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Usage Funnels with Warby Parker

Learn SQL from Scratch

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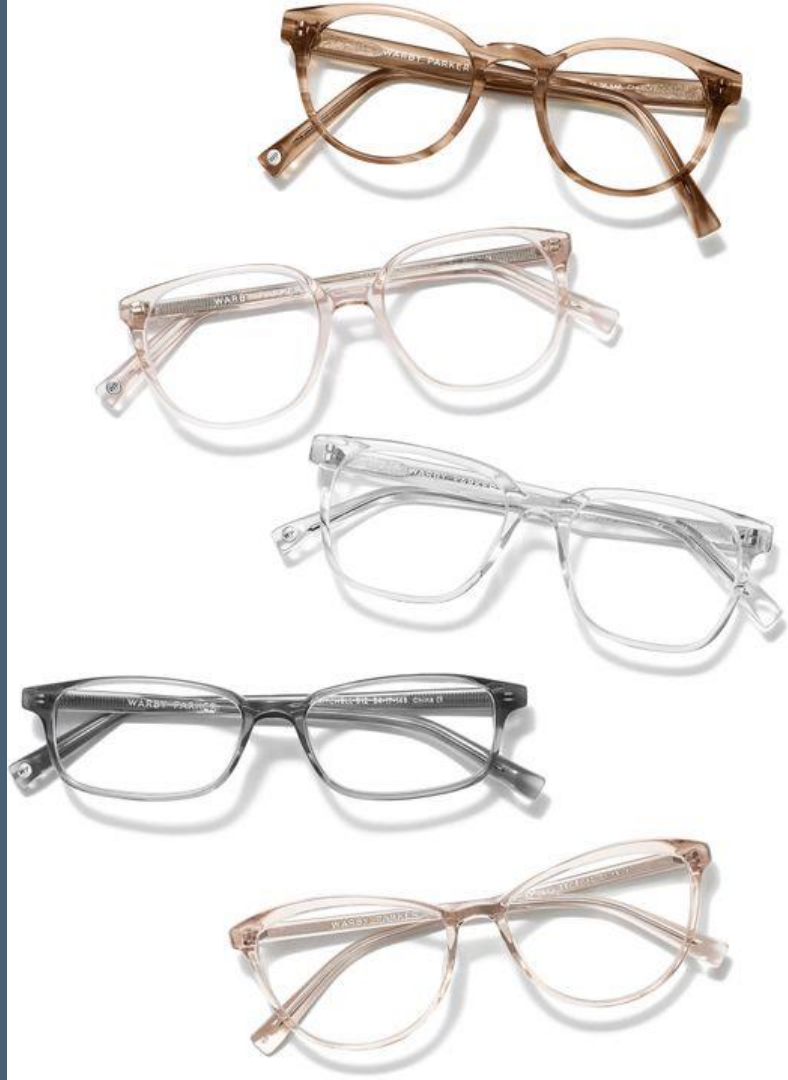
1. Get familiar with Warby Parker



1.1 Get familiar with Warby Parker

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

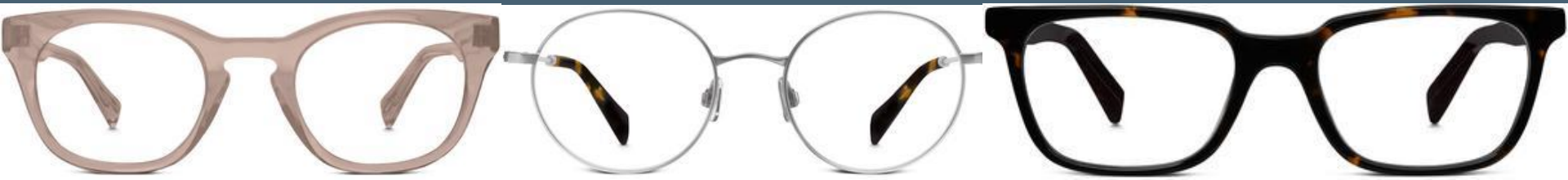
Let’s see how Warby Parker helps new customers choose the perfect frame. Their “Style Quiz” asks the following questions:

- "What are you looking for?"
- "What's your fit?"
- "Which shapes do you like?"
- "Which colors do you like?"
- "When was your last eye exam?“

Responses are stored in a table named **survey.** Using SQL we can see the columns in the table and a sample of the responses.

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

2. What is the Quiz Funnel



2.1 Create a quiz funnel to analyze user response rates

Not everyone who starts the “Style Quiz” will complete it. We can create a quiz funnel to see how many customers who start the quiz, answer question 1, question 2, etc.

The number of responses for each question can be found in the SQL query results to the right, in the column named COUNT(DISTINCT user_id).

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

SQL Query Results:

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

2.2 Create a quiz funnel to analyze user response rates

Using Excel, we can easily calculate the percentage of users who answer each question.

The first question establishes the total number of users doing the quiz. Of the remaining questions, the third and last question have the lowest completion rates.

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

2.3 Create a quiz funnel to analyze user response rates

''Which shapes do you like?''
It may be difficult for a user to know which shape frames to choose without additional information.

Recommendation: Warby Parker should offer advice on which shape frame to choose based on the shape of the customer's face i.e. Customers with round faces might find XYZ frame shape flattering. Customers with square faces may find ABC frame shape flattering, etc.

''When was your last eye exam?''
Customers might feel self-conscious about how long ago their last eye exam was.

Recommendation: Remove this question from the ''Style Quiz'' to keep the quiz light-hearted and fun.

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

3.1 A/B Testing with Home Try-On Funnel

Warby Parker's purchase funnel is:

- Take the Style Quiz > Home Try-On > Purchase the Perfect Pair of Glasses

Data for these three steps is stored in three separate tables.
The tables and their columns are listed below.

quiz	home_try_on	purchase
user_id	user_id	user_id
style	number_of_pairs	product_id
fit	address	style
shape		model_name
color		color
		price

```sql
SELECT *
FROM quiz
LIMIT 5;

SELECT *
FROM home_try_on
LIMIT 5;

SELECT *
FROM purchase
LIMIT 5;
```

3.2 A/B Testing with Home Try-On Funnel

```sql
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;
```

Create a new table by combining tables **quiz**, **home_try_on**, and **purchase**.

Query Results

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

3.3 A/B Testing with Home Try-On Funnel

```
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 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)
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(*) AS
'percent_try_on',
  1.0*SUM(is_purchase)/SUM(is_home_try_on) AS
'percent_purchase'
FROM funnels;
```

Now that we have the data combined in one table, we can analyze it in several ways. First, we can calculate overall conversion rates by aggregating across all rows.

Query Results

num_browse	num_try_on	num_purchase	percent_try_on	percent_purchase
1000	750	495	0.75	0.66

From the query results, we see that 75% of people who took the Style Quiz went on to the home try-on stage. Of those who tried frames on at home, 66% purchased frames.

3.4 A/B Testing with Home Try-On Funnel

Query Results					
3_pairs_purchased	5_pairs_purchased	3_pairs_tried	5_pairs_tried	percent_3	percent_5
201	294	379	371	0.530343007915567	0.792452830188679

We can also calculate the difference in purchase rates between customers who had 3 **number_of_pairs** with those who had 5 **number_of_pairs** to try at home.

53% of those who had 3 pairs of frames to try at home, purchased frames (201/379 = .53)

79% of those who had 5 pairs of frames to try at home, purchased frames (294/371 = .79)

Recommendation: Customers who received more pairs to try on at home were more likely to make a purchase. Make 5 frames standard for at-home trials.

3.5 A/B Testing with Home Try-On Funnel

We can explore the **quiz** table to see what insights we might find.

Here we see narrow and wide sizes are popular in both Women's ((189+103)/469 = 62%) and Men's Styles ((174+79)/432 = 59%)

Recommendation:
Capitalize on offering harder to find sizes (narrow and wide) for those customers who might not be able to find these sizes in brick and mortar stores.

```
SELECT fit,
COUNT(CASE
WHEN style LIKE 'Women%'
THEN fit
END) AS 'Women Styles',
COUNT(CASE
WHEN style LIKE 'Men%'
THEN fit
END) AS 'Men Styles'
FROM quiz
GROUP BY 1;
```

fit	Women Styles	Men Styles
I'm not sure. Let's skip it.	46	37
Medium	131	142
Narrow	189	174
Wide	103	79

3.6 A/B Testing with Home Try-On Funnel

```
SELECT price,
COUNT(CASE
WHEN style LIKE 'Women%'
THEN price
END) AS 'Women Styles',
COUNT(CASE
WHEN style LIKE 'Men%'
THEN price
END) AS 'Men Styles'
FROM purchase
GROUP BY 1;
```

Query Results

price	Women Styles	Men Styles
50	0	41
95	166	95
150	86	107

We can also explore the **purchase** table to see what insights we might find.

Here we see customers who chose Men's Style frames were more price sensitive (more likely to purchase frames priced at $50).

Recommendation:
Offer more frames priced at $50 for Men's Style frames and less for Women's Style frames. Offer frames across the full price range for Men's Style frames and focus on frames priced at $95 and $150 for Women's Style frames.

Conclusion - Actionable insights:

1. Offer frame shape recommendations to customers based on face shape.
2. Keep the Style Quiz fun and light-hearted.
3. Send 5 frames for at-home try-ons.
4. Focus on offering narrow and wide frames for customers that might have difficulty finding these sizes elsewhere.
5. Focus on different price ranges for frames depending on whether they are Women’s or Men’s Style frames.