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Usage Funnels with Warby Parker Capstone

Learn SQL from Scratch

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Example Table of Contents

1. Get Familiar with Warby Parker

1.1 Warby Parker Background and Data Tables

"Warby Parker was founded with a rebellious spirit and a lofty objective: to offer designer eyewear at a revolutionary price, while leading the way for socially conscious businesses.“ The brand allows purchasers to try on their glasses in a more comfortable fashion by allowing an at home try on program and offering a style quiz to help users narrow down their search.

For this project, several marketing funnels were provided by Warby Parker’s Data Science team.

- One table to be used in our “Quiz Funnel” task – table “survey”
- Three tables to be used in or “Home Try-On Funnel” task – tables “quiz”, “home_try_on”, and “purchase.”

“Survey” Table Example Contents

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.

“Quiz” Table Example Contents

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

“Home_Try_On” Table Example Contents

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

“Purchase” Table Example Contents

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

2. Quiz Funnel

2.1 Style Quiz Funnel Results

Warby Parker offers a style quiz containing five questions to help users in their search for a new set of glasses.

- Responses for each question range from 270 to 500. 500 users beginning to survey and only 54% completing the entire questionnaire.
- Question 5 has the highest loss as a percentage of active users. This may be driven by users not knowing or not having easily accessible the date of their last eye exam.
- Question 3 saw the highest loss of individual users. Loss hypothesized to be driven by user confusion or users being unable to see how a specific shape looks when worn.

```
-- Quiz Funnel Q1
select *
 from survey
limit 10;

-- Quiz Funnel Q2
select question, count (distinct user_id)
from survey
group by question;

-- Quiz Funnel Q3 in Excel
```

Question	Count (distinct user_id)	% Completion of Start	% Completion Active Users	Loss At Question
1. What are you looking for?	500	100%	100%	0%
2. What's your fit?	475	95%	95%	5%
3. Which shapes do you like?	380	76%	80%	20%
4. Which colors do you like?	361	72%	95%	5%
5. When was your last eye exam?	270	54%	75%	25%

3. Home Try On Funnel

3.1 Try On Funnel Background and Data Tables

The main objective of Warby Parker's Style Quiz is to end in a purchase after the users try on several pairs in the comfort of their home.

Testing was completed where half of users tried on 3 pairs where the other half tried on 5 pairs. Analysis of data available will help Warby Parker understand which option leads to a greater rate of purchase.

- Three tables to be used in or "Home Try-On Funnel" task – tables "quiz", "home_try_on", and "purchase." Column names shown to the right.

"Quiz" Table Example Contents

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

"Home_Try_On" Table Example Contents

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

"Purchase" Table Example Contents

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

3.2 Joining Data Tables

In order to analyze the data more efficiently, a left join will be used to combine the three tables shown on the previous slide.
In this example, 1 represents True and 0 represents False.

```
-- Home Try On Funnel Q5

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 home_try_on.user_id =
quiz.user_id

left join purchase on purchase.user_id = quiz.user_id

limit 10;
```

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

3.3 Overall Conversion Rates

Critical to Warby Parker's success is their conversion rate of turning interested consumers into purchases. Their marketing funnel includes leading users from their style quiz to at home try on to finally purchasing.

- Of 1,000 quiz users, 75% made it to the home try on stage.
- 66% of home try on users ended up purchasing.
- 49.5% of total quiz users ended in a purchase.

```
-- Home Try On Funnel Q6 - Conversion Rates Lesson
with funnels 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 home_try_on.user_id = quiz.user_id
left join purchase on purchase.user_id = quiz.user_id)

select count(*) as 'Quiz Users',
sum(is_home_try_on) as 'Home Try On',
sum(is_purchase) as 'Purchase',
1.0 * sum(is_home_try_on) / count(user_id) as 'Percent Home Try On',
1.0 * sum(is_purchase) / sum(is_home_try_on) as 'Percent of HTO Purchased',
1.0 * sum(is_purchase) / count(user_id) as 'Percent of Quiz Purchased'
from funnels;
```

Quiz Users	Home Try On	Purchase	Percent Home Try On	Percent of HTO Purchased	Percent of Quiz Purchased
1000	750	495	0.75	0.66	0.495

3.3 Purchase by Try On Quantity

Warby Parker chose to test sending users varying quantities of glasses to try on to understand if this impacted the overall rate of purchase. Of users who made it to the home try on stage, 50% received 3 pairs and 50% received 5 pairs.

- 53% of users who received 3 pairs of glasses completed a purchase.
- 79% of users who received 5 pairs of glasses completed a purchase.
- It is recommended to continue with 5 pairs of glasses for users to try on at home.

```
-- Home Try On Funnel Q6 - Conversion Rates Lesson Add On 3 vs 5
Purchase Impact
with funnels 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 home_try_on.user_id = quiz.user_id
left join purchase on purchase.user_id = quiz.user_id)

select number_of_pairs,
count(*) as 'Quiz Users',
sum(is_home_try_on) as 'Home Try On',
sum(is_purchase) as 'Purchase',
round(1.0 * sum(is_purchase) / sum(is_home_try_on),2) as 'Percent of
HTO Purchased'
from funnels
group by number_of_pairs;
```

number_of_pairs	Quiz Users	Home Try On	Purchase	Percent of HTO Purchased
Ø	250	0	0	Ø
3 pairs	379	379	201	0.53
5 pairs	371	371	294	0.79

4. Further Insights

4.1 Style Quiz Results and Actionable Insights

By returning to the quiz and purchase tables, we can dig further to understand trends in most popular styles.

- The most popular style was 'Women's' with nearly half of responses (47%).
- The most popular model purchased was the 'Eugene Narrow'.

Several interesting insights were found within this analysis. Recommended actions include:

- Reevaluating questions 3 and 5 in the style quiz to reduce guest confusion or loss in order to maintain user base who makes it to the home try on phase.
- Increase number of pairs distributed in the home try on phase from 3 to 5 to increase purchase conversion. Further analysis recommended to understand impact to supply chain costs or damage rates to ensure sustained profit.

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

model_name	User Response
Eugene Narrow	116
Dawes	107
Brady	95
Lucy	86
Olive	50
Monocle	41

```
-- Q6 Quiz Results Basic Style
select style, count(*) as 'User Response'
from quiz
group by style;

-- Q6 Quiz Results Popular Models Purchased
select distinct model_name, count(*) as 'User Response'
from purchase
group by model_name
order by count(*) desc;
```