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Warby Parker Funnel Analysis
Learn SQL from Scratch
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1.Get Familiar with Warby Parker

[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. WP applies funnel strategy for online sale, creating a Style quiz.

A funnel is the set of steps a visitor needs to go through before they can reach the conversion.

The purpose of this style quiz: to help users find their perfect frame and to understand visitors to boost sale.

Some comment from quiz funnel: From the question 3 to question 5, the completion rate gradually decreases. This suggests that:

- Q.3: users may do not know which one is a perfect choice for their face so it discourages users to complete the rest questions.
- Q.5: users may think this question is irrelevant for finding perfect frames. Because if users couldn't remember the last eye exam, they can choose option 'Let's skip it' not drop this question.

Question	No. response	Completion Rate
1. What are you looking for?	500	100%
2. What's your fit?	475	95%
3. Which shapes do you like?	380	76%
4. Which colors do you like?	361	72%
5. When was your last eye exam?	270	54%

```
-- Quiz Funnel

SELECT *
FROM survey
LIMIT 10;


-- Number of responses for each question

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

2. Quiz funnel analysis

Question	Result	Conversion Rate	Comment
1. What are you looking for?	• Men's style: 242 (48%) • Women's style: 209 (42%) • Skip it: 49 (10%)	100%	10% choose to 'skip it' may just want to get experience the survey, not intent to use home_try_on service. There is no these users on the home_try_on table.
2. What's your fit?	• Narrow: 208 (44%) • Medium: 132 (28%) • Wide: 88 (19%) • Skip it: 47 (10%)	95%	
3. Which shapes do you like?	• Rectangular: 141 (37%) • Square: 119 (31%) • Round: 91 (24%) • No Preference: 29 (8%)	76%	Users may be confuse about choosing the right fit for their face. WP should think a solution to improve the completion rate. WP can show example model for each of shapes with each size fit.
4. Which colors do you like?	• Tortoise: 117 (32%) • Black: 112 (31%) • Crystal: 69 (19%) • Neutral: 36 (10%) • Two-tone: 27 (7%)	72%	
5. When was your last eye exam?	• <1 year: 141 (52%) • 1-3 years: 56 (21%) • 3+ years: 37 (14%) • Skip it: 36 (13%)	54%	This quiz aims to help users find the perfect frames not reading glasses so this may discourage user to response.

```
-- Quiz Funnel

SELECT response, COUNT(*)
FROM survey
WHERE question LIKE '1.%'
GROUP BY 1
ORDER BY 2 DESC;
SELECT response, COUNT(*)
FROM survey
WHERE question LIKE '2.%'
GROUP BY 1
ORDER BY 2 DESC;
SELECT response, COUNT(*)
FROM survey
WHERE question LIKE '3.%'
GROUP BY 1
ORDER BY 2 DESC;
SELECT response, COUNT(*)
FROM survey
WHERE question LIKE '4.%'
GROUP BY 1
ORDER BY 2 DESC;
SELECT response, COUNT(*)
FROM survey
WHERE question LIKE '5.%'
GROUP BY 1
ORDER BY 2 DESC;
------------
SELECT s.user_id, h.user_id
FROM survey AS 's'
LEFT JOIN home_try_on AS 'h'
 on s.user_id = h.user_id
 where s.question like '1%'
 AND response like '%skip it%';
```

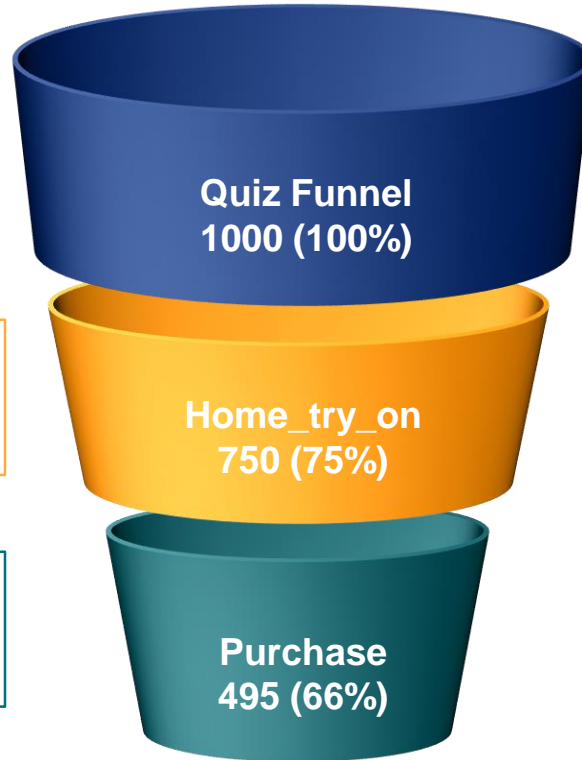# 3. Warby Parker's purchase: Quiz -> Home try-on -> Purchase

Columns Names

- User_id
- Style
- Fit
- Shape
- Color

- User_id
- Number_of pairs
- Address

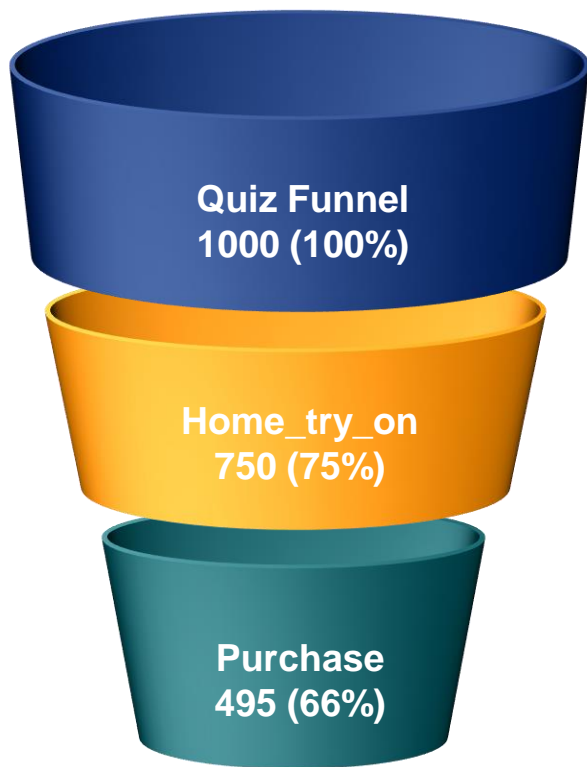- User_id
- Product_id
- Style
- Model_name
- Color
- Price

Home_try_on Funnel

Quiz Funnel
1000 (100%)

Home_try_on
750 (75%)

Purchase
495 (66%)

```
SELECT *
FROM quiz
LIMIT 5;

SELECT *
FROM home_try_on
LIMIT 5;

SELECT *
FROM purchase
LIMIT 5;
```

3. Warby Parker's purchase: Quiz -> Home try-on -> Purchase

Quiz Funnel
1000 (100%)

Home_try_on
750 (75%)

Purchase
495 (66%)

- Taking quiz takes few minutes for users but they still fully complete. It means they are interested in taking advantage of home_try_on campaign. However, why 25% of users doesn't take glasses through that campaign? Need to look more detail on quiz and home_try_on result.

- 66% of purchase is a good rate but it also means that WP spends much of money (44%) for shipping fee and stock management for those glasses which were not bought. What are the reasons?

```
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_purchase'
FROM quiz AS 'q'
LEFT JOIN home_try_on AS 'h'
                         ON q.user_id = h.user_id
LEFT JOIN purchase AS 'p'
                         ON p.user_id = q.user_id)
SELECT COUNT (*) AS 'num_quiz',
                SUM(is_home_try_on) AS 'num_HTO',
    SUM(is_purchase) AS 'num_purchase',
            1.0 * SUM(is_home_try_on)/ COUNT(user_id) AS 'quiz to HTO',
  1.0 * SUM(is_purchase)/ SUM(is_home_try_on) AS 'HTO to purchase'
FROM funnel;
```

4. A/B Test with 5-pair and 3-pair

Customers who get 5 pairs for Home Try-on have significantly high conversion rate!

|	3 pairs	5 pairs	Total
No of customer with Home Try-on	379	371	750
No of purchase	201	294	495
Conversion rate	53%	79%	66%

Recommended next actions:
- Find the reasons why users didn't buy items, because of wrong choice when choose home try-on items or because users just want to get experience of new frames.
- Analyze the features of 3 pairs and 5 pairs to find out what is the common between to group and which items get higher purchase rate to make suggestion in 3 pairs selection.
- Looking at all related revenue and profit between 2 group. Which one brings more benefit?

```
WITH '3_pairs' 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_purchase'
FROM quiz AS 'q'
LEFT JOIN home_try_on AS 'h'
            ON q.user_id = h.user_id
LEFT JOIN purchase AS 'p'
            ON p.user_id = q.user_id
where number_of_pairs like '3%')
SELECT SUM(is_home_try_on) AS 'num_HTO',
    SUM(is_purchase) AS 'num_purchase',
  1.0 * SUM(is_purchase)/ SUM(is_home_try_on) AS '3 pairs
purchase rate'
FROM '3_pairs';


WITH '5_pairs' 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_purchase'
FROM quiz AS 'q'
LEFT JOIN home_try_on AS 'h'
            ON q.user_id = h.user_id
LEFT JOIN purchase AS 'p'
            ON p.user_id = q.user_id
where number_of_pairs like '5%')
SELECT SUM(is_home_try_on) AS 'num_HTO',
    SUM(is_purchase) AS 'num_purchase',
  1.0 * SUM(is_purchase)/ SUM(is_home_try_on) AS '3 pairs
purchase rate'
FROM '5_pairs';
```

5. Purchase Analysis

- Eugene Narrow, Dawes and Brady is the top 3 model of sale.
- Pearled Tortoise, Driftwood Fade and Jet Black is the top 3 color of sale.
- Each gender has its own reference for the model. Need to take an analysis how many models WP has and why they only refer these models. Should WP invest more into these model for each gender?
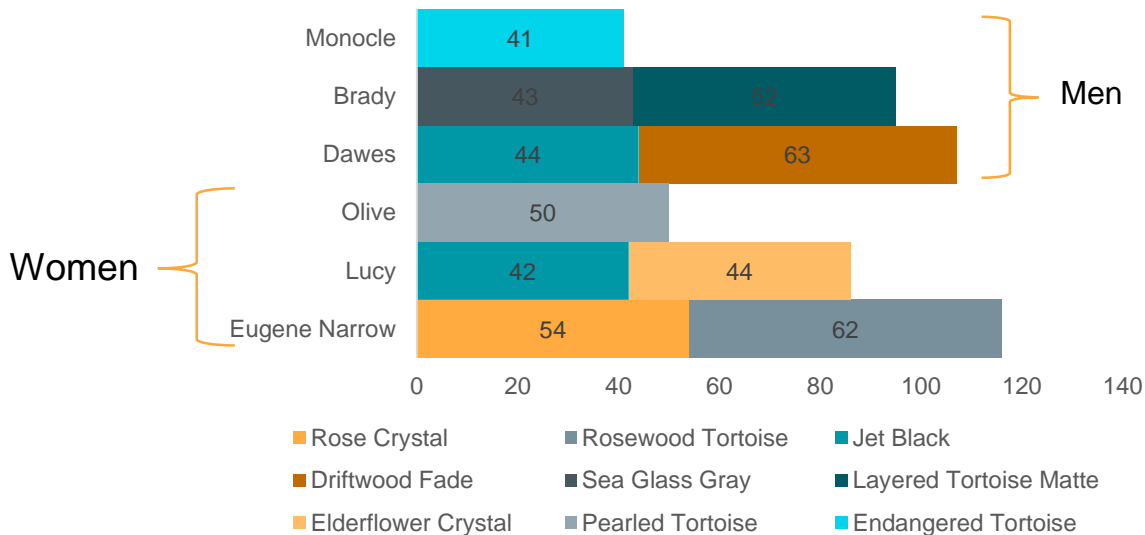


```
SELECT model_name, color, COUNT(user_id) AS 'No of
purchase'
FROM purchase
WHERE model_name LIKE 'Eu%'
GROUP BY 2
ORDER BY 3;
SELECT model_name, color, COUNT(user_id) AS 'No of
purchase'
FROM purchase
WHERE model_name LIKE 'Da%'
GROUP BY 2
ORDER BY 3;
SELECT model_name, color, COUNT(user_id) AS 'No of
purchase'
FROM purchase
WHERE model_name LIKE 'Bra%'
GROUP BY 2
ORDER BY 3;
SELECT model_name, color, COUNT(user_id) AS 'No of
purchase'
FROM purchase
WHERE model_name LIKE 'Lu%'
GROUP BY 2
ORDER BY 3;
SELECT model_name, color, COUNT(user_id) AS 'No of
purchase'
FROM purchase
WHERE model_name LIKE 'Oli%'
GROUP BY 2
ORDER BY 3;
SELECT model_name, color, COUNT(user_id) AS 'No of
purchase'
FROM purchase
WHERE model_name LIKE 'Mono%'
GROUP BY 2
ORDER BY 3;
```

5. Purchase Analysis

- The $95 price is popular among users. However, as below chart, it seems that the price follows the model which user purchases not depends on customer's expectation about price.
- There is not big difference between the sale for men's style in the price range $95 - $150. But for women's style, users seem consider price as one of criteria for buying, $150 items account for 46% of women's style purchase (116/252). Should WP think of pricing strategy?
- Although Monocle costs only $50 but it is the worst sale. WP should calculate all the related cost for this item: manufacture, marketing, employee cost, storage,… to consider whether keep selling this item in the future.

Price as model
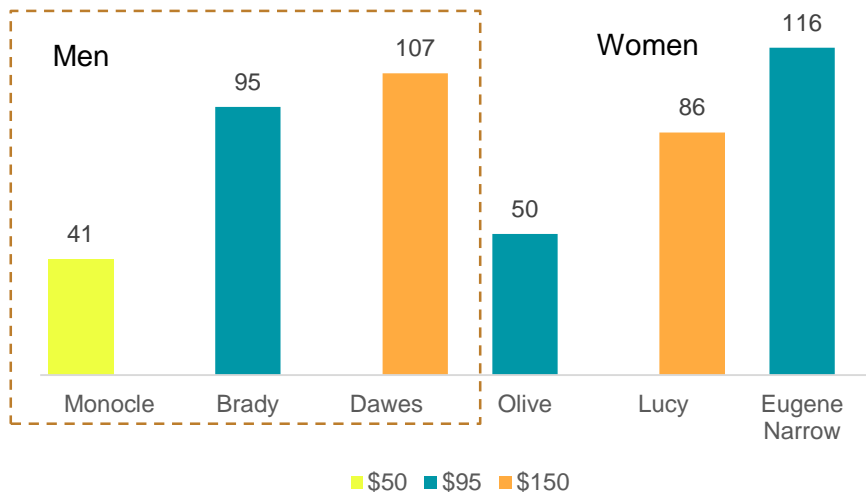
```
SELECT model_name, style, COUNT (*)
FROM purchase
WHERE price = '50'
GROUP BY 1
ORDER BY 2 DESC;
SELECT model_name, style, COUNT (*)
FROM purchase
WHERE price = '95'
GROUP BY 1
ORDER BY 2 DESC;
SELECT model_name, style, COUNT (*)
FROM purchase
WHERE price = '150'
GROUP BY 1
ORDER BY 2 DESC;
```

6. Findings and Recommendations

- Quiz takers start to drop response from the question asking about the face's size and shape of glasses
  -> WP may consider to design the size chart and certain illustrations for each of shape
  -> help WP understand more users and reaching potential customers.

- Considerable difference in purchase conversion rate for 5-pair (79%) and 3-pair (53%) needs to be analyzed and solved.
  * Why users didn't buy items, because of wrong choice when choose home try-on items or because users just want to get experience of new frames.
  * What is the common between to group and which items get higher purchase rate to make suggestion in 3 pairs selection.
  * Looking at all related revenue and profit between 2 group. Which one brings more benefit?

- Purchase summary:
  * Eugene Narrow, Dawes and Brady is the top 3 model of sale.
  * Pearled Tortoise, Driftwood Fade and Jet Black is the top 3 color of sale.
  * Not big difference between the sale for men's style in the price range $95 - $150. Rethinking of pricing strategy for each gender?