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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:

To help users find their perfect frame, Warby Parker has a Style Quiz that has the following questions:
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 users' responses are stored in a table called survey
Select all columns from the first 10 rows. What columns does the table have?

Answer: question/ user_id/ response

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

```
SQL

SELECT *
 FROM survey
 LIMIT 10;
```

2. What is the Quiz Funnel?

2.1 What is the quiz funnel?

Question:

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.

Answer:

Query Results	
Question	**Question Total**
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

```
SQL

SELECT question AS 'Question', COUNT (DISTINCT
user_id) AS 'Question Total'
 FROM survey
 GROUP BY 1
 ORDER BY 1 ASC;
```

2.2 What is the quiz funnel?

Question:

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	Question Total	% Complete
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%

Insight:

The question with the lowest completion rate is Question 5 ‘When was your last eye exam?’ Respondents may have difficulty remembering the exact day of their last eye exam, so they may fail to complete the survey. Also, respondents may not have had a recent eye exam. They may stop the survey if they fear they no longer qualify for a purchase.

3. A/B Testing with Home Try On Funnel

3.1 A/B Testing with Home Try-On Funnel

Question:

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:

Table Quiz: user_id/style/fit/shape/color
Table Home_Try_On: user_id/number_of_pairs/address
Table Purchase:
user_id/product_id/style/model_name/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

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	

3.3 A/B Testing with Home Try-On Funnel

Question:

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

Answer:

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

SQL

```
SELECT Quiz.user_id, CASE WHEN Trial.user_id
IS NOT NULL THEN 'True' ELSE 'False' END AS
is_home_try_on, Trial.number_of_pairs, CASE
WHEN Purchase.user_id IS NOT NULL THEN
'True' ELSE 'False' END AS 'is_purchase'
FROM quiz AS 'Quiz'
LEFT JOIN home_try_on AS 'Trial' ON
Quiz.user_id=Trial.user_id
LEFT JOIN purchase AS 'Purchase' ON
Quiz.user_id=Purchase.user_id
LIMIT 10;
```

3.4 A/B Testing with Home Try-On Funnel

Note:

In order to better manipulate the data I switched formats to have True=1 and False=0

New View:

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
8fe8b9a7-d5d0-4aeb-a0d2-b8dd43f50a95	0	Ø	0
9fc1bcfe-1c3b-4b78-bb3b-af3586c2f05c	1	5 pairs	1
20b03d28-d39c-46cf-81af-9fb479e823c0	1	5 pairs	1
ffe1b116-6f09-4408-9aba-f0d268c67fbe	1	3 pairs	0
f254b8a3-1c02-42a2-8c7e-2a0a5c57f0f9	1	3 pairs	0
78636c3f-a55e-4296-97c7-fd10aac81042	0	Ø	0

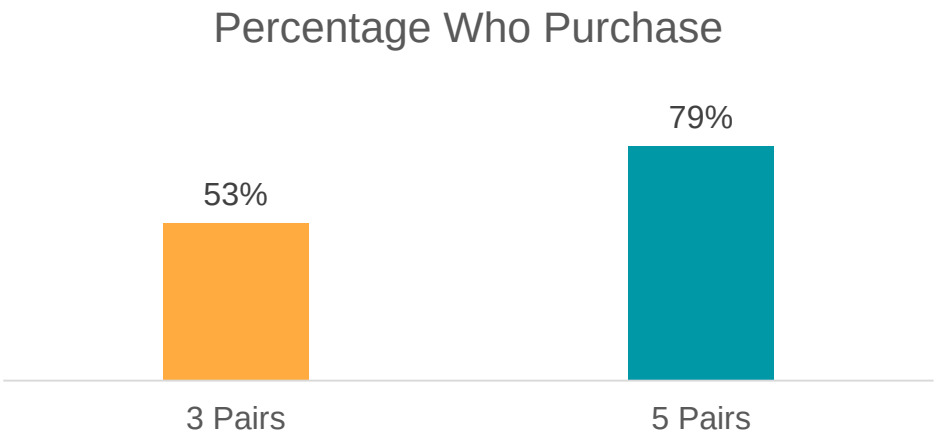
SQL

```
SELECT Quiz.user_id, CASE WHEN Trial.user_id
IS NOT NULL THEN '1' ELSE '0' END AS
is_home_try_on, Trial.number_of_pairs, CASE
WHEN Purchase.user_id IS NOT NULL THEN '1'
ELSE '0' END AS 'is_purchase'
FROM quiz AS 'Quiz'
LEFT JOIN home_try_on AS 'Trial' ON
Quiz.user_id=Trial.user_id
LEFT JOIN purchase AS 'Purchase' ON
Quiz.user_id=Purchase.user_id;
```

4. Recommendations and Next Steps

4.1 Recommendations and Next Steps

Is it better to give 3 pairs or 5 pairs of trial glasses?



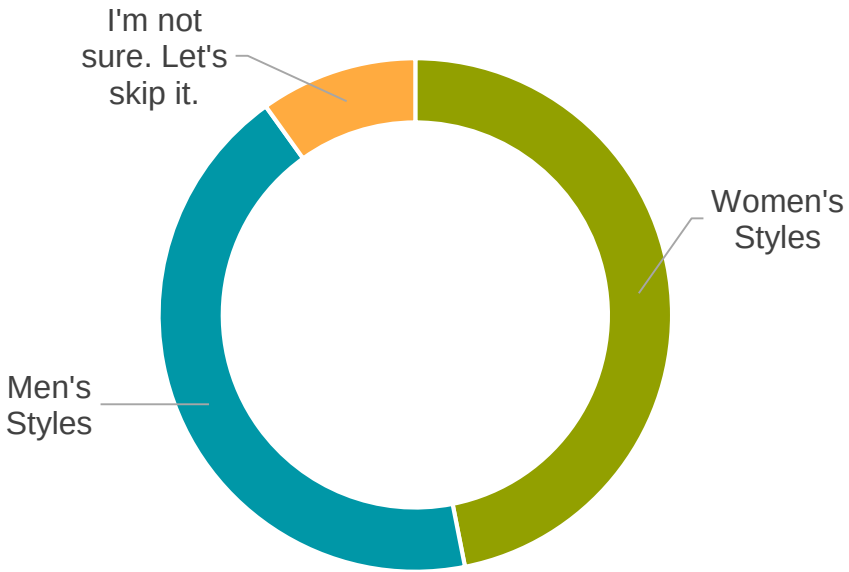
Insight:

Individuals are more likely to purchase when they try on 5 pairs of glasses when compared to 3 pairs of glasses.

```
SQL

WITH funnels AS (SELECT Quiz.user_id, CASE
WHEN Trial.user_id IS NOT NULL THEN '1' ELSE
'0' END AS is_home_try_on,
Trial.number_of_pairs, CASE WHEN
Purchase.user_id IS NOT NULL THEN '1' ELSE
'0' END AS 'is_purchase'
FROM quiz AS 'Quiz'
LEFT JOIN home_try_on AS 'Trial' ON
Quiz.user_id=Trial.user_id
LEFT JOIN purchase AS 'Purchase' ON
Quiz.user_id=Purchase.user_id)

SELECT funnels.number_of_pairs, 1.0 *
SUM(funnels.is_purchase)/SUM(funnels.is_home
_try_on) AS 'Purchase_to_Try'
FROM funnels
WHERE funnels.number_of_pairs IS NOT NULL
GROUP BY 1;
```

4.2 Recommendations and Next Steps

So we know 5 pairs are more successful. But is this always true? Let's back up to see who is taking the survey?



Insight:

- Females are more likely than males to participate in the survey
- Almost 10% of your survey base wants to skip this question.

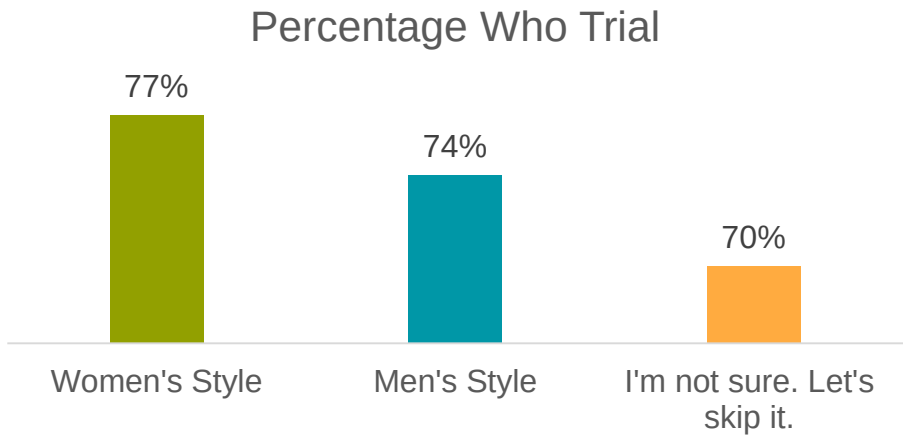
Note:

Since there is no demographic data I am working under the assumption selecting Women's Styles = Female even though I understand this is a generalization and not always true.

```
SQL

SELECT COUNT (quiz.user_id), quiz.style
FROM quiz
GROUP BY 2;
```

4.3 Recommendations and Next Steps

We see differences in survey completion rates when comparing these three buckets…



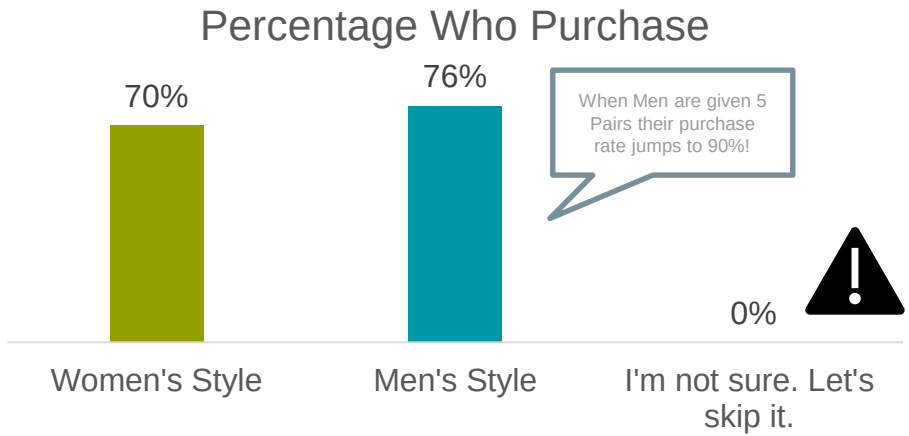
Insight:

Women are more likely than Men to move onto a physical trial. Those who ‘Skip’ are least likely to move onto a trial.

```
SQL

WITH funnels AS (SELECT Quiz.user_id, CASE
WHEN Trial.user_id IS NOT NULL THEN '1' ELSE
'0' END AS is_home_try_on,
Trial.number_of_pairs, quiz.style, CASE WHEN
Purchase.user_id IS NOT NULL THEN '1' ELSE
'0' END AS 'is_purchase'
FROM quiz AS 'Quiz'
LEFT JOIN home_try_on AS 'Trial' ON
Quiz.user_id=Trial.user_id
LEFT JOIN purchase AS 'Purchase' ON
Quiz.user_id=Purchase.user_id)

SELECT COUNT (funnels.user_id), SUM
(funnels.is_home_try_on) , SUM
(funnels.is_purchase)
FROM funnels
WHERE funnels.Style = 'Men''s Styles’;

-- Note the top syntax is same for all and
the bottom varies (funnels.style). Men shown
as example. --
```

4.4 Recommendations and Next Steps

…and even more alarming trends among those who make a purchase

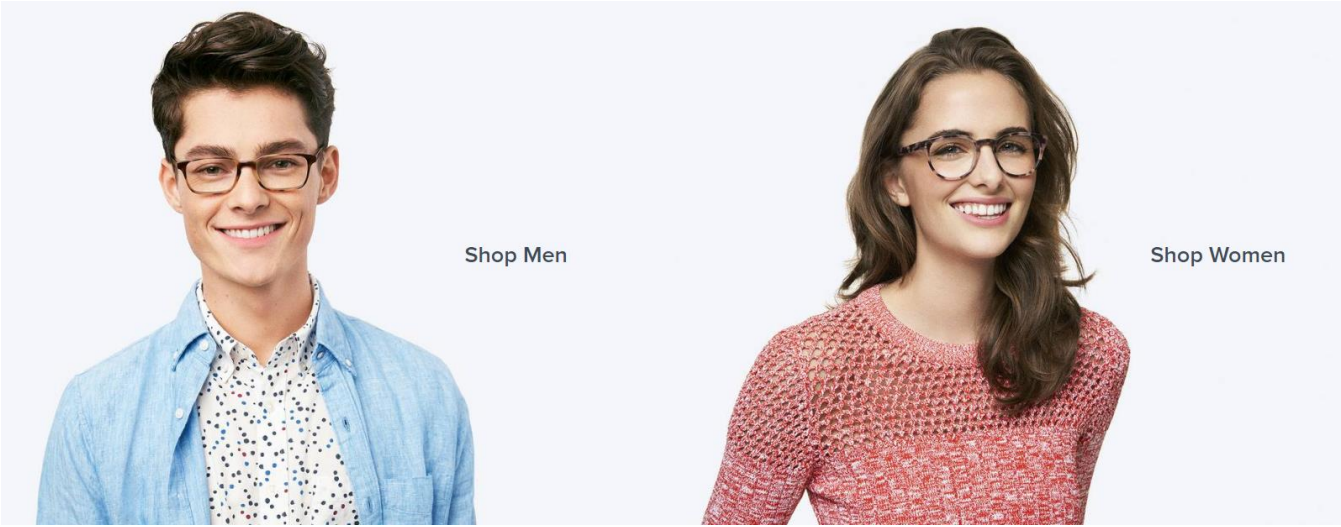


Insight:

After completing a trial, Men are more likely than Women to purchase. Those who Skip this question do not make a purchase at all.

```
SQL

WITH funnels AS (SELECT Quiz.user_id, CASE
WHEN Trial.user_id IS NOT NULL THEN '1' ELSE
'0' END AS is_home_try_on,
Trial.number_of_pairs, quiz.style, CASE WHEN
Purchase.user_id IS NOT NULL THEN '1' ELSE
'0' END AS 'is_purchase'
FROM quiz AS 'Quiz'
LEFT JOIN home_try_on AS 'Trial' ON
Quiz.user_id=Trial.user_id
LEFT JOIN purchase AS 'Purchase' ON
Quiz.user_id=Purchase.user_id)

SELECT COUNT (funnels.user_id), SUM
(funnels.is_home_try_on) , SUM
(funnels.is_purchase)
FROM funnels
WHERE funnels.Style = 'Men''s Styles';

-- Note the top syntax is same for all and
the bottom varies (funnels.style). Men shown
as example. --
```

4.5 Recommendations and Next Steps

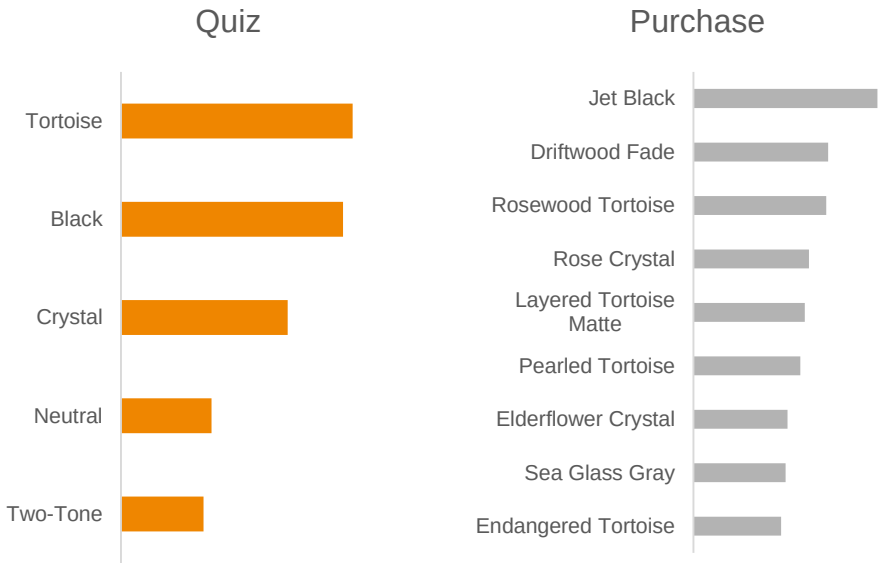


Next Steps:

Given the high drop off rate for those who don’t identify with a style Warby Parker may want to shift their survey strategy to give non-binary individuals more options. Considering their top markets, it may also align with market demographics.

4.6 Recommendations and Next Steps

There are also differences in the top colors desired when answering the survey compared to the reality of the purchase



Next Steps:

Warby Parker may want to include more options in the Quiz to better align consumers with their desired glasses.

```
SQL

SELECT COUNT (quiz.user_id), quiz.color
FROM quiz
GROUP BY 2
ORDER BY 1 DESC;

SELECT COUNT (purchase.user_id),
purchase.color
FROM purchase
GROUP BY 2
ORDER BY 1 DESC;
```