codecademy

Warby Parker's Marketing Funnels

Learn SQL from Scratch

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1. Get familiar with Warby Parker Data

1.1 Contents of survey database

The survey data contains the responses for users to questions in the customer survey. Ten rows are included below

```
SELECT
FROM
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
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. What is the Quiz Funnel

2.1 Quiz funnel from survey

```
SELECT question, COUNT(DISTINCT
user_id) AS
'question_completion'
FROM survey
GROUP BY 1
ORDER BY 1;
```

This query shows the count of users who complete each question in the survey. These results demonstrate that a number of users will abandon the survey with each progressive question.

question	question_completion
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

2.2 Percentage of question completion

It’s no surprise that 100% of users complete question 1 because this is the criteria for inclusion in the data set.

Q.2 and Q4 are both showing a 95% completion rate. This might be attributed to the ease for answer; fit and color are simple no intrusive questions.

Q.3 has an 20% drop rate, and this might be attributed to the need for trying glasses on to see if the shape suits the user.

Q.4 has a 25% drop rate. This question is the final question in the survey and is more intrusive than the previous four. Users may not remember when their last exam was, or they maybe embarrassed if they have not had an eye exam in many years.

Question	Completers	Raters	Percentage
1. What are you looking for?	500	500	100
2. What's your fit?	475	500	95
3. Which shapes do you like?	380	475	80
4. Which colors do you like?	361	380	95
5. When was your last eye exam?	270	361	74.79

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

3.1 Contents of Try-On Funnel databases

The table below lists the columns for the three data sets used with the Try-On Funnel.

- quiz contains 1000 rows
- home_try_on contains 750 rows
- purchase contains 495 rows

```sql
SELECT *
FROM quiz
LIMIT 5;

SELECT *
FROM home_try_on
LIMIT 5;

SELECT *
FROM purchase
LIMIT 5;
```

quiz	
user_id	TEXT
style	TEXT
fit	TEXT
shape	TEXT
color	TEXT

home_try_on	
user_id	TEXT
number_of_pairs	TEXT
address	TEXT

purchase	
user_id	TEXT
product_id	INTEGER
style	TEXT
model_name	TEXT
color	TEXT
price	INTEGER

3.2 Try on to purchase for individual users

The table below shows the query results for ten users detailing the funnel from home_try_on to is_purchased. This query includes the number of frames sent that the individual was able to sample.

```
SELECT DISTINCT q.user_id,
            h.user_id IS NOT NULL AS 'is_home_try_on',
            h.number_of_pairs,
            p.user_id IS NOT NULL AS 'is_purchased'
FROM quiz AS 'q'
LEFT JOIN home_try_on AS 'h'
            ON q.user_id = h.user_id
LEFT JOIN purchase AS 'p'
            ON q.user_id = p.user_id
LIMIT 10;
```

user_id	is_home_try_on	number_of_pairs	Is_purchased
4e8118dc-bb3d-49bf-85fc-cca8d83232ac	1	3 pairs	0
291f1cca-e507-48be-b063-002b14906468	1	3 pairs	1
75122300-0736-4087-b6d8-c0c5373a1a04	0		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		0
0143cb8b-bb81-4916-9750-ce956c9f9bd9	0		0
a4ccc1b3-cbb6-449c-b7a5-03af42c97433	1	5 pairs	0
b1dded76-cd60-4222-82cb-f6d464104298	1	3 pairs	0

4. Further Analysis

4.1 Try-on funnel analysis

```
WITH funnel AS (SELECT DISTINCT q.user_id,
h.user_id IS NOT NULL AS 'is_home_try_on',
h.number_of_pairs,
p.user_id IS NOT NULL AS 'is_purchased'
FROM quiz AS 'q'
LEFT JOIN home_try_on AS 'h'
          ON q.user_id = h.user_id
LEFT JOIN purchase AS 'p'
          ON q.user_id = p.user_id
)
SELECT SUM(is_home_try_on) AS 'sampled',
SUM(is_purchased) AS 'purchased'
FROM funnel;
```

sampled	purchased	conversion rate
750	495	66%

```
WITH funnel AS (SELECT DISTINCT q.user_id,
h.user_id IS NOT NULL AS 'is_home_try_on',
h.number_of_pairs AS 'number_of_pairs', …

… SELECT MAX(number_of_pairs) AS
'maximum', MIN (number_of_pairs) AS
'minimum'
FROM funnel;

SELECT number_of_pairs AS '#_pairs_tried',
Count (number_of_pairs) AS '#_orders'
FROM home_try_on
GROUP BY 1;
```

maximum	minimum
5 pairs	3 pairs
#_pairs_tried	**#_orders**
3 pairs	379
5 pairs	371

The query on the left shows the conversion data for users who sampled frames that lead to purchases.
The query on the right shows that the difference in conversion between those who sampled 5 pair and 3 pairs negligible. I started by checking if 3 pairs and 5 pairs were the range of samples in the first part of the query, then compared the orders in the second part of the query

4.2 Quiz analysis

```
SELECT style, COUNT(style) AS 'tstyle'
FROM quiz
GROUP BY style
ORDER BY tstyle DESC
LIMIT 5;

SELECT fit, COUNT(fit) AS 'tfit'
FROM quiz
GROUP BY fit
ORDER BY 2 DESC
LIMIT 5;

SELECT shape, COUNT(shape) AS 'shape'
FROM quiz
GROUP BY shape
ORDER BY 2 DESC
LIMIT 5;

SELECT color, COUNT(color) AS 'tcolor'
FROM quiz
GROUP BY color
ORDER BY 2 DESC
LIMIT 5;
```

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

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

shape	tshape
Rectangular	397
Square	326
Round	180
No Preference	97

color	tcolor
Tortoise	292
Black	280
Crystal	210
Neutral	114
Two-Tone	104

This query shows the break-down of the survey results for the quiz database for style, fit, shape and color

4.3 Purchase analysis

```
SELECT style, COUNT (style) AS 't_style'
FROM purchase
GROUP BY style;

SELECT model_name, COUNT(model_name) AS
't_name'
FROM purchase
GROUP BY model_name;
ORDER BY 2 DESC;

SELECT color, COUNT (color) AS 't_color'
FROM purchase
GROUP BY color;
ORDER BY 2 DESC;

SELECT price, COUNT (price) AS 't_price'
FROM purchase
GROUP BY price
ORDER BY 1 DESC;
```

This query shows purchase information for Warby Parker sales. It is broken-down by style, model_name, price and color. Interesting that the lowest cost frame has the lowest sales.

style	t_style
Men's Styles	243
Women's Styles	252

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

price	t_price
150	193
95	261
50	41

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

5. Conclusion

5.1 Conclusions

```
SELECT model_name, price
FROM purchase
WHERE price = 50
GROUP BY model_name;
```

model_name	price
Monocle	50

```
SELECT model_name, price
FROM purchase
GROUP BY model_name
GROUP BY price DESC;
```

model_name	price
Dawes	150
Lucy	150
Brady	95
Eugene Narrow	95
Olive	95
Monocle	50

```
SELECT model_name, color,
COUNT (color) AS 'total'
FROM purchase
GROUP By color
ORDER BY model_name;
```

model_name	color
Brady	Layered Tortoise Matte
Brady	Sea Glass Gray
Dawes	Driftwood Fade
Eugene Narrow	Rose Crystal
Eugene Narrow	Rosewood Tortoise
Lucy	Elderflower Crystal
Lucy	Jet Black
Monocle	Endangered Tortoise
Olive	Pearled Tortoise

A quick follow up query shows that cheapest frame is a monocle. We can then look at how much each model costs and compare it the the t_style on slide 14 to see that the Eugene Narrow is the highest selling frame at the mid-price point.
A simple query shows the colors available for each model.
I'm stoked to start applying this knowledge to my work.
Thanks!