



Warby Parker Funnels

Learn SQL from Scratch

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Quiz Funnel

1.1 Quiz Funnel

What columns does Warby Parker's 'survey' table have?

- **question:** The questions asked in Warby Parker's Style Quiz
- **user_id:** The respondent answering each question
- **response:** The response to each questions

```
1 --1. Understand the Warby Parker quiz
2 SELECT *
3 FROM survey
4 LIMIT 10;
5
```

question	user_id	response
1. What are you looking for?	005e7f99-d48c-4fce-b605-10506c85aaaf7	Women's Styles
2. What's your fit?	005e7f99-d48c-4fce-b605-10506c85aaaf7	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

1.2-3 Quiz Funnel

What is the number of responses for each question? What is the response rate for each question?

- **Question 1:** 500 responses, a response rate of 100%
- **Question 2:** 475 responses, a response rate of 95%
- **Question 3:** 380 responses, a response rate of 80%
- **Question 4:** 361 responses, a response rate of 95%
- **Question 5:** 270 responses, a response rate of 75%

Note: Used `SELECT COUNT(DISTINCT user_id) FROM survey;` to confirm there were 500 respondents total

Which question(s) of the quiz have a lower response rate? Why might that be?

- **When was your last eye exam?** (Question 5) was the least-answered question—likely because readers don't remember the answer or haven't had an eye exam
- **Which shapes do you like?** (Question 3) was the second least-answered question—perhaps readers have more trouble deciding their preferred shape

```
1 --2. Understand at which points users "give up" the quiz
2
3 SELECT question, COUNT(DISTINCT user_id) AS 'responses'
4 FROM survey
5 GROUP BY question;
6
```

question	responses
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 Funnel

2.4 Home Try-On Funnel

What are the columns in the ‘quiz’, ‘home_try_on’ and ‘purchase’ tables?

quiz table columns include:

- **user_id**: The Warby Parker (WP) customer completing the quiz
- **style**: The customer’s recommended style of WP glasses
- **fit**: The customer’s recommended fit of WP glasses
- **shape**: The customer’s recommended shape of WP glasses
- **color**: The customer’s recommended color of WP glasses

```
1 --4. Understand Warby Parker's home try-on tracking
2
3 SELECT *
4 FROM quiz
5 LIMIT 5;
6
7 --Columns are: user_id, style, fit, shape, color
8
9 SELECT *
10 FROM home_try_on
11 LIMIT 5;
12
13 --Columns are: 'user_id', 'number_of_pairs', 'address'
14
15 SELECT *
16 FROM purchase
17 LIMIT 5;
18
19 --Columns are: 'user_id', 'product_id', 'style',
  'model_name', 'color', 'price'
```

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

2.4 Home Try-On Funnel (Cont.)

What are the columns in the ‘quiz’, ‘home_try_on’ and ‘purchase’ tables?

home_try_on table columns include:

- **user_id**: The respondent trying on the WP glasses at home
- **number_of_pairs**: The number of pairs of glasses sent to the customer to try on at home
- **address**: The customer’s address

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-accc-49a7bb46c586	3 pairs	347 Madison Square N
3bc8f97f-2336-4dab-bd86-e391609dab97	5 pairs	182 Cornelia St

2.4 Home Try-On Funnel (Cont.)

What are the columns in the ‘quiz’, ‘home_try_on’ and ‘purchase’ tables?

purchase table columns include:

- **user_id**: The respondent trying on the WP glasses at home
- **product_id**: The WP product the customer is purchasing
- **style**: The style of the glasses the customer is purchasing
- **model_name**: The model of the glasses the customer is purchasing
- **color**: The color of the glasses the customer is purchasing
- **price**: The price of the glasses the customer is purchasing

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
0176fbf3-9c51-4b1c-b593-87edab3c54cb	10	Women's Styles	Eugene Narrow	Rosewood Tortoise	95
01fdf106-f73c-4d3f-a036-2f3e2ab1ce06	8	Women's Styles	Lucy	Jet Black	150

2.5 Home Try-On Funnel

Create a table with columns ‘user_id’, ‘is_home_try_on’, ‘number_of_pairs’, and ‘is_purchase’ using the ‘quiz’, ‘home_try_on’ and ‘purchase’ tables.

- Created a temporary table named ‘**funnel**’
- Used LEFT JOIN to create the table
- ‘**funnel**’ contains columns user_id, is_home_try_on, number_of_pairs, and is_purchase
- NULL and 0 value cells tell us when a user did not make it to a step in the funnel

```
1 --5. Create a new table with columns 'user_id',
2   'is_home_try_on', 'number_of_pairs', 'is_purchase'
3 WITH funnel AS
4 (SELECT
5   DISTINCT quiz.user_id,
6   home_try_on.user_id IS NOT NULL AS 'is_home_try_on',
7   home_try_on.number_of_pairs,
8   purchase.user_id IS NOT NULL AS 'is_purchase'
9 FROM quiz
10 LEFT JOIN home_try_on
11   ON quiz.user_id = home_try_on.user_id
12 LEFT JOIN purchase
13   ON purchase.user_id = quiz.user_id)
14 SELECT * FROM funnel
15 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	NULL	0
75bc6ebd-40cd-4e1d-a301-27ddd93b12e2	1	5 pairs	0
ce965c4d-7a2b-4db6-9847-601747fa7812	1	3 pairs	1

Funnel Analysis

2.6 Funnel Analysis

Calculate overall conversion rates. Compare conversion from 'quiz' → 'home_try_on' and 'home_try_on' → 'purchase'

- Of 1,000 browses, 750 converted to home try-on conversions (rate of 75%)
- Of 750 home try-ons, 495 converted to purchase conversions (rate of 66%)
- While it isn't surprising to see a higher drop-off from try-on to purchase than from browse to try-on, it's encouraging that 2 in 3 customers who try on the glasses purchase a pair

```
1 --6. Analyze the funnel!
2
3 WITH funnel AS
4 (SELECT
5   DISTINCT quiz.user_id,
6   home_try_on.user_id IS NOT NULL AS 'is_home_try_on',
7   home_try_on.number_of_pairs,
8   purchase.user_id IS NOT NULL AS 'is_purchase'
9 FROM quiz
10 LEFT JOIN home_try_on
11   ON quiz.user_id = home_try_on.user_id
12 LEFT JOIN purchase
13   ON purchase.user_id = quiz.user_id)
14 SELECT COUNT(*) as 'browses',
15   SUM(is_home_try_on) as 'home_try_on_conversions',
16   SUM(is_purchase) as 'purchase_conversions',
17   1.0 * SUM(is_home_try_on) / COUNT(*) as 'browse_conversion_rate',
18   1.0 * SUM(is_purchase) / SUM(is_home_try_on) as 'home_try_on_conversion_rate'
19 FROM funnel;
```

browses	home_try_on_conversions	purchase_conversions	browse_conversion_rate	home_try_on_conversion_rate
1000	750	495	0.75	0.66

2.6 Funnel Analysis (cont.)

Calculate the difference in purchase rates between customers with 3 and 5 'number_of_pairs'

- 379 customers were sent 3 pairs, and 201 (53%) converted
- 371 customers were sent 5 pairs, and 294 (79%) converted
- 5 pairs for at-home try-on have a MUCH higher conversion rate! As long as the cost of sending customers 5 pairs instead of 3 isn't prohibitive, Warby Parker should move to a home-try-on of 5 pairs for all customers moving forward

```
1 WITH funnel AS
2 (SELECT DISTINCT quiz.user_id,
3   home_try_on.user_id IS NOT NULL AS 'is_home_try_on',
4   home_try_on.number_of_pairs,
5   purchase.user_id IS NOT NULL AS 'is_purchase'
6   FROM quiz
7   LEFT JOIN home_try_on
8     ON quiz.user_id = home_try_on.user_id
9   LEFT JOIN purchase
10    ON purchase.user_id = quiz.user_id)
11 SELECT number_of_pairs,
12   COUNT(user_id) AS 'users_per_num_pairs',
13   SUM(is_purchase) AS 'num_pairs_conversions',
14   1.0 * SUM(is_purchase) / COUNT(user_id) AS 'num_pairs_conversion_rate'
15   FROM funnel
16   WHERE number_of_pairs IS NOT NULL
17   GROUP BY number_of_pairs;
```

number_of_pairs	users_per_num_pairs	num_pairs_conversions	num_pairs_conversion_rate
3 pairs	379	201	0.530343007915567
5 pairs	371	294	0.792452830188679

2.6 Funnel Analysis (cont.)

Analyze the purchases at different price points

- The prices of glasses purchased range from \$50 – \$150
- Eugene Narrow, the most-bought model with 116 purchases, is \$95, while Dawes, a close second with 107 purchases, is \$150—the maximum price point. It would be interesting to see the conversion of customers who tried on both Eugene AND Dawes choosing one pair over the other

Note: The information provided doesn't enable us to look at the prices for the glasses tried on so we can't account for that in the funnel, but pricing is still an interesting and important consideration when marketing a product

MAX(price)	min(price)
150	50

```
1 SELECT MAX(price), min(price)
2 FROM purchase;
3
4 SELECT model_name, COUNT(*), AVG(price)
5 FROM purchase
6 GROUP BY model_name
7 ORDER BY 2 DESC;
```

model_name	COUNT(*)	AVG(price)
Eugene Narrow	116	95.0
Dawes	107	150.0
Brady	95	95.0
Lucy	86	150.0
Olive	50	95.0
Monocle	41	50.0

THE END