_id  
)  
SELECT  
  COUNT(CASE WHEN number_of_pairs = '5 pairs' THEN  
    number_of_pairs END) AS 'control_try_on',  
  COUNT (CASE WHEN number_of_pairs = '5 pairs' AND  
    is_purchase = 1 THEN user_id END) AS  
    'control_purchase',  
  COUNT (CASE WHEN number_of_pairs = '3 pairs' THEN  
    number_of_pairs END) AS 'variant_try_on',  
  COUNT (CASE WHEN number_of_pairs = '3 pairs' AND  
    is_purchase = 1 THEN user_id END) AS  
    'variant_purchase'  
FROM browse_funnel;
```

3. Actionable Insights: Purchases

3.1 Purchase Insights

- **What is the overall conversion rate from quiz to purchase?** The overall conversion rate is 45%.

num_quiz	num_home_try_on	num_purchase	Overall Conversion Rate
1000	750	495	45%

```
WITH browse_funnel 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 p.user_id = q.user_id)  
SELECT COUNT (user_id) AS 'num_quiz',  
  SUM (is_home_try_on) AS 'num_home_try_on',  
  SUM(is_purchase) AS 'num_purchase'  
FROM browse_funnel;
```

3.2 Purchase Insights

- How many purchases were there? There were 495 purchases (252 Women's Styles, 243 Men's Styles).

```
SELECT COUNT (user_id)
FROM purchase;

SELECT COUNT (style)
FROM purchase
WHERE style LIKE 'Women%';

SELECT COUNT (style)
FROM purchase
WHERE style LIKE 'Men%';
```

- What was the most purchased model overall? Eugene Narrow with 116 purchases.

model_name	number_of_purchases
Eugene Narrow	116
Dawes	107
Brady	95
Lucy	86
Olive	50

```
SELECT model_name,
       COUNT (model_name) AS 'number_of_purchases'
FROM purchase
GROUP BY 1
ORDER BY 2 DESC;
```

3.3 Purchase Insights – Cont.

- **What was the most purchased model & color when it comes to Women's Styles?** Eugene Narrow in Rosewood Tortoise was the most purchased model and color in Women's Styles with 62 purchases. Recommendation is to highlight this model & color on the Warby Parker website with a "Customer Favorite" or "Best Selling" tag if additional data not shown in the sample dataset supports this finding.
- **What was the least popular model and color?** Lucy in Jet Black was the least popular model and color for Women's Styles with 42 purchases. If Warby Parker was looking to make room for a new product by getting rid of a lower performing model, I would recommend discontinuing this model and color based on this dataset.

model_name	color	number_of_purchases
Eugene Narrow	Rosewood Tortoise	62
Eugene Narrow	Rose Crystal	54
Olive	Pearled Tortoise	50
Lucy	Elderflower Crystal	44
Lucy	Jet Black	42

```
SELECT model_name, color, COUNT (model_name)AS
'number_of_purchases'
FROM purchase
WHERE style LIKE 'Women%'
GROUP BY 2
ORDER BY 3 DESC;
```

- **What was the most purchased model & color when it comes to Men's Styles?** Dawes in Driftwood Fade was the most purchased model and color in Men's Styles with 63 purchases. Similar to the recommendation for the most popular Women's Style, consider highlighting this popular model and color on website with a tag of either "Customer Favorite" or "Best Selling" if additional data supports this finding.
- **What was the least popular model and color?** Monocle in Endangered Tortoise was the least popular model and color for Men's Styles with 41 purchases. Based on this dataset and similar to my recommendation for Women's Styles, I would recommend the Monocle in Endangered Tortoise if Warby Parker was looking to discontinue a product.

model_name	color	number_of_purchases
Dawes	Driftwood Fade	63
Brady	Layered Tortoise Matte	52
Dawes	Jet Black	44
Brady	Sea Glass Gray	43
Monocle	Endangered Tortoise	41

```
SELECT model_name, color, COUNT (model_name)AS
'number_of_purchases'
FROM purchase
WHERE style LIKE 'Men%'
GROUP BY 2
ORDER BY 3 DESC;
```