codecademy

# Usage Funnels with Warby Parker

Learn SQL from Scratch

Daron Miller

03/13/2019

# Table of Contents

# 1. Get Familiar w Warby Parker

# 1.1 Familiarize with SURVEY Table

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

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

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

| 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 |
| 5. When was your last eye exam? | 00a556ed-f13e-4c67-8704-27e3573684cd | <1 Year |

# 2. What is the Quiz Funnel?

# 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.**

***> What is the number of responses for each question?***

| question | user count |
|---|---|
| 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 |

```
SELECT question,
 (SELECT COUNT(DISTINCT user_id)) as 'user  count
FROM survey
  GROUP BY survey.question;
```

# 2.2 Quiz Funnel %

**Calculate the percentage of users who answer each question.**

**>** Question 5 likely has the lowest completion rate because people may not remember when their last eye exam was. Furthermore, unlike the others, this question is not a matter of opinion or preference.

| question | user count | % |
|---|---|---|
| 1. What are you looking for? | 500 | 100 |
| 2. What's your fit? | 475 | 95 |
| 3. Which shapes do you like? | 380 | 76 |
| 4. Which colors do you like? | 361 | 72 |
| 5. When was your last eye exam? | 270 | 54 |

```
SELECT question,
(SELECT COUNT(DISTINCT user_id)) as 'user count',
100 * COUNT(DISTINCT user_id) /
(SELECT COUNT(DISTINCT user_id) FROM survey) as '%'
            FROM survey
  GROUP BY survey.question;
```

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

# 3.1 Home Try-On Funnel

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.*

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

```
SELECT * FROM quiz LIMIT 5;
SELECT * FROM home_try_on LIMIT 5;
SELECT * FROM purchase LIMIT 5;
```

**quiz**

| user_id | style | fit | shape | color |
|---|---|---|---|---|

**home_try_on**

| user_id | number_of_pairs | address |
|---|---|---|

**purchase**

| user_id | product_id | style | model_name | color | price |
|---|---|---|---|---|---|

# 3.2 Home Try-On Funnel

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*

| 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 | NULL | False |
| 75bc6ebd-40cd-4e1d-a301-27ddd93b12e2 | True | 5 pairs | False |
| ce965c4d-7a2b-4db6-9847-601747fa7812 | True | 3 pairs | True |

```
 SELECT DISTINCT q.user_id,
 CASE WHEN t.user_id IS NOT NULL THEN 'True'
ELSE 'False'
END as 'is_home_try_on',
 CASE WHEN t.number_of_pairs IS NULL THEN 'NULL'
ELSE t.number_of_pairs
END as 'number_of_pairs',
 CASE WHEN p.user_id IS NOT NULL THEN 'True'
ELSE 'False' END as 'is_purchase'
 FROM quiz q
LEFT JOIN home_try_on t ON q.user_id = t.user_id
LEFT JOIN purchase p ON t.user_id = p.user_id
  LIMIT 10;
```

# 3.3 Home Try-On Funnel

Once we have the data in this format, we can analyze things like the percentage of customers progressing through the quiz, try-on, and purchase stages.

*What are some actionable insights for Warby Parker?*

**Warby Parker can use this analysis to focus on improving the try-on to purchase phase of the process. A 75% conversion rate from quizzed to home try-on is fairly decent. It may not need as many resources as home try-on funnel.**

| num_quizzed | num_try_on | num_purchase | % quiz-try_on | % try_on-purchase |
|---|---|---|---|---|
| 1000 | 750 | 495 | 75.0 | 66.0 |

```
WITH browse AS
  (SELECT DISTINCT q.user_id,
   t.user_id IS NOT NULL as 'is_home_try_on',
   t.number_of_pairs = '3 pairs' as '3_pairs',
   t.number_of_pairs = '5 pairs' as '5_pairs',
   p.user_id IS NOT NULL as 'is_purchase'
 FROM quiz q LEFT JOIN home_try_on t ON
q.user_id = t.user_id LEFT JOIN purchase p ON
t.user_id = p.user_id)
 SELECT
 COUNT(*) as 'num_quizzed',
 SUM(is_home_try_on) as 'num_try_on',
 SUM(is_purchase) as 'num_purchase',
 100.0*SUM(is_home_try_on)/COUNT(user_id) as
'% quiz-try_on',
 100.0*SUM(is_purchase)/SUM(is_home_try_on) as
'% try_on-purchase'
 FROM browse;
```