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Usage Funnels with Warby Parker

Learn SQL from Scratch April Miller August 24, 2018

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1. About Warby Parker

 for every pair of eyeglasses and sunglasses sold, a pair is creative thinking, smart design, and doing good in the world objective: to offer designer eyewear at a revolutionary price Warby Parker is a transformative lifestyle brand with a lofty while leading the way for socially conscious businesses. Founded in 2010 and named after two characters in an early Jack Kerouac journal, Warby Parker believes in <u>distributed to someone in need.</u> This project was a collaboration with Warby Parker's Data Science team (thank you!) and uses fictional data.

2. Marketing Funnels: Quiz & Home Try-On

Analyzing Warby Parker's marketing funnels in order to calculate conversion rates

2.1 Quiz Funnel

To help users find their perfect frame, Warby Parker has a Style Quiz that has the following questions:

I. "What are you looking for?"

2. "What's your fit?"

"Which shapes do you like?" 3.

4. "Which colors do you like?"

"When was your last eye exam?" 5.

The users' responses are stored in a table called survey.

2.1 Quiz Funnel - What columns does the survey table have?

Learn SQL from Scratch: Funnels project.sqlite LIMIT 10; SELECT *

Column Names Are

- question
- user_id
- response

unestion	i regi	reenonce
1 What are your looking tow?	1 + 00 × XO SU XIII XII XII XI OX DE TITEL OX III	Solida Signatura
1. Wildt ale you looking lot?	0036/199-040C-41CC-0003-10300C03aa1/	WOILIELLS SLYIES
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

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

project.sqlite

1 -- 2.1 Quiz Funnel
2 -- Question 2: Creat a quiz funnel using the GROUP BY command.
3 SELECT question ,
5 COUNT(DISTINCT user_id)
6 FROM survey
7 GROUP BY question;

500 users answered question 1
475 users answered question 2
380 users answered question 3
361 users answered question 4
270 users answered question 5

Query Results	ilts
question	COUNT(DISTINCT user_id)
 What are you looking for? 	200
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

Google Sheets, calculate the percentage of users who answer 2.1 Quiz Funnel - Using a spreadsheet program like Excel or each question.

Question	# Completed	% Completed This Question
-	200	100%
2	475	92%
3	380	80%
4	361	92%
5	270	75%

- Q Which question(s) of the quiz have a lower completion rates?
- A Lowest is question 5 (last exam), next lowest is question 3 (shapes)
- Q What do you think is the reason?
- A Either people don't remember, or haven't had a recent enough exam to get a prescription

2.2 Home Try-On Funnel

Warby Parker's Home Try-On funnel is:

Take the Style Quiz \rightarrow Home Try-On \rightarrow 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:

- allij7
- home_try_on
- purchase

2.2 Home Try-On Funnel - Examine the first five rows of

each table.

		Query Results				
user_id		style	fit	shape	color	or
4e8118dc-bb3d-49bf-85fc-cca8d83232ac	Wor	Women's Styles	Medium	Rectangular	Tortoise	ise
291f1cca-e507-48be-b063-002b14906468		Women's Styles	Narrow	Round	Black	×
75122300-0736-4087-b6d8-c0c5373a1a04		Women's Styles	Wide	Rectangular	Two-Tone	one
75bc6ebd-40cd-4e1d-a301-27ddd93b12e2		Women's Styles	Narrow	Square	Two-Tone	one
ce965c4d-7a2b-4db6-9847-601747fa7812		Women's Styles	Wide	Rectangular	Black	×
user_id		number_of_pairs	pairs	address	SS	
d8addd87-3217-4429-9a01-d56d68111da7	11da7	5 pairs		145 New York 9a	York 9a	
f52b07c8-abe4-4f4a-9d39-ba9fc9a184cc	84cc	5 pairs		383 Madison Ave	on Ave	
8ba0d2d5-1a31-403e-9fa5-79540f8477f9	17769	5 pairs		287 Pell St	II St	
4e71850e-8bbf-4e6b-accc-49a7bb46c586	c586	3 pairs		347 Madison Square N	Square N	
3bc8f97f-2336-4dab-bd86-e391609dab97	ab97	5 pairs		182 Cornelia St	elia St	
user_id	product_id	style	model_name	color		price
00a9dd17-36c8-430c-9d76-df49d4197dcf	80	Women's Styles	Lucy	Jet Black	~	150
00e15fe0-c86f-4818-9c63-3422211baa97	7	Women's Styles	Lucy	Elderflower Crystal	rystal	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	ortoise	98
01fdf106-f73c-4d3f-a036-2f3e2ab1ce06	00	Women's Styles	Lucy	Jet Black	~	150

Column Names for Each Table

From quiz: user_id, style, fit, shape, color

From home try on: user_id, number_of_pairs, address

From purchase: user_id, product_id, style, model_name, color, price

2.2 Home Try-On Funnel - 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 slowly).

2.2 Home Try-On Funnel - We'd like to create a new table with the following layout. Cont'd:

```
project.sqlite

-- 2.2 Home Try-On Funnel
-- Question 5: Create new table using LEFT JOIN

SELECT DISTINCT q.user_id,
h.user_id IS NOT NULL AS 'is_home_try_on',
h.user_id IS NOT NULL AS 'is_purchase'

RROM quiz AS q

LEFT JOIN home_try_on AS h

ON q.user_id = h.user_id

LEFT JOIN purchase AS p

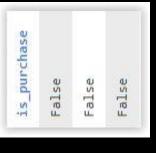
12 ON p.user_id = q.user_id

LEFT JOIN purchase AS p

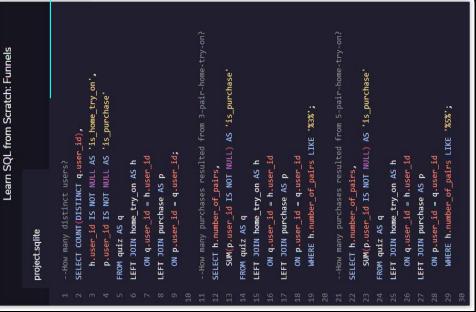
13 LIMIT 10;
```

no n	Query Results		
user_id	is_home_try_on	number_of_pairs	is_purchase
4e8118dc-bb3d-49bf-85fc-cca8d83232ac	П	3 pairs	0
291f1cca-e507-48be-b063-002b14906468	Н	3 pairs	↔
75122300-0736-4087-b6d8-c0c5373a1a04	0	0	0
75bc6ebd-40cd-4e1d-a301-27ddd93b12e2	-1	5 pairs	0
ce965c4d-7a2b-4db6-9847-601747fa7812	Н	3 pairs	₩,
28867d12-27a6-4e6a-a5fb-8bb5440117ae	Н	5 pairs	1
5a7a7e13-fbcf-46e4-9093-79799649d6c5	0	0	0
0143cb8b-bb81-4916-9750-ce956c9f9bd9	0	0	0
a4ccc1b3-cbb6-449c-b7a5-03af42c97433	П	5 pairs	0
b1dded76-cd60-4222-82cb-f6d464104298	H	3 pairs	0

Note that is_purchase in the example looks slightly different than the result of our query. The default result of our query will give an integer response, which is easier to use for calculations.



3 Home Try-On Funnel - A/B Testing





There are 1000 distinct users that have tried on glasses at home.

201 purchased after having a 3-pair trial:

Query Results is_purchase

201/1000 = 20% of all users

294 purchased after having a 5-pair trial:

294/1000 = 29% of all users

Out of total purchases (201 + 294 = 495)

201/495 = 41% of all purchases were from 3-pair trial

294/495 = 59% of all purchases were from 5-pair trial

500 users had a 3-pair trial. 500 users had a 5-pair trial.

201/500 = 40% of users that had a 3-pair trial made a purchase.

294/500 = 59% of users that had a 3-pair trial made a purchase.

59% - 40% = Users are 19% more likely to make a purchase if they have a 5-pair trial.

4 Double-Checking Our Data

```
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-- Double-checking how many users

SELECT COUNT(user_id)

FROM quiz;

-- Compare to distinct users

SELECT COUNT(DISTINCT user_id)

FROM quiz;

FROM quiz;
```



By checking to see if our total number of users differs from the number of distinct users, we can see that no user took the quiz more than

4 Double-Checking Our Data

```
Learn SQL from Scratch: Funnels

project.sqlite

-- Double-checking how many users

SELECT COUNT(user_id)

FROM home_try_on;

-- Compare to distinct users

FROM home_try_on;

FROM home_try_on;

FROM home_try_on;
```

COUNT(user_id)
750
COUNT(DISTINCT user_id)
750

Query Results

By checking to see if our total number of users differs from the number of distinct users, we can see that no user did more than one home trial

4 Double-Checking Our Data





By checking to see if our total number of users differs from the number of distinct users, we can see that no user bought more than one pair of glasses.

COUNT (DISTINCT user_id) COUNT (user_id) Home-Try-On COUNT (DISTINCT user_id) COUNT (user_id) COUNT (DISTINCT user_id) 5 Results COUNT (user_id) Query Results Quiz

Purchase

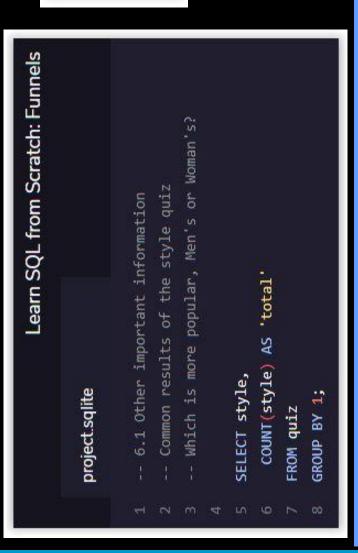
750 users did the home trial, but only 495 made a purchase.

- 1000 users, 750 users did home trial: 75% of all users did a home trial.
- Of the 750 users that did a home trial, 495 made purchase making a conversion rate of 66%.
- 1000 users took the quiz, 495 made purchase. (49.5% of all users made a purchase)

6.1 - Other important information - Common Results

The most common results of the style quiz.

Which is more popular, Men's or Women's?

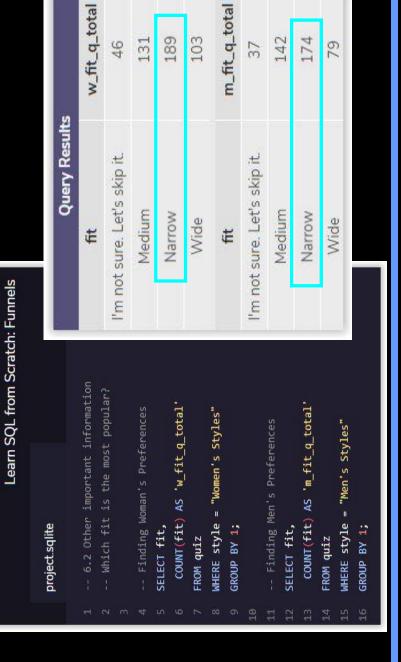


Query Results	
style	total
I'm not sure. Let's skip it.	66
Men's Styles	432
Women's Styles	469

Out of all responses selected in the style quiz, 47% preferred Women's styles.

6.2 - Other important information - Common Results, Cont'd

Which fit is most popular?



All users prefer a Narrow fit, and their second preference is medium fit. A Wide fit is the least desired option.

6.3 - Other important information – Common Results, Cont'd

Which shape is most popular?

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-- 6.3 Other important information
-- 6.3 Other important information
-- 6.3 Other important information
-- Finding Woman's Preferences
SELECT shape,
COUNT(shape) AS 'w_shape_q_total'
FROM quiz
WHERE style = "Women's Styles"
GROUP BY 1;
GROUP BY 1;
-- Finding Men's Preferences
SELECT shape,
COUNT(shape) AS 'm_shape_q_total'
FROM quiz
WHERE style = "Men's Styles"
GROUP BY 1;
GROUP BY 1;
GROUP BY 1;
SELECT shape,
COUNT(shape) AS 'm_shape_q_total'
FROM quiz
WHERE style = "Men's Styles"

Results	w_shape_q_total	46	184	81	158	m_shape_q_total	44	176	80	132
Query Results	shape	No Preference	Rectangular	Round	Square	shape	No Preference	Rectangular	Round	Square

Men and Woman both prefer the Rectangular shape most.

The second most preferred shape for all users is Square.

6.4 - Other important information - Common Results, Cont'd Which color is more popular?

```
project.sqlite

-- 6.4 Other important information
-- 6.4 Other important information
-- Which color is the most popular?

-- Finding Woman's Preferences

SELECT color,
COUNT(color) AS 'w_color_q_total'

FROM quiz

WHERE style = "Women's Styles"

GROUP BY 1;

-- Finding Men's Preferences

SELECT color,
COUNT(color) AS 'm_color_q_total'

HEROM quiz

WHERE style = "Men's Styles"

GROUP BY 1;

A GROUP BY 1;

GROUP BY 1;

GROUP BY 1;
```

Quer	Query Results
color	w_color_q_total
Black	126
Crystal	106
Neutral	58
Tortoise	142
Two-Tone	37
color	m_color_q_total
Black	121
Crystal	81
Neutral	44
Tortoise	128
Two-Tone	28

color	w_color_q_total	color	m_color_q_total
Tortoise	142	Tortoise	128
Black	126	Black	121
Crystal	106	Crystal	81
Neutral	28	Two-Tone	58
Two-Tone	37	Neutral	44

Men and Woman have very similar interests in colors, but their two least preferred colors are swapped. Women would prefer a neutral color over two-tone, and men would prefer two-tone over neutral.

7 - What are some actionable insights for Warby Parker?

- Once Warby Parker has made a sale, I would suggest using the data collected from quiz to offer sunglasses that meet the top two or three preferences for the user. This could also be done as an upsell just before purchase completion.
- I would be interested to know a user's answers to the styles, colors, etc. before and after the home try on. If there are differences, targeting those trends when the user is browsing online may be helpful. Do those preferences change after they see the glasses on their own face instead of the screen? 2.
- Warby Parker may have good luck in sending a pair of sunglasses that are similar to a recent purchase as a home trial to generate an impulse purchase. 3.