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Warby Parker

Learn SQL from Scratch

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Get familiar with Warby Parker

One table contains a style quiz, below are the first 10 rows

- The style quiz has five different questions to help Warby Parker suggest glasses for its try at home program
- Below is an example of the first 10 rows of information from the survey table with responses

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

Not all users complete each question in the survery

• On the right is a sum of the number of distinct users that responded to each survey question.

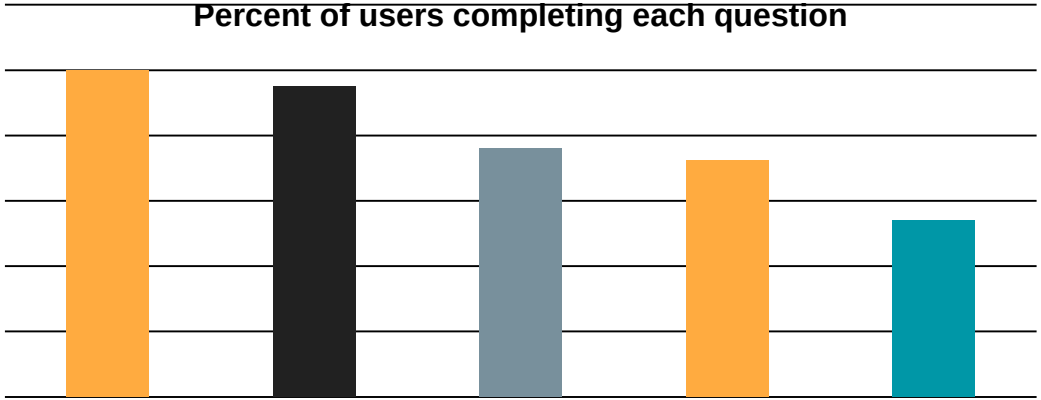
• As you can see, as users go through each question, there is a level of attrition at each stage

• All users complete the first question and only 54% of the users who complete the first question complete the 5th question

• There is attrition at each step, both seen in graph on the right and table in the top right of the slide

QUESTION	TOTAL 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

Question	Percent Complete
1. What are you looking for?	100%
2. What's your fit?	95%
3. Which shapes do you like?	76%
4. Which colors do you like?	72%
5. When was your last eye exam?	54%



Explore Warby Parker Funnel

Below is a breif snapshot of tables that contain data on the Warby Parker sales funnel

- On the right are query results from three tables that represent Warby Parker's sales funnel.
- Warby Parker's purchase funnel is:
Take the Style Quiz → Home Try-On → Purchase the Perfect Pair of Glasses
- The columns for each tables are displayed on the right (five rows each)

Quiz table

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

Home try on table

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

Purchase Table

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	150

Analyze funnel

Example of using LEFT JOIN to analyse the Warby Parker Sales Funnel

- The query on the right uses LEFT join to join the three tables previously shown and allows us to observe the Warby Parker sales funnel
- The results from the query can be seen below (the table below shows the first five rows)
- When a query shows up as a NULL it is recorded as FALSE in the is_home_try_on and is_purchase column. It is shown as NULL on number_of_pairs which implies that a user did not try the home_try_on program

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-a301-27ddd93b12e2	TRUE	5 pairs	FALSE
ce965c4d-7a2b-4db6-9847-601747fa7812	TRUE	3 pairs	TRUE

```
-- Query

WITH subquery 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 quiz.user_id = home_try_on.user_id
left JOIN purchase
ON quiz.user_id = purchase.user_id
)

SELECT user_id, case when is_home_try_on = 1 then
'TRUE' else 'FALSE' end AS 'is_home_try_on',
number_of_pairs, case when is_purchase = 1 then 'TRUE'
else 'FALSE' end AS "is_purchase"
FROM subquery
LIMIT 10;
```

It looks like there is attrition across the sales funnel (this is to be expected), but it highlights where we can improve…

```
-- Query for table across

With subquery 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 quiz.user_id = home_try_on.user_id
left JOIN purchase
ON quiz.user_id = purchase.user_id)

SELECT COUNT(user_id) AS 'Survey_Respondents',
   SUM(is_home_try_on) AS 'Total_Home_Try_On',
   SUM(is_purchase) AS 'Total_Purchase',
    1.0 * SUM(is_home_try_on) / COUNT(user_id) AS
'Survey_to_Home_Try_ON',
   1.0 * SUM(is_purchase) / SUM(is_home_try_on) AS
'Home_try_on_to_Purchase'

   FROM subquery;
```

- Of the total survey respondents, 75% move to the home try on program and 66% of those users who try the home try program purchase a pair of glasses
- There is room to lower attrition across the funnel from survey to “home try on” and “home try on” to purchase

Survey_Respondents	Total_Home_Try_On	Total_Purchase	Survey_to_Home_Try_ON	Home_try_on_to_Purchase
1000	750	495	0.75	0.66

Home try on programs with 5 pairs perform better than home try on programs with 3 pairs

- Assuming the programs were allocated randomly, the 5 pair program converts more customers from “home try on” to purchase.
- If the allocation was not random, we may need to think about selection bias (ie maybe people who choose 5 pair programs are inherently more likely to convert)
- If the costs of 5 pair “try at home” programs are not much higher that the 3 pair, maybe we can think about sticking to them for all customers

Number_of_pairs	Survey_Respondents	Total_Home_Try_On	Total_Purchase	Home_try_on_to_Purchase
	250	0	0	NULL*
3 pairs	379	379	201	0.530343007915567
5 pairs	371	371	294	0.792452830188679

```
-- Query for table across

With subquery 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 quiz.user_id = home_try_on.user_id
left JOIN purchase
ON quiz.user_id = purchase.user_id)

SELECT number_of_pairs, COUNT(DISTINCT user_id) AS
'Survey_Respondents',
   SUM(is_home_try_on) AS 'Total_Home_Try_On',
   SUM(is_purchase) AS 'Total_Purchase',
   1.0 * SUM(is_purchase) / SUM(is_home_try_on) AS
'Home_try_on_to_Purchase'
FROM subquery
GROUP BY number_of_pairs;
```

Most common survey responses and purchases

Styles are broke by *men* and *women*, the most common color purchased is *jet black*, the most common model is *Eugene Narrow*

- The first table (top right) shows the most common style preferences from the quiz
- The second table (bottom right) shows the most common model purchases
- The third table (below) shows the most common color purchases

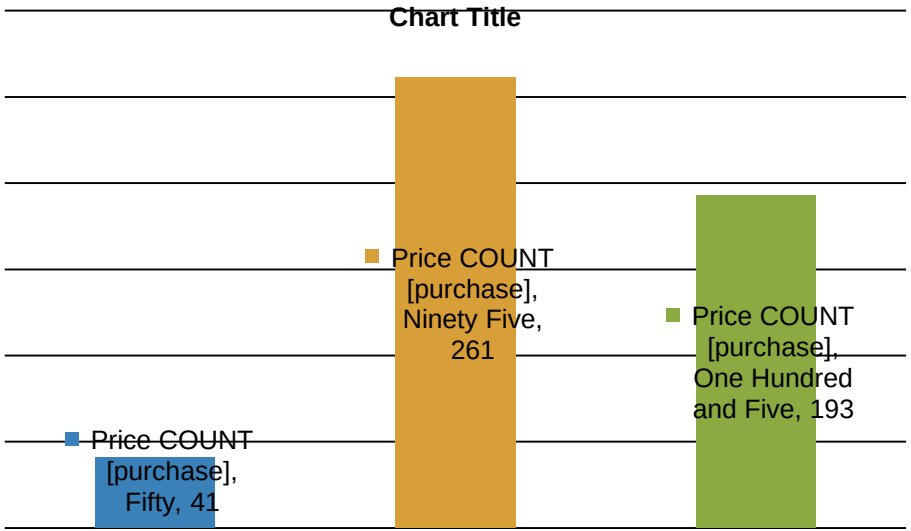
color	COLOR COUNT [purchase]
Driftwood Fade	63
Elderflower Crystal	44
Endangered Tortoise	41
Jet Black	86
Layered Tortoise Matte	52
Pearled Tortoise	50
Rose Crystal	54
Rosewood Tortoise	62
Sea Glass Gray	43

style	STYLE COUNT [quiz]
I'm not sure. Let's skip it.	99
Men's Styles	432
Women's Styles	469

model_name	MODEL COUNT [purchase]
Brady	95
Dawes	107
Eugene Narrow	116
Lucy	86
Monocle	41
Olive	50

The average selling price is $112

- The average selling price is $112
- The distribution of price can be seen on below




```
-- Query for table across

with subquery3 AS (SELECT COUNT(*) AS 'Total_Count',
price
FROM purchase
GROUP BY color)

SELECT 1.0 * (SUM(price*Total_Count)/SUM(Total_Count))
FROM subquery3;
```

price	Price COUNT [purchase]
50	41
95	261
150	193

Summary and implications

- There is attrition across each of the five questions of Warby Parker's style survey – experimenting with survey format could help reduce this
- There is attrition across the sales funnel, (which is to be expected)
    - In particular, 75% from quiz to "home try on" and 66% from "home try on" to purchase. Therefore, of the the users who take the style quiz, approximately 50% of them purchase
- Home try on programs with five pairs outperform home try on programs with three pairs. Perhaps we can adopt this program for all users
- Certain colors and models are purchased more than others, this may have implications for inventory
- The average selling price is $112, perhaps we can make changes to the site experience to increase the average selling price in order to grow total revenue