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Warby Parker Capstone Project

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Learn SQL from Scratch Intensive:
June 5 - July 31 2018 Cohort

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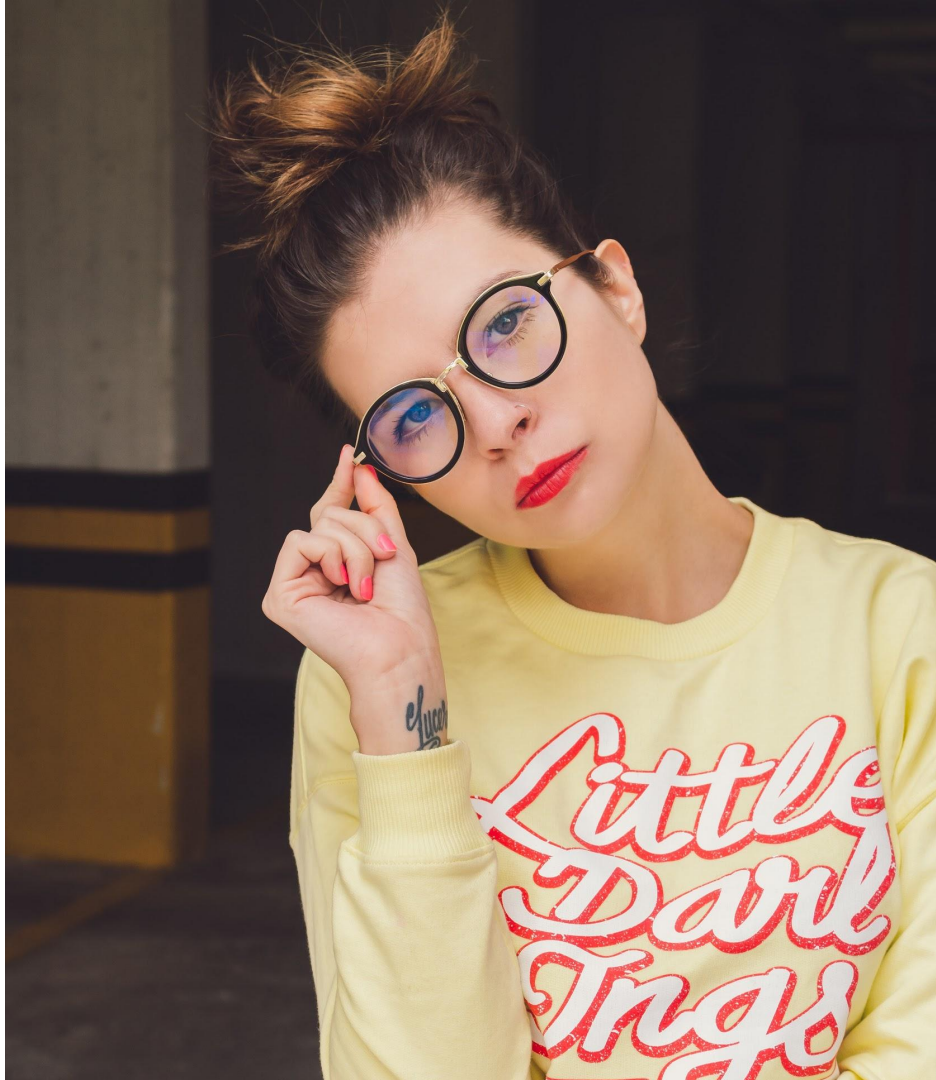

Photo by Luis Cortes Martinez on Unsplash

WARBY PARKER

Warby Parker is an American online retailer, based in New York City, of prescription glasses and sunglasses that designs in-house and sells directly to customers. Warby Parker primarily sells products through their website, but also feature retail locations in the U.S. and Canada.

Warby Parker's "Home-Try-On program" allows customers to choose five frames from the website, which they recieve to try on at home for five days, free of charge. Customers can also upload a photo and try on frames virtually.[1]

Objective: Analyze different Warby Parker's marketing funnels in order to calculate conversion rates

1. "Warby Parker." *Wikipedia*, Wikimedia Foundation, 7 July 2018, en.wikipedia.org/wiki/Warby_Parker.

Warby Parker

Style Quiz Funnel

What columns exist in the ***survey*** table?

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

- question, text, e.g. “What are you looking for?”
- user_id, text, e.g. 005e7f99-d48c-4fce-b605-10506c85aaf7
- Response, text, e.g. Women’s Styles

Query Results

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

What is the number of responses for each question?

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

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

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

Which questions of the quiz have lower completion rates?

- **Question 5 (When was your last eye exam?) had the lowest completion rate with 74.8%.**
- **Question 3 (Which shapes do you like?) had the second lowest completion rate with 80%.**

=(C6/C5) * 100

A	B	C	D
	Question	**COUNT(DISTINCT user_id**	**percentage of users who answer each question**
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	=(C6/C5) * 100

74.79224377 ×

Possible Explanations

Question 3 (which shapes do you like?) may be difficult for casual consumers to answer. A likely use case is coming to Warby Parker in order to learn what options are available in the first place. Being asked up front what shapes they'd like implies customers are familiar with the spectrum of options and more importantly what looks best on them. I'd hypothesize that most people would like a third party observer to recommend a shape.

For question 5 (When was your last eye exam?) a reason could be that a portion of users have not had an eye exam, choose not to answer, and thereby simply drop out of the funnel. Perhaps some plan on setting up an eye exam and re-entering the funnel at a later date. Additionally, picking an eye exam date could imply I'm ready to purchase and commit when in fact I'm searching to browse and be inspired.

Warby Parker
Purchase Funnel

Warby Parkers Purchase Funnel

Funnel:

1. Take the Style Quiz
2. Home Try-On
3. Purchase

Experiment:

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

Objective:

Find out whether or not users who get more pairs to try on at home will be more likely to make a purchase.

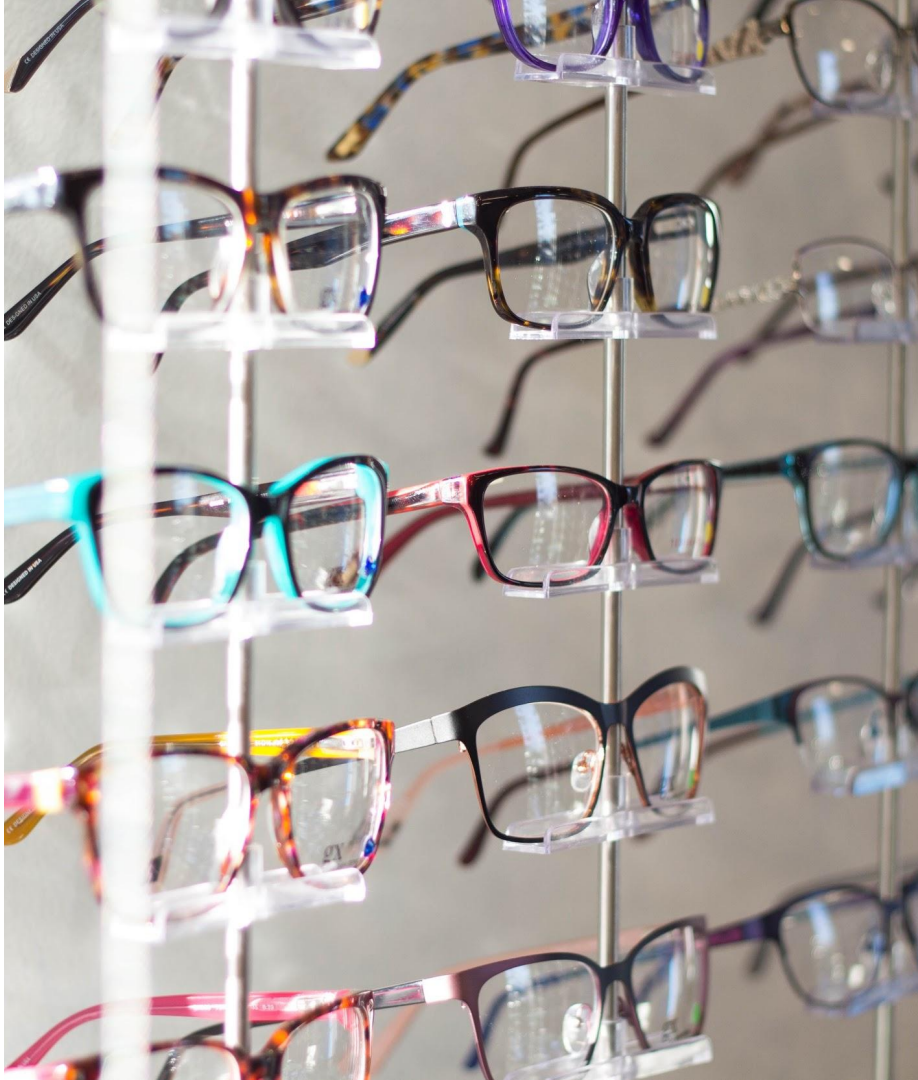

Photo by Scott Van Daalen on Unsplash

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

```sql
SELECT *
FROM quiz
LIMIT 5;

SELECT *
FROM home_try_on
LIMIT 5;

SELECT *
FROM purchase
LIMIT 5;
```

quiz table:
- User_id
- Style
- Fit
- Shape
- color

purchase table:
- user_id
- product_id
- style
- model_name
- color
- price

home_try_on table:
- user_id
- number_of_pairs
- address

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

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

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

Joining Three Tables To Create New Table

```sql
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;
```

- Creation of a new table combining *quiz*, *home_try_on*, and *purchase*
- 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'.

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

Analysis: Differences in Purchase Rates

Calculating the difference in purchase rates between customers who had 3 Home-Try-On pairs versus those customers who had 5.

```sql
WITH funnel 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_browse',
  SUM(is_home_try_on) AS 'num_home_try_on',
  SUM(is_purchase) AS 'num_purchase'
FROM funnel
GROUP BY number_of_pairs;
```

- First created new table “funnel” from previous step.
- Then, grouping by number of pairs received, counted the number of users at each stage in the funnel: Browse → Home Try On → Purchase.
- This gives the necessary information to begin calculating purchase rates of 3 pairs versus 5 pairs

Query Results

number_of_pairs	num_browse	num_home_try_on	num_purchase
Ø	250	0	0
3 pairs	379	379	201
5 pairs	371	371	294

Analysis: Differences in Purchase Rates Continued...

=D3/C3

A	B	C	D	E
umber_of_pairs	num_browse	um_home_try_o	num_purchase	
	250	0	0	0.5303430079 ×
3 pairs	379	379	201	=D3/C3
5 pairs	371	371	294	0.7924528302

- Using Google Sheets, I calculated the conversation rate using the following formula:
  a. (# of home_try_on / # of purchase rates) * 100 = Purchase Conversion Rate
- Customers that received **3 home pairs** had a purchase conversion rate of **53%**
- Customers that received **5 home pairs** had a purchase conversion rate of **79.2%**
- **In Summary: Customers that received 5 pairs instead of 3 were more likely to purchase a pair and had an additional 26.2% purchases!**

Actionable Insights For Warby Parker

1. Make 5 home pairs the default for Home-Try-On
2. Experiment with additional number of pair combinations. E.g. 4 pairs or 6 pairs.
3. Experiment with a snap a photo and share with professional feature.
    a. Imagine getting 5 pairs trying them all on, snapping a photo, and getting feedback from a stylist professional to help make the decision?