



# Funnels with Warby Parker

Learn SQL from scratch  
Nathan Kowall  
Aug 26, 2018



# Table of Contents

1. Familiarizing with Warby Parker
2. Incompletes
3. Joining Tables
4. Useful Data
5. A/B test
6. Summing preferences



# Familiarizing with Warby Parker

The data schema for the Warby Parker's survey table is as follows:

question	user_id	response
----------	---------	----------

The primary key here is `user_id` which we can use to match Warby Parker's other tables



# Incompletes

Through out the survey we can see that not all respondents will finish, in fact just over half will finish the entire survey.

1. What are you looking for?	500	100.00%
2. What's your fit?	475	95.00%
3. Which shapes do you like?	380	76.00%
4. Which colors do you like?	361	72.20%
5. When was your last eye exam?	270	54.00%

This is a natural occurrence with online surveys. Users could lose interest, may not know the answers to the proposed questions, or even have a connectivity issue.

# Joining Tables

We can join multiple tables to find out who ended up making purchases into a flat file. We can use the following code as a building block to aggregate data into useful information. In order to make it more readable we can use CASE statements to force a boolean TRUE/FALSE.

```
with FUNNELS as (SELECT quiz.user_id,
CASE
    WHEN home_try_on.user_id IS NOT NULL
    THEN 'True'
    ELSE 'False'
END AS 'is_home_try_on',
home_try_on.number_of_pairs,
CASE
    WHEN purchase.user_id IS NOT NULL
    THEN 'True'
    ELSE 'False'
END AS 'is_purchase'
FROM quiz
LEFT JOIN home_try_on
ON home_try_on.user_id = quiz.user_id
LEFT JOIN purchase
ON purchase.user_id = quiz.user_id
)
SELECT user_ID,is_home_try_on,number_of_pairs,is_purchase FROM funnels
LIMIT 10;
```

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		False
75bc6ebd-40cd-4e1d-a301-27dd93b12e2	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		False
0143cb8b-bb81-4916-9750-ce956c9f9bd9	False		False
a4ccc1b3-cbb6-449c-b7a5-03af42c97433	True	5 pairs	False
b1dded76-cd60-4222-82cb-f6d464104298	True	3 pairs	False

# Useful data

Building off of the previous table we can aggregate data by converting it to numeric data to SUM it. With the summed data we can then aggregate it into useful information.

Of the people who took the quiz we can see the percentage of those who took pairs to try and then those who ended up making purchases. There is also an example of converting tables to numeric to be summed.

We see 75% of respondents who took the quiz tried pairs of glasses and 50% made purchases.

Home_try_percentage	purchase_percentage
0.75	0.495

```
conv_tally as (SELECT
user_id,
CASE WHEN
    is_home_try_on = 'True'
THEN 1
ELSE 0
END as 'home_try_count',
CASE WHEN
    is_purchase = 'True'
THEN 1
ELSE 0
end as 'purchase_count'
FROM FUNNELS
),
conv_agg as (
SELECT user_id,
sum(home_try_count) as 'home_try_total',
sum(purchase_count) as 'purchase_total'
FROM conv_tally
)
SELECT
0.001 * home_try_total / count(user_id) as 'Home_try_percentage',
0.001 * purchase_total / count(user_id) as 'purchase_percentage'
from conv_agg;
```



# A/B Test

Out of the respondents who received glasses to try on at home, some were given 3 pairs while others were given 5 pairs to try.

As we can see there is a significant 46% increase in purchases with those that are sent 5 pairs to try.

We accomplish this again by summing the totals for each test and not forgetting to make sure they ended up making purchases!

purchases_with_3_pairs	purchases_with_5_pairs
201	294

```
pair_count as (SELECT
CASE
WHEN
    number_of_pairs = '3 pairs' and is_purchase = 'True'
    THEN 1
    Else 0
END as 'q3_pairs',
CASE
WHEN
    number_of_pairs = '5 pairs' and is_purchase = 'True'
    THEN 1
    Else 0
END as 'q5_pairs'
FROM FUNNELS
)

SELECT sum(q3_pairs) as 'purchases_with_3_pairs',sum(q5_pairs) as
'purchases_with_5_pairs' FROM pair_count;
```

# Summing Preferences

We can count the answers in each question by using 4 distinct select queries. This yields useful information, such as knowing most customers prefer Rectangular or Square shapes. Warby Parker's inventory may want to reflect that.

```
SELECT style,COUNT(style) FROM quiz GROUP BY style;
SELECT fit,COUNT(fit) FROM quiz GROUP BY fit;
SELECT shape,COUNT(shape) FROM quiz GROUP BY shape;
SELECT color,COUNT(color) FROM quiz GROUP BY color;
```

style	count(style)
I'm not sure. Let's skip it.	99
Men's Styles	432
Women's Styles	469

color	count(color)
Black	280
Crystal	210
Neutral	114
Tortoise	292
Two-Tone	104

fit	count(fit)
I'm not sure. Let's skip it.	89
Medium	305
Narrow	408
Wide	198

shape	count(shape)
No Preference	97
Rectangular	397
Round	180
Square	326