Warby Parker Capstone

Code Academy
Learn SQL from Scratch
Intensive Coursework

by Annalee Falconer

Table of Contents

1. Warby Parker business

2. Style Quiz Funnel

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

Warby Parker Business

Lifestyle brand

Designer eyewear at a revolutionary price

Socially conscious businesses

Est. 2010

The Style Quiz helps with

Finding your perfect frame

1. "What are you looking for?"

2. "What's your fit?"

3. "Which shapes do you like?"

4. "Which colors do you like?"

5. "When was your last eye exam?"

The Quiz helps Warby Parker identify the right frames to send to customers based on their style preferences.

Finding your perfect frame - Question Completion Rates

Question	# Responses	Completion Rate
1. What are you looking for?	500	100.00%
2. What's your fit?	475	95.00%
3. Which shapes do you like?	380	80.00%
4. Which colors do you like?	361	95.00%
5. When was your last eye exam?	270	74.79%

Finding your perfect frame - Quiz Insights

Question	# Responses	Completion Rate
3. Which shapes do you like?	380	80.00%

The lower completion rate for question 3 could suggest customers are looking for glasses shapes other than Rectangular, Round or Square.

Recommendation: Increase shape options, some ideas to explore- Oval, Cat-eye or something more unique like Hexagonal.

Finding your perfect frame - Quiz Insights

Question	# Responses	Completion Rate
5. When was your last eye exam?	270	74.79%

The lower completion rate for question 5 could suggest there are customers who have never had an eye exam and thus exit not having an option that reflects this. These could be customers with great vision looking for frames as a fashion statement.

Recommendation: Add question option as "No test completed"

Purchase Funnel -

Reflects the Customer Journey

Take the Quiz

Try on at home

Purchase perfect pair

Purchase Funnel -

Reflects the Customer Journey

Take the Quiz

Try on at home

Purchase perfect pair

Subject of A/B Test

A
3 pairs

B
5 pairs
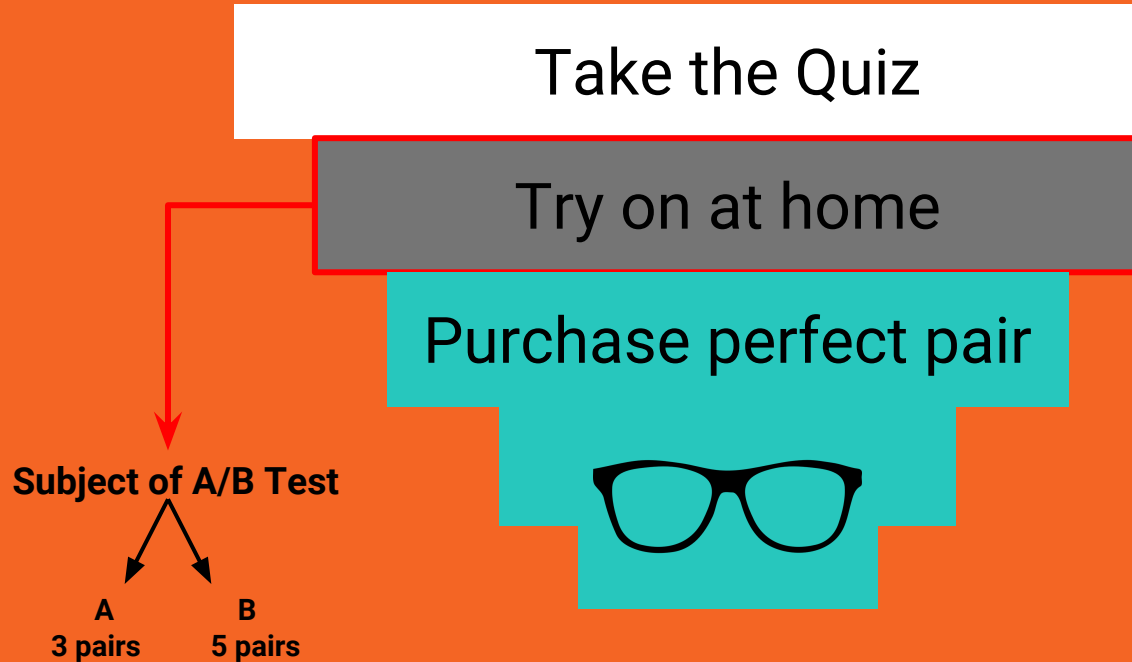
An A/B Test will be used to determine how sales are impacted by the number of glasses sent to try on after completing the quiz.

Insights from A/B Testing

3 pairs ← 500 — Take the Quiz: **1,000** — 500 → 5 pairs

Try on at home
379 (76%)

Purchase perfect pair
200 (53%)

Try on at home:
371 (74%)

Purchase perfect pair
294 (79%)

Although more people tried on glasses from Test Subject Group A, ultimately the group that received **5 pairs** had a higher conversion rate after the try-on and generated **more sales**.

Purchase Insights

Top Styles

Style	Units Purchased
Men's Styles	243
Women's Styles	252

Top Models

Model	Units Purchased
Eugene Narrow	116
Dawes	107
Brady	95

Price Sensitivity

Color	Units Purchased
$95	261
$150	193
$50	41

Popular Colors

Color	Units Purchased
Jet Black	86
Driftwood Fade	63
Rosewood Tortoise	62

Purchase Insights

product_id	style	model_name	color	price	Units Purchased
3	Men's Styles	Dawes	Driftwood Fade	150	63
10	Women's Styles	Eugene Narrow	Rosewood Tortoise	95	62
9	Women's Styles	Eugene Narrow	Rose Crystal	95	54
1	Men's Styles	Brady	Layered Tortoise Matte	95	52
6	Women's Styles	Olive	Pearled Tortoise	95	50
4	Men's Styles	Dawes	Jet Black	150	44
7	Women's Styles	Lucy	Elderflower Crystal	150	44
2	Men's Styles	Brady	Sea Glass Gray	95	43
8	Women's Styles	Lucy	Jet Black	150	42
5	Men's Styles	Monocle	Endangered Tortoise	50	41

Conclusion

1. Style Quiz should include include more frame options in question 3 to retain potential customers in the funnel

2. A/B Testing confirmed sending customers 5 pairs to try on at home led to more sales due to higher likelihood of finding the perfect match

3. Customers are almost equally interested in Women's and Men's styles and are not incredibly price sensitive, choosing our mid to high priced styles most often at $95-$150.

Conclusion

4. Eugene, Dawes and Brady are our most popular models to keep regularly in stock

5. Jet Black, Driftwood Fade, Rosewood Tortoise are the most popular colors to introduce to new or existing styles not already in this color

6. In particular, product_id 3, 10 and 9 are best selling combinations.

APPENDIX

Code Written

Question 1

To help users find their perfect frame, Warby Parker has a Style Quiz that has 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?"
The users' responses are stored in a table called survey.

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

Answer

```
--Query

SELECT *
FROM survey
LIMIT 10;
```

```
--Result

Columns are question (text), user_id (text) and
response (text)
```

Question 2

Users will "give up" at different points in the survey. Let's analyze how many users move from Question 1 to Question 2, etc.

Create a quiz funnel using the GROUP BY command.

What is the number of responses for each question?

Answer

```
--Query

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

--Result

Question 3

Using a spreadsheet program like Excel or Google Sheets, calculate the percentage of users who answer each question.:

Which question(s) of the quiz have a lower completion rates?

What do you think is the reason?

Add this finding to your presentation slides!

Answer

Question	# Responses	Completion Rate
1. What are you looking for?	500	95.00% × 00%
2. What's your fit?	475	=C4/C3
3. Which shapes do you like?	380	80.00%
4. Which colors do you like?	361	95.00%
5. When was your last eye exam?	270	74.79%

--Excel Analysis

Question 4

Warby Parker's purchase funnel is:

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

During the Home Try-On stage, we will be conducting an A/B Test:

50% of the users will get 3 pairs to try on
50% of the users will get 5 pairs to try on
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.

The data will be distributed across three tables:

quiz
home_try_on
purchase
Examine the first five rows of each table

What are the column names?

Answer

Home Try On

Query Results

user_id	number_of_pairs	address
d8addd87-3217-4429-9a01-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-accc-49a7bb46c586	3 pairs	347 Madison Square N
3bc8f97f-2336-4dab-bd86-e391609dab97	5 pairs	182 Cornelia St

Quiz

Query Results

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-a301-27ddd93b12e2	Women's Styles	Narrow	Square	Two-Tone
ce965c4d-7a2b-4db6-9847-601747fa7812	Women's Styles	Wide	Rectangular	Black

Purchase

Query Results

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

Question 5

We'd like to create a new table with the following layout:

user_id	is_home_try_on	number_of_pairs	is_purchase
4e8118dc	True	3	False
291f1cca	True	5	False
75122300	False	NULL	False

Each row will represent a single user from the browse table:

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 table
If the user has any entries in is_purchase, then is_purchase will be 'True'.
Use a LEFT JOIN to combine the three tables, starting with the top of the funnel (browse) and ending with the bottom of the funnel (purchase).

Select only the first 10 rows from this table (otherwise, the query will run really slowly).

Answer

```
--Query

WITH funnel AS
(Select

q.user_id AS user_id,

CASE WHEN h.number_of_pairs IS NULL THEN "False"
ELSE "True" END AS is_home_try_on,

h.number_of_pairs AS number_of_pairs,

CASE WHEN p.product_id IS NULL THEN "False"
 ELSE "True" 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
)

Select *
FROM funnel
LIMIT 10;
```

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

Question 6

Once we have the data in this format, we can analyze it in several ways:

We can calculate overall conversion rates by aggregating across all rows.
We can compare conversion from quiz→home_try_on and home_try_on→purchase.
We can calculate the difference in purchase rates between customers who had 3 number_of_pairs with ones who had 5.
And more!
We can also use the original tables to calculate things like:

The most common results of the style quiz.
The most common types of purchase made.
And more!

What are some actionable insights for Warby Parker?