

SQL Capstone Templates

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WARBY PARKER Funnels

Learn SQL from Scratch

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1. Get familiar with WARBY PARKER

1.1 Get familiar with the company

[Warby Parker](#) is a transformative lifestyle brand with a lofty objective: to offer designer eyewear at a revolutionary price while leading the way for socially conscious businesses. Founded in 2010 and named after two characters in an early Jack Kerouac journal, Warby Parker believes in creative thinking, smart design, and doing good in the world. For every pair of eyeglasses and sunglasses sold, a pair is distributed to someone in need.

2. What is the Quiz Funnel

2.1 Quiz Funnel

Quiz Funnel:
To help users find their perfect frame, Warby Parker has a Style Quiz that has the following questions:

- "What are you looking for?"
- "What's your fit?"
- "Which shapes do you like?"
- "Which colors do you like?"
- "When was your last eye exam?"

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

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

The table survey has three columns, question, user_id and response

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

Query Results		
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

2.2 Responses per question

Users will "give up" at different points in the survey. Let's analyze how many users move from Question 1 to Question 2, etc.

Create a quiz funnel using the GROUP BY command.

What is the number of responses for each question?

500 users answered the 1st question

475 users answered the 2nd question

380 users answered the 3rd question

361 users answered the 4th question

270 users answered the 5th question

```
SELECT question, COUNT(DISTINCT user_id) FROM survey GROUP BY question;
```

Query Results	
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

2.3 Question Completion Rate

Question	% Answered
1. What are you looking for?	100%
2. What's your fit?	95%
3. Which shapes do you like?	80%
4. Which colors do you like?	95%
5. When was your last eye exam?	75%

The 5th question about the last eye exam has the lower completion rate, I think it is due to the fact that people have not taken an eye exam or do not recall when was the last time they took one.

Also the 3rd question has 80% completion rate, I think it is because 20% of the people do not like any of the shapes or the question might be just irrelevant to the

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

3 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.

The data will be distributed across three tables:

quiz

home_try_on

purchase

3.1 Table preview quiz, home try on and purchase

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

Query Results					
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	
user_id	number_of_pairs		address		
d8add87-3217-4429-9a01-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-acc6-49a7bb46c586	3 pairs		347 Madison Square N		
3bc8f97f-2336-4dab-bd86-e391609dab97	5 pairs		182 Cornelia St		
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

The table quiz has the columns user_id, style, fit, shape and color

The table home_try_on has the columns user_id, number_of_pairs and address

The table purchase has the columns user_id, product_id, style, model_name, color and price

3.2 Table preview quiz, home try on and purchase

From the previous tables, we can create two nested left joins in order to find out from the people that took the quiz, how many people took the trial, and finally how many people actually purchased

```
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_purchase'  
FROM quiz q  
LEFT JOIN home_try_on h  
    ON q.user_id = h.user_id  
LEFT JOIN purchase p  
    ON p.user_id = q.user_id  
LIMIT 10;
```

Query Results			
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 Conversion from Quiz takers > Home triers > Purchase

We can analyze the data more in depth by checking from the quiz takers, how many tried at home and how many actually made a purchase

```
WITH funnels AS (  
  SELECT DISTINCT q.user_id,  
    h.number_of_pairs,  
    h.user_id IS NOT NULL AS  
  'is_home_try_on',  
    p.user_id IS NOT NULL AS  
  'is_purchase'  
  FROM quiz q  
  LEFT JOIN home_try_on h  
    ON q.user_id = h.user_id  
  LEFT JOIN purchase p  
    ON p.user_id = q.user_id)  
SELECT COUNT(*) AS 'Quiz Takers',  
  SUM(is_home_try_on) AS 'Tried at home',  
  SUM(is_purchase) AS 'Purchased',  
  1.0 * SUM(is_home_try_on) /  
COUNT(user_id) AS 'q>h conversion',  
  1.0 * SUM(is_purchase) /  
SUM(is_home_try_on) AS 'h>p conversion'  
FROM funnels;
```

Query Results				
Quiz Takers	Tried at home	Purchased	q>h conversion	h>p conversion
1000	750	495	0.75	0.66

75% of the quiz takers tried at home

66% of the home triers actually made a purchase

3.4.1 What is better, provide 3 or 5 pairs to try

We can analyze if providing 3 pairs has more conversion rate than providing 5

```
WITH funnels AS (  
  SELECT DISTINCT q.user_id,  
    h.number_of_pairs,  
    h.user_id IS NOT NULL AS  
    'is_home_try_on',  
    p.user_id IS NOT NULL AS  
    'is_purchase'  
  FROM quiz q  
  LEFT JOIN home_try_on h  
    ON q.user_id = h.user_id  
  LEFT JOIN purchase p  
    ON p.user_id = q.user_id  
  WHERE h.number_of_pairs = '3 pairs')  
SELECT  
  SUM(is_home_try_on) AS '3 Pairs',  
  SUM(is_purchase) AS 'Purchased',  
  1.0 * SUM(is_purchase) /  
  SUM(is_home_try_on) AS 'h>p Conversion'  
FROM funnels;
```

Query Results		
3 Pairs	Purchased	h>p Conversion
379	201	0.530343007915567

53.03 % of the 378 people who tried at home made a purchase

3.4.2 What is better, provide 3 or 5 pairs to try

We can analyze if providing 3 pairs has more conversion rate than providing 5

```
WITH funnels AS (  
  SELECT DISTINCT q.user_id,  
    h.number_of_pairs,  
    h.user_id IS NOT NULL AS  
  'is_home_try_on',  
    p.user_id IS NOT NULL AS  
  'is_purchase'  
  FROM quiz q  
  LEFT JOIN home_try_on h  
    ON q.user_id = h.user_id  
  LEFT JOIN purchase p  
    ON p.user_id = q.user_id  
  WHERE h.number_of_pairs = '5 pairs')  
SELECT  
  SUM(is_home_try_on) AS '5 Pairs',  
  SUM(is_purchase) AS 'Purchased',  
  1.0 * SUM(is_purchase) /  
SUM(is_home_try_on) AS 'h>p Conversion'  
FROM funnels;
```

Query Results		
5 Pairs	Purchased	h>p Conversion
371	294	0.792452830188679

79.24% of the 371 people who tried at home made a purchase

It is considerable much better to provide 5 pairs instead of 3 pairs to try on at home, there is almost a 30% more conversion rate

4. Other Results

4.1 Other results, Common Style in table quiz

We can analyze the most common style from the quiz table

```
SELECT style AS Style,  
       COUNT(*) AS Number  
FROM quiz  
GROUP BY Style  
ORDER by Number DESC;
```

Query Results	
Style	Number
Women's Styles	469
Men's Styles	432
I'm not sure. Let's skip it.	99

It is slightly more common Women's style than men

4.2 Other results, Common Shape in table quiz

We can analyze the most common shape from the quiz table

```
SELECT shape AS Shape,  
COUNT(*) AS Amount  
FROM quiz  
GROUP BY Shape  
ORDER by Amount DESC;
```

Query Results	
Shape	Amount
Rectangular	397
Square	326
Round	180
No Preference	97

Rectangular and Square shape are the most popular choices