USAGE FUNNELS WITH WARBY PARKER

LEARN SQL FROM SCRATCH

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TUESDAY, JUNE 19, 2018

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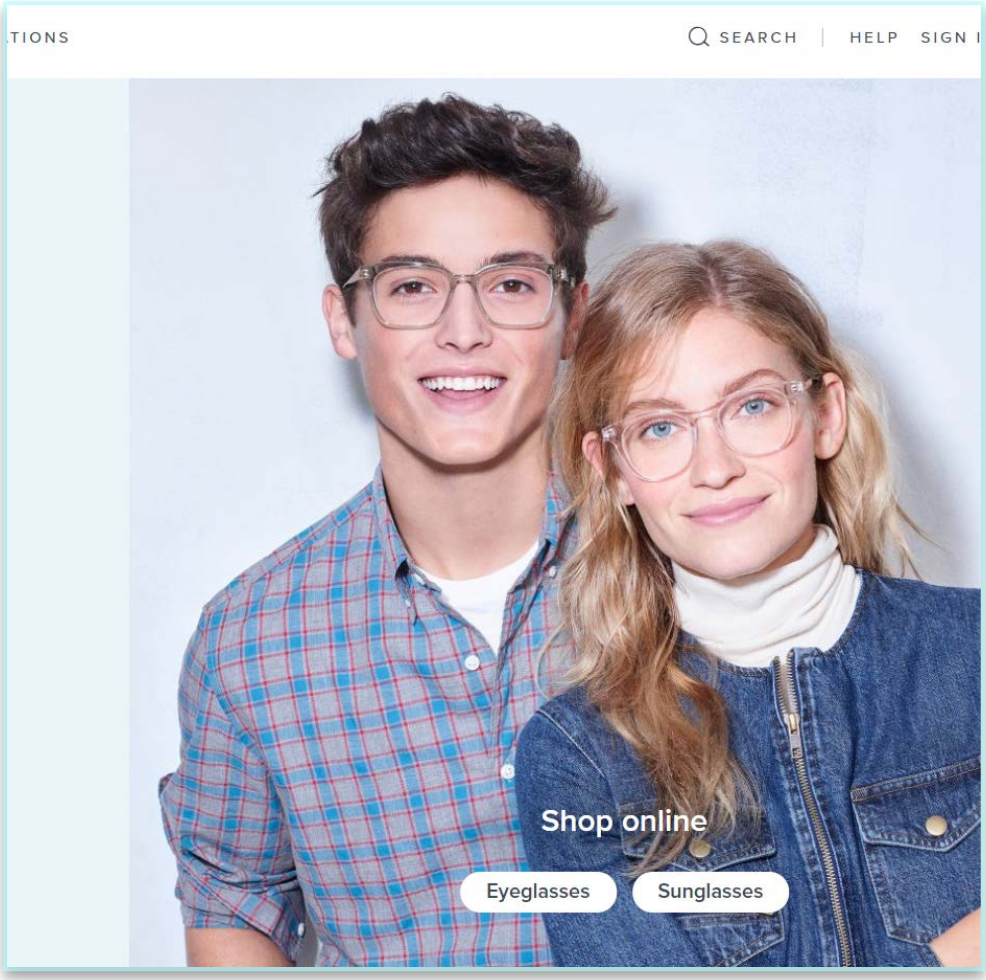
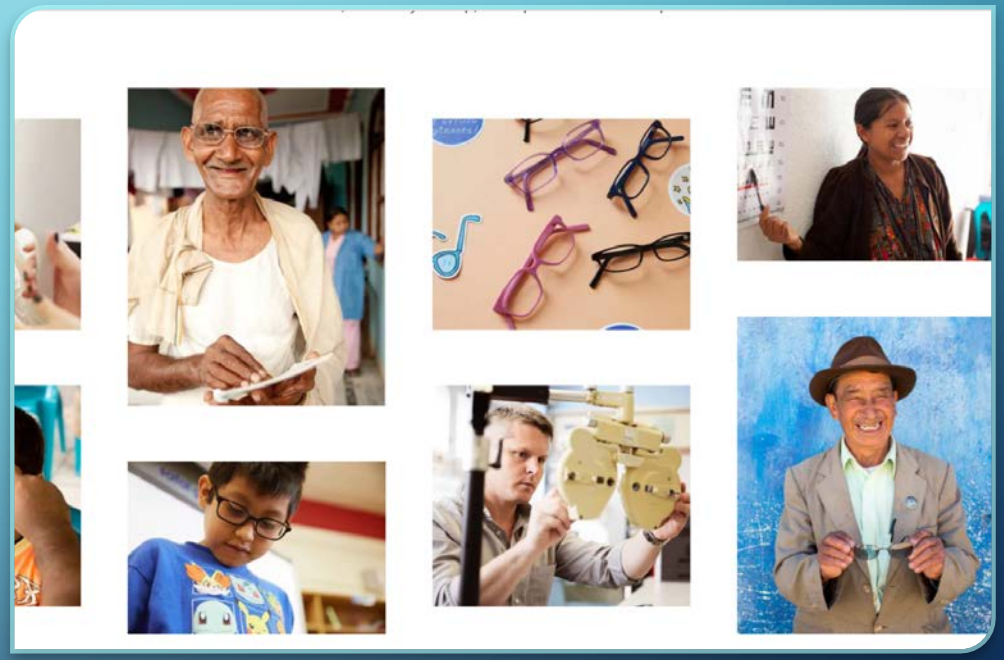
WELCOME TO WARBY PARKER

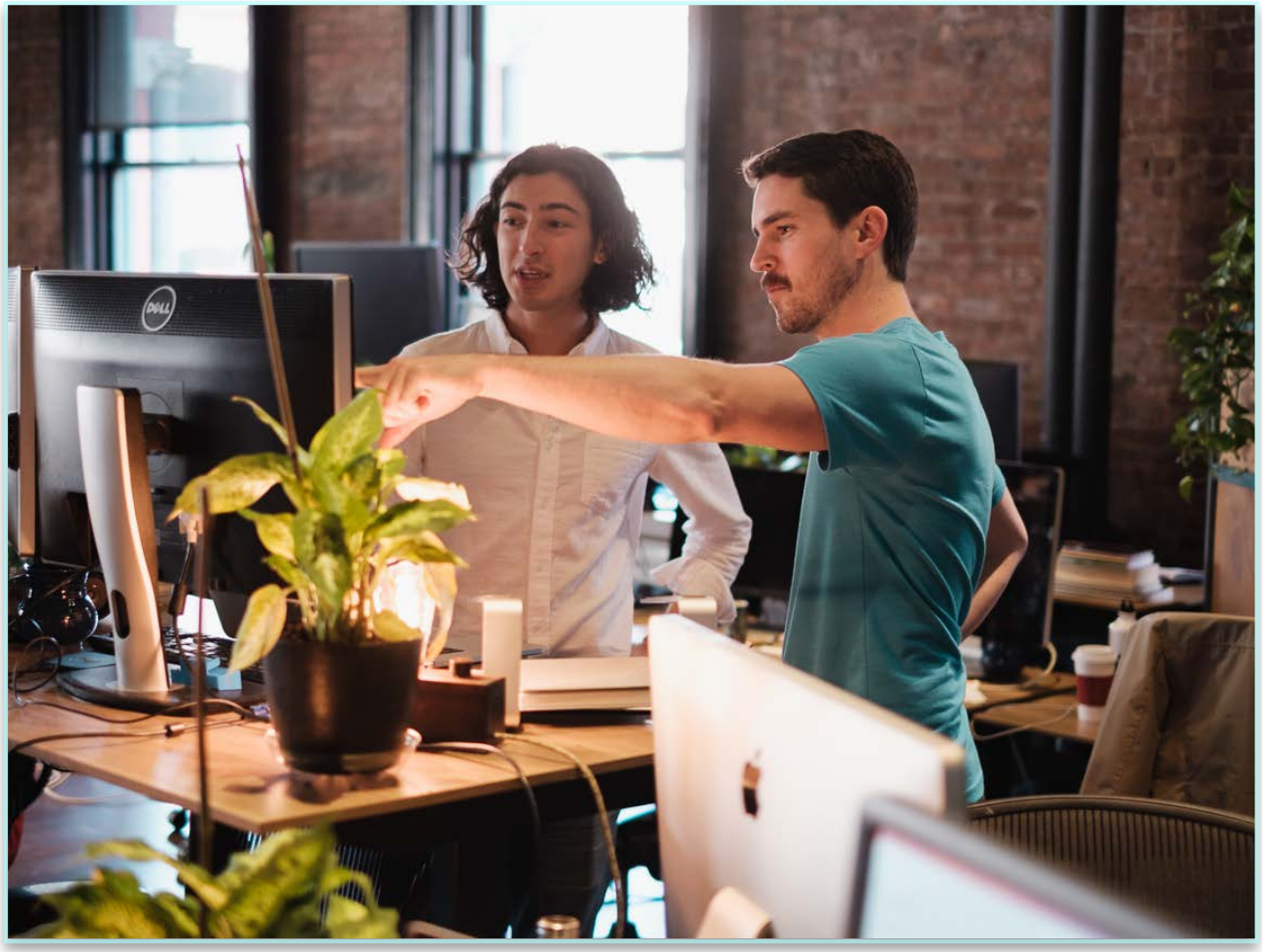
LET'S JUMP INTO WHAT WARBY PARKER IS AND HOW WE STAND OUT AMONG THE COMPETITORS.



WHAT IS WARBY PARKER?

Established in 2010, Warby Parker is an eyewear company who set out to change its industry by introducing an affordable alternative on the designer prescription eyewear we all love. The best part is that through our non-profit partners like VisionSpring for every pair of glasses sold, someone in need receives a pair too!





PROJECT OVERVIEW

DIVING INTO THE CAPSTONE PROJECT, WE'LL TAKE A LOOK AT WARBY PARKER'S STYLE QUIZ TO DEMONSTRATE SQL'S USAGE OF FUNNELS.

CAPSTONE: FUNNELS WITH WARBY PARKER

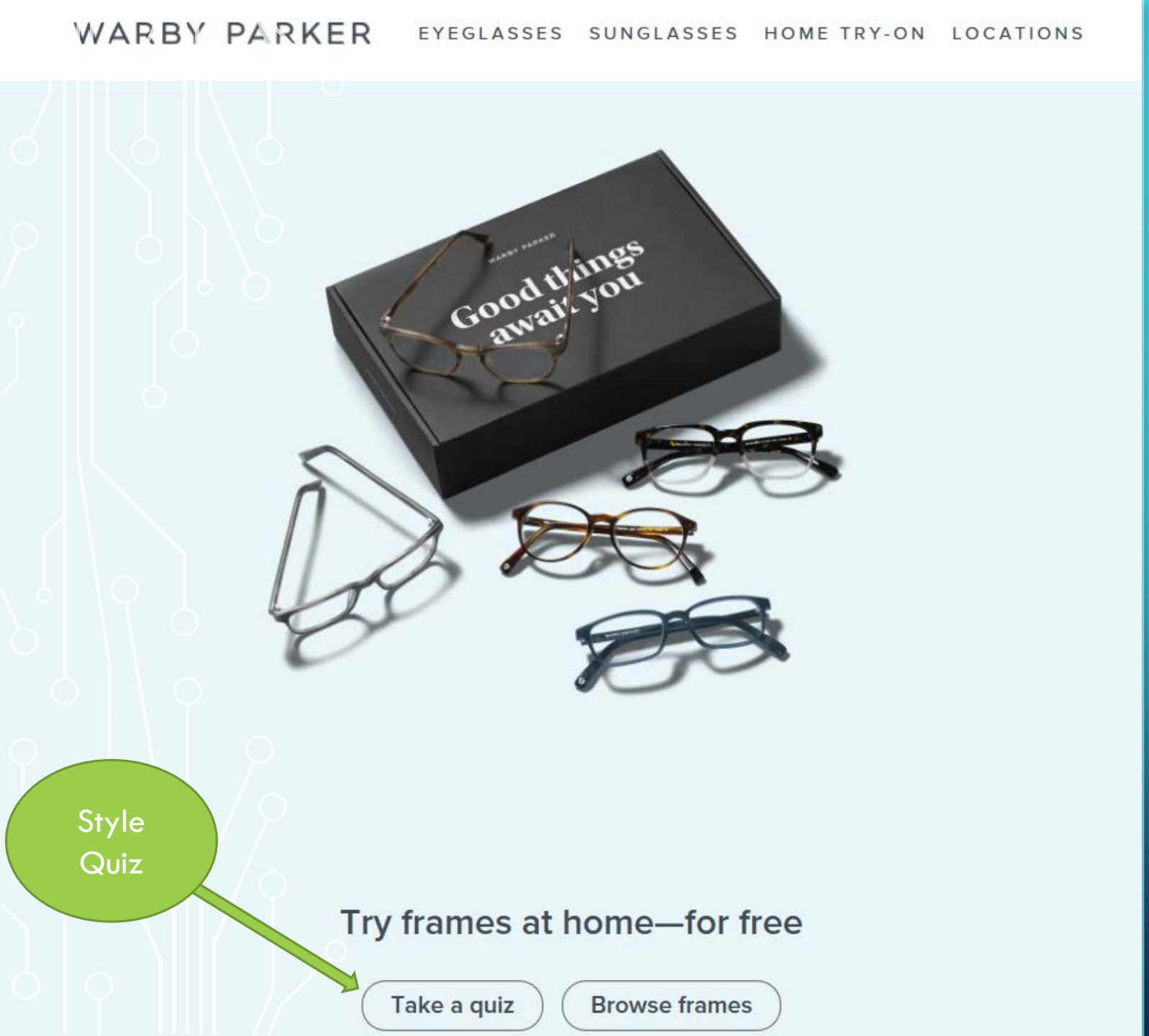
Throughout this project, Warby Parker's marketing funnels were analyzed to calculate various conversion rates. The outline below shows the data to be analyzed.

Quiz Funnel:

- ***Survey***: The Style Quiz is used to help the clients find their perfect frame.

Home Try-On Funnel:

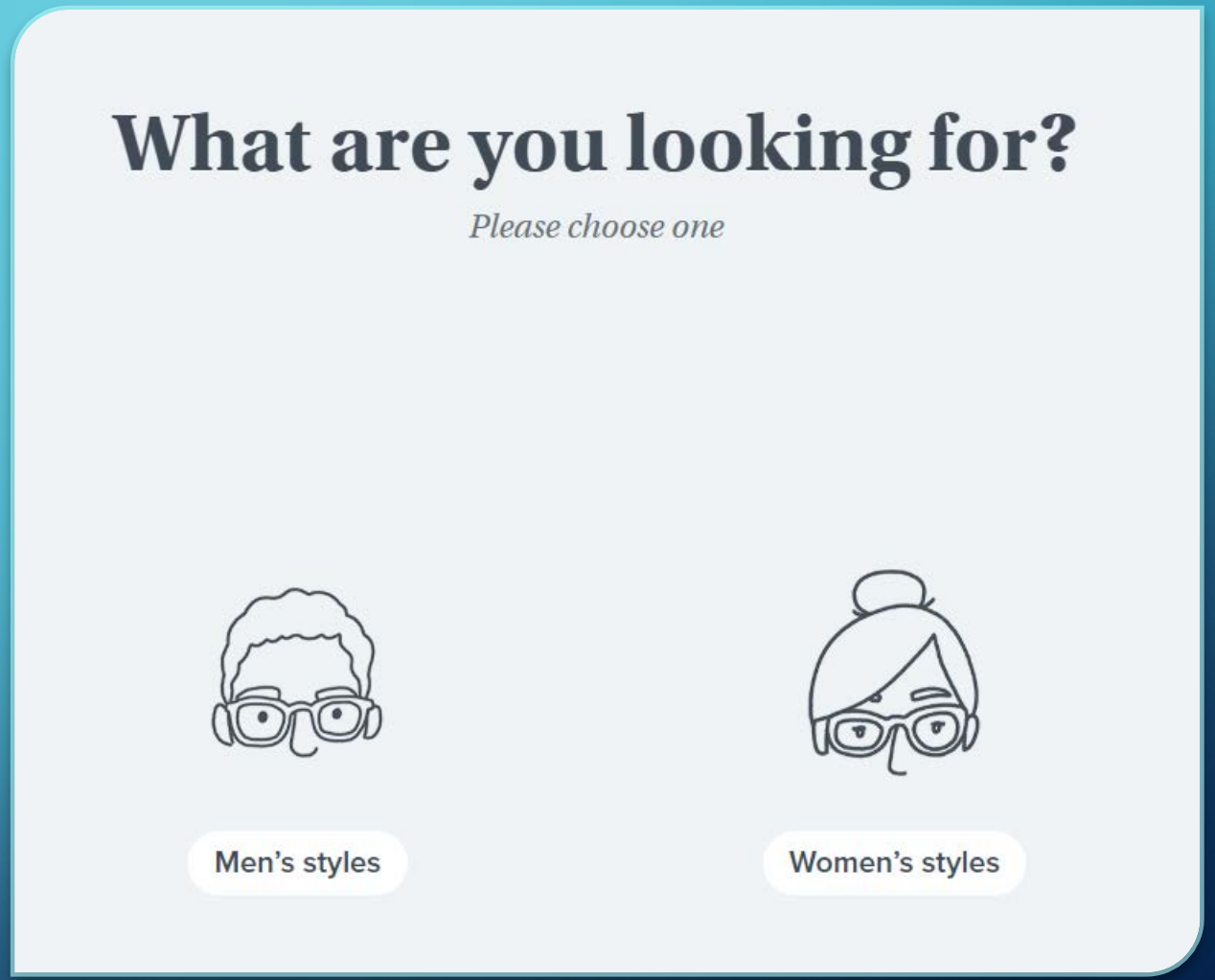
- ***Quiz:*** This is the data from the style quiz.
- ***Home-Try-On***: During this stage an A/B Test will be conducted. The test will consist of the following:
  - 50% of the users will get 3 pairs to try on
  - 50% of the users will get 5 pairs to try on
- ***Purchase:*** This hold the data of which users purchased products and what they were.



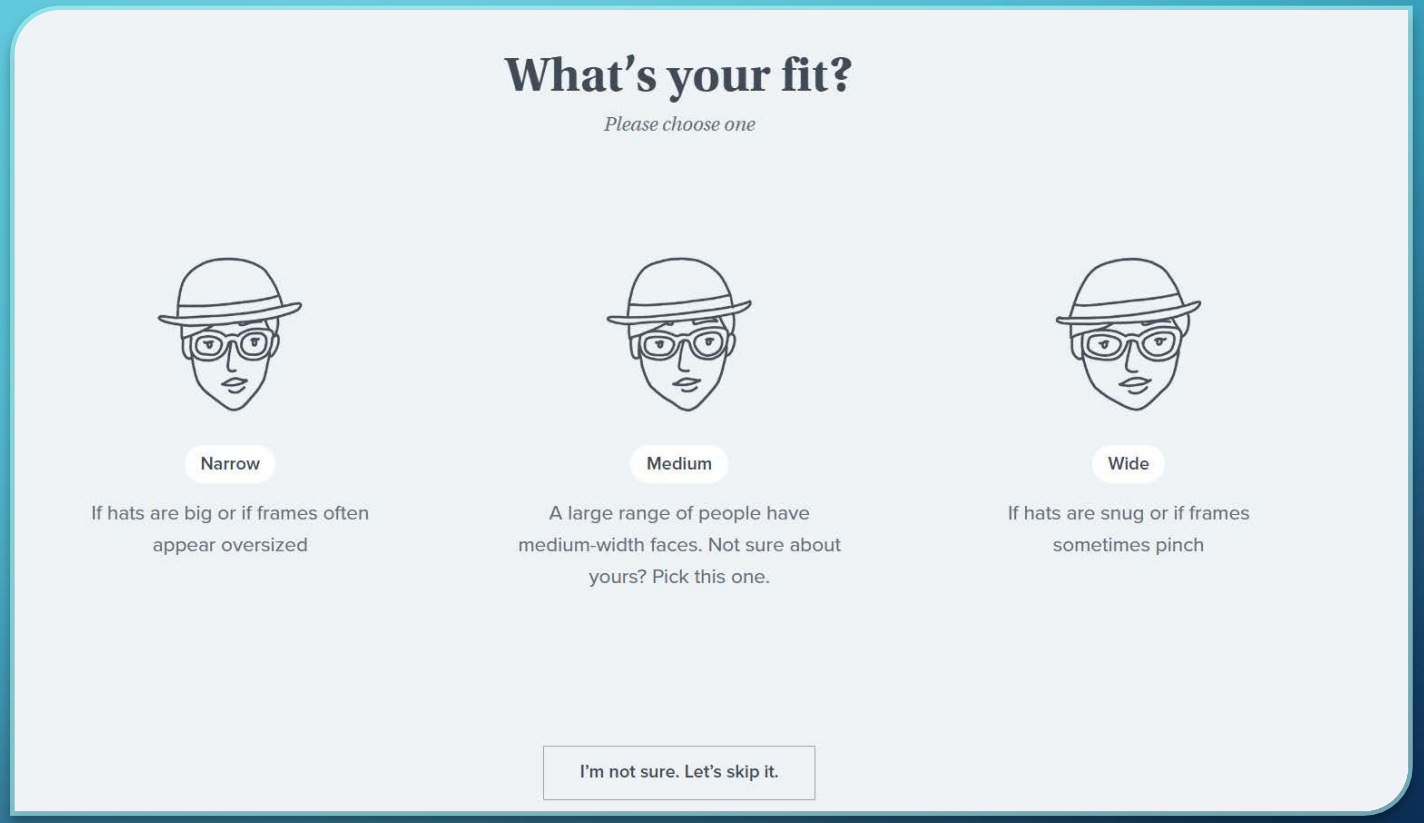
ANALYZE THE STYLE QUIZ FUNNEL

HERE WE WILL START AT THE HOME PAGE OF WARBY PARKER'S WEBSITE WHERE THE STYLE QUIZ IS LOCATED.

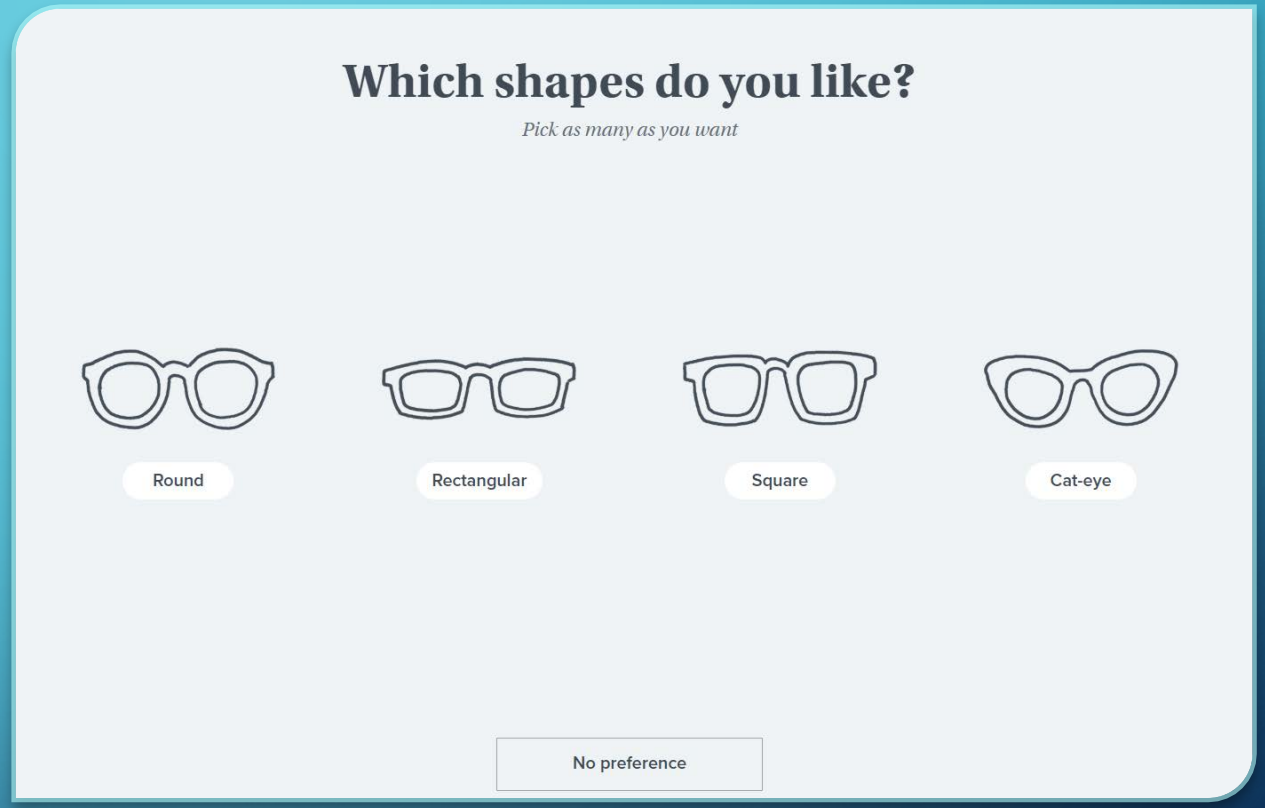
In the beginning of the style quiz, all of the users answered the first question giving it the highest completion rate. The simplest explanation for this elevated rate is that users are more eager to answer atleast the most basic first question.



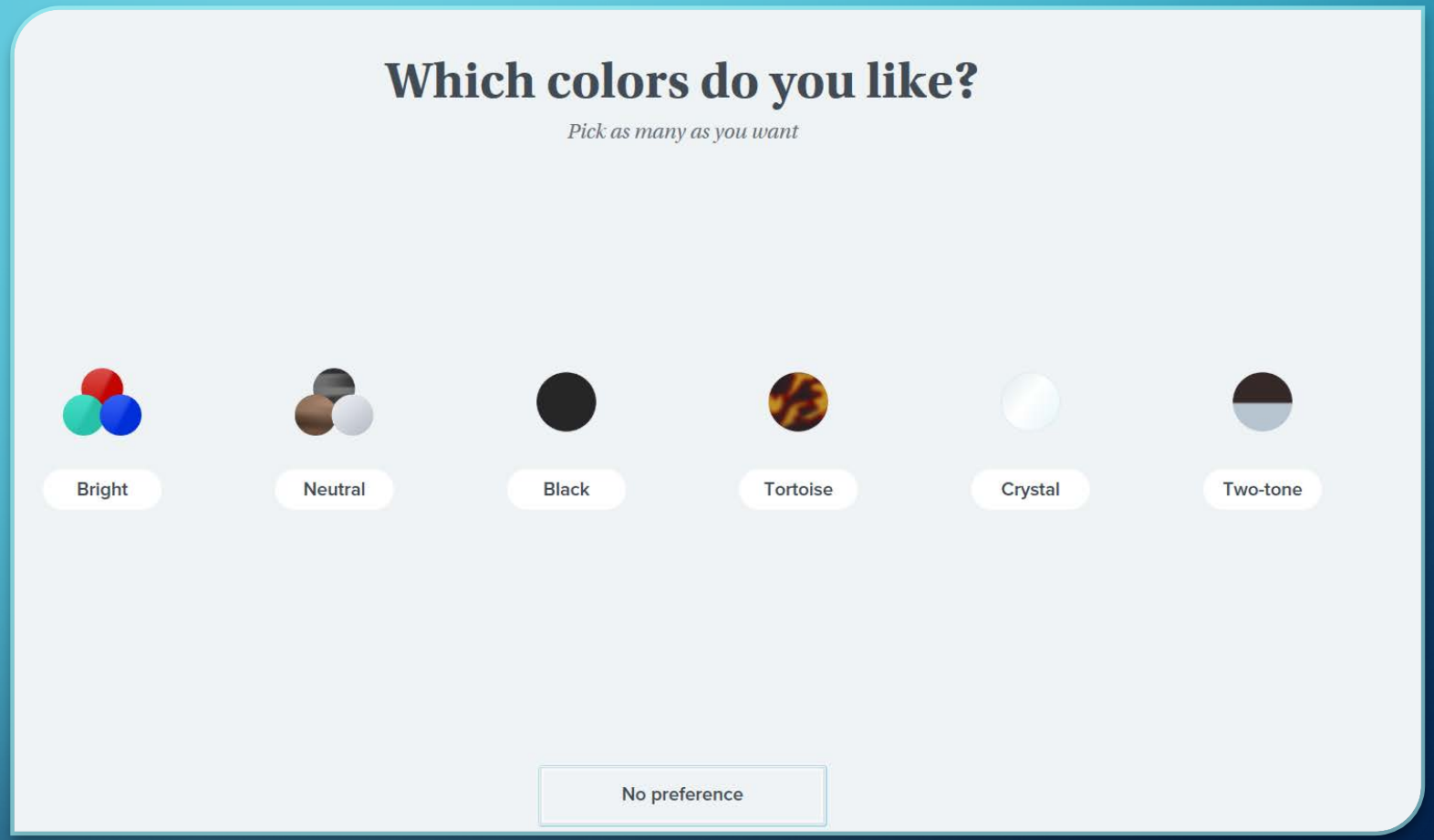
At question number two, the completion rate drops by 5 percent. The 25 users that stopped the quiz could have been struggling to fit themselves into a category or they could have been too busy.



At question three, 95 more users stopped taking the quiz. This is the highest number of users to stop taking the quiz at any point.

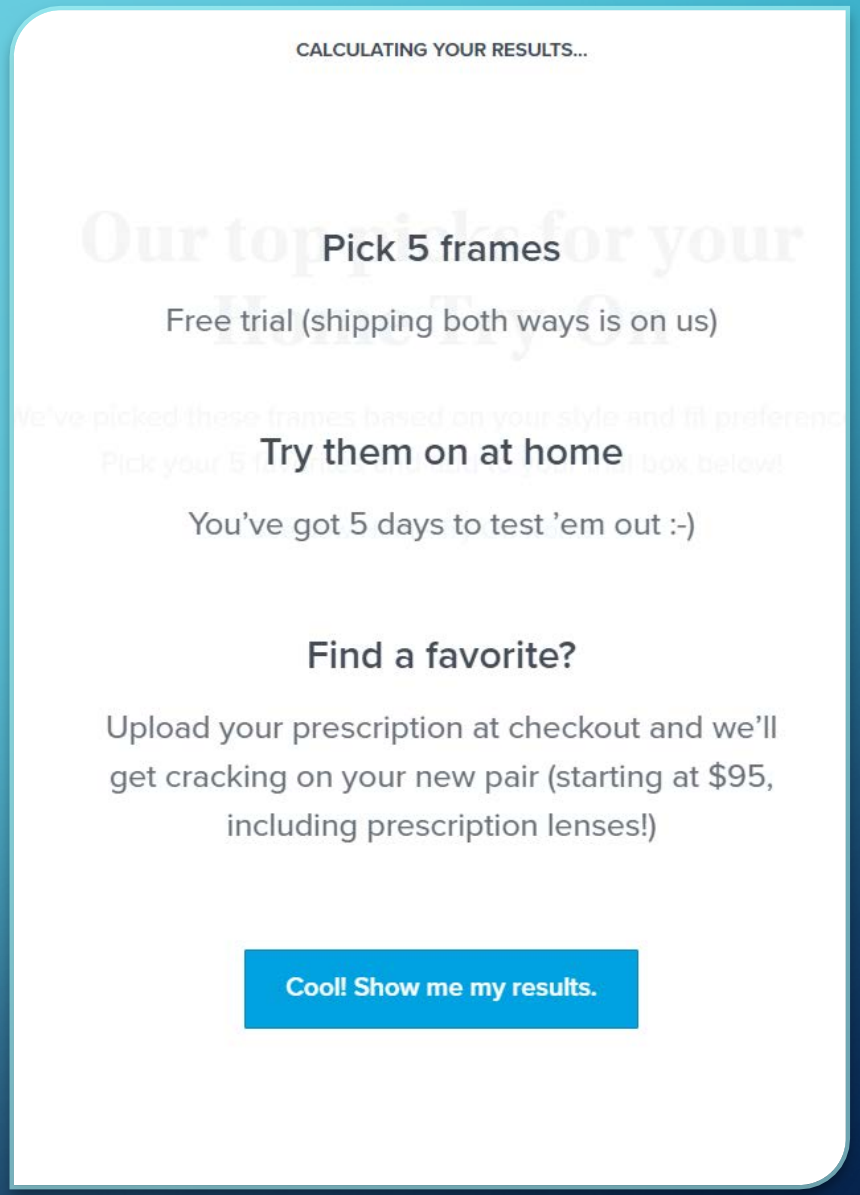


At question four, 19 more users stopped taking the quiz. This is the smallest number of users to stop taking the quiz at any point.

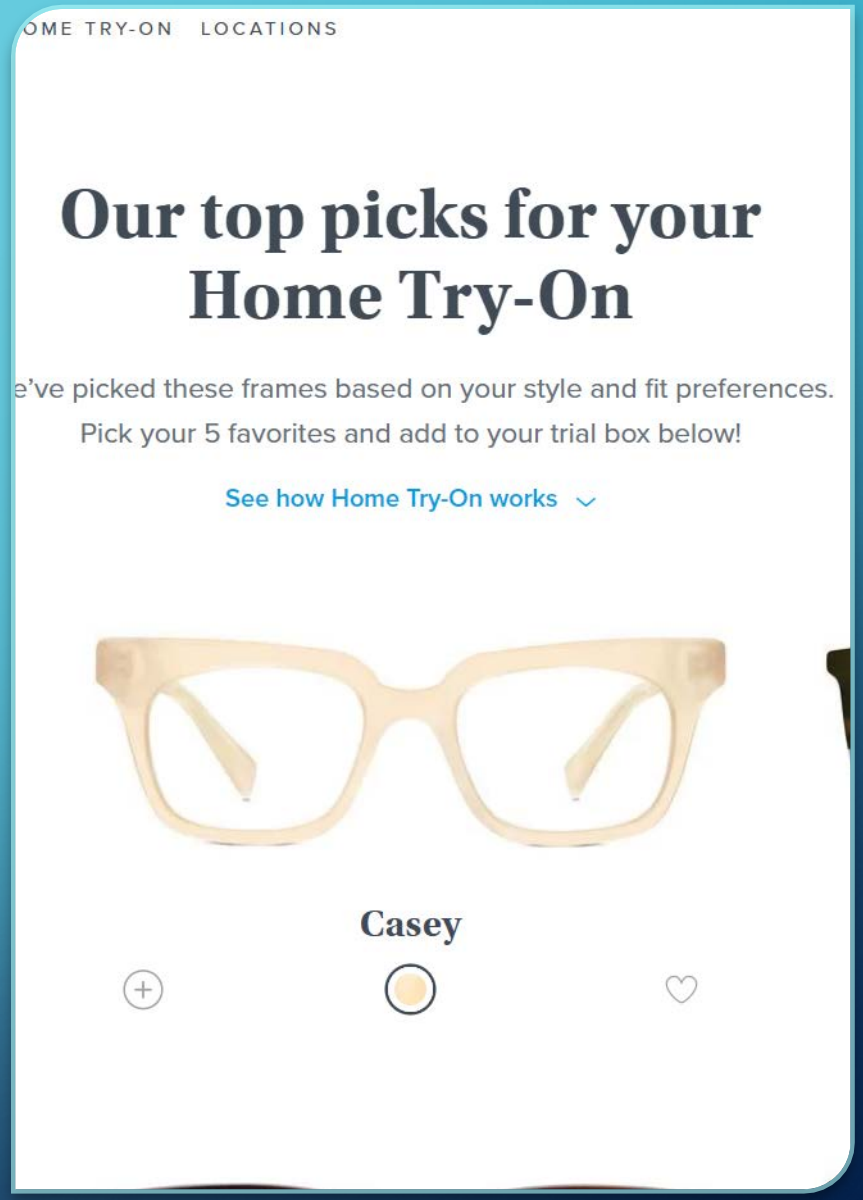


At the last question, 91 more users stopped taking the quiz. The main reason I believe this is because they didn't know the answer.

After the remaining 270 users finished question five, they were taken to this screen. At this staged, the Home Try-On Funnel is started and the A/B Test begins. While taking the quiz, this user got the 5 pairs to try on instead of 3 pairs to try on.



Now the users can choose their 3 or 5 pairs of glasses based on the style quiz they've taken. So much closer to finding the perfect pair!



SURVEY TABLE

The users responses from the style quiz were stored in a table called ***survey***. To begin the process of creating the ***quiz funnel***, the query below was created to determine what the table is consisted of. To the right, the query results are listed.

```
SELECT *
FROM survey
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	I'm not sure. Let's skip it.
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

The table shows all the columns from the first 10 rows that were selected.

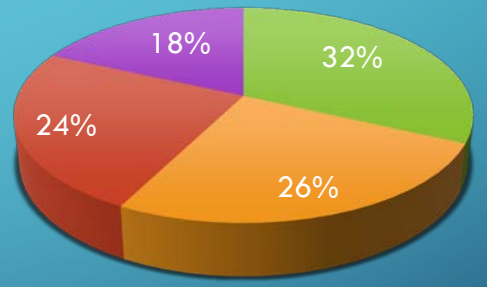
STYLE QUIZ RESULTS

Here is the number of responses for each question. By creating a ***quiz funnel***, you can view at which points users give up on the style quiz.

Questions	# of Clients Answered	Percentage
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%

The table shows which percentage of the 500 users answered each question.

```
SELECT question, COUNT(DISTINCT user_id)
FROM survey
GROUP BY 1;
```



The chart shows only question 2 – 5 as users begin to stop answering questions.

ANALYZE THE HOME TRY ON FUNNEL

QUERIES OF THE HOME TRY ON FUNNELS WERE CREATED TO DETERMINE WHETHER OR NOT USERS WHO RECEIVED MORE PAIRS OF GLASSES TO TRY ON AT HOME MADE MORE PURCHASES.

HOME TRY-ON FUNNEL GLANCE

The data for the home try-on funnel is distributed across three tables (***quiz***, ***home_try_on***, and ***purchase***). To begin the process of creating the ***home try-on funnel***, the query below was created to determine what the three tables listed above were consisted of. To the right, the query results are listed in the order of the query.

```
SELECT *
FROM quiz
LIMIT 5;

SELECT *
FROM home_try_on
LIMIT 5;

SELECT *
FROM purchase
LIMIT 5;
```

The three table shows all the columns from the first 5 rows that were selected from each 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

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

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

CREATING A NEW TABLE

Before the data is analyzed further, ***LEFT JOIN*** was used to combine all three tables from the top of the funnel (***browse***) to the bottom of the funnel (***purchase***).

Within the new table, every row will represent a single user from the ***browse*** table.

- If the user has any entries in ***home_try_on***, then ***is_home_try_on*** will be 'True'.
- ***number_of_pairs*** comes from ***home_try_on*** table
- If the user has any entries in ***is_purchase***, then ***is_purchase*** will be 'True'.

```
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 *
FROM funnel
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	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	0
0143cb8b-bb81-4916-9750-ce956c9f9bd9	0	0	0
a4ccc1b3-cbb6-449c-b7a5-03af42c97433	1	5 pairs	0
b1dded76-cd60-4222-82cb-f6d464104298	1	3 pairs	0

The table shows all the columns from the first 10 rows that were selected.

HOME TRY-ON FUNNEL RESULTS

After creating ***the home try-on funnel***, another query was created to determine the calculations of the overall conversion rates that were conducted by aggregating across all rows.

The following data was analyzed in the table below.

- ***Number of Users***: This is the total numbers of users.
- ***Try On***: This is the total of users that tried on glasses at home.
- ***Number of Purchase***: This is the total number of users that purchased glasses.
- ***% of Home Try On***: The percentage of the total number of users that tried on glasses at home.
- ***% Checkout to Purchase***: The percentage of the total number of users that purchased glasses.

```
WITH funnels 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 'Number of Users',
   SUM(is_home_try_on) AS 'Try On',
   SUM(is_purchase) AS 'Number of Purchase',
   100.0 * SUM(is_home_try_on)/COUNT(user_id) AS '% of Home Try On',
   100.0 * SUM(is_purchase)/SUM(is_home_try_on) AS '% Checkout to Purchase'
   From funnels;
```

Number of Users	Try On	Number of Purchase	% of Home Try On	% Checkout to Purchase
1000	750	495	75.0	66.0

ACTIONABLE INSIGHTS

ANALYZING THE DATA FURTHER CAN LEAD TO A GREATER UNDERSTANDING OF WHAT WARBY PARKER CAN IMPROVE ON. LET'S TAKE A DEEPER LOOK INTO SOME OF THE KEY DATA POINTS.

ANALYZING THE A/B SPLIT TEST

```
WITH funnel AS (
  SELECT DISTINCT q.user_id,
 CASE
  WHEN h.user_id IS NOT NULL
       THEN 'True'
       ELSE 'False'
  END AS 'is_home_try_on',
 h.number_of_pairs,
 CASE
  WHEN p.user_id IS NOT NULL
       THEN 'True'
       ELSE 'False'
  END 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)
```

By creating this query, we can further analyze the A/B Split Test where users would receive 3 or 5 pairs of glasses to try on at home.

The query shown here will help determine the following.

- The total number of users that were give the test to choose 3 pairs of glasses.
  - The total number of users that purchased glasses and did not.
- The total number of users that were give the test to choose 5 pairs of glasses.
  - The total number of users that purchased glasses and did not.

1

```
SELECT number_of_pairs AS 'Number of Pairs', COUNT(is_purchase) AS ' Total Number of Purchased Pairs'
FROM funnel
WHERE is_purchase = 'True'
GROUP BY number_of_pairs;
```

By adding the code above under the funnel to the left, the query results will show the number of users that purchased glasses in each category (***3 pairs*** and ***5 pairs***).

2

```
SELECT number_of_pairs AS 'Number of Pairs', COUNT(is_purchase) AS ' Total Number of Not Purchased Pairs'
FROM funnel
WHERE is_purchase = 'False'
GROUP BY number_of_pairs;
```

By adding the code above under the funnel to the left, the query results will show the number of users that did not purchase glasses in each category (***None***, ***3 pairs*** and ***5 pairs***).

ANALYZING THE A/B SPLIT TEST CONT.

1

Number of Pairs	Total Number of Purchased Pairs
0	0
3 pairs	201
5 pairs	294

Results of query 1 which determined the number of people who purchased glasses in each category.

2

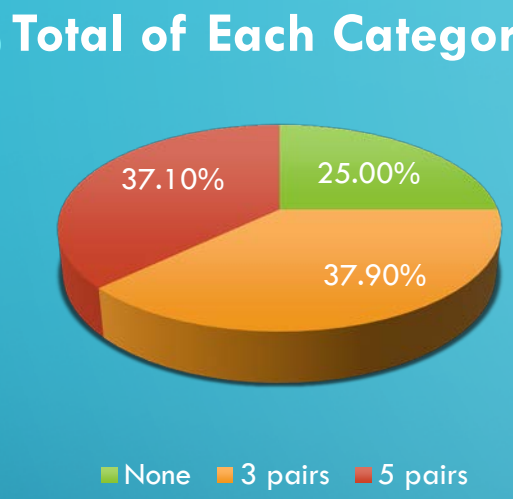
Number of Pairs	Total Number of NOT Purchased Pairs
0	250
3 pairs	178
5 pairs	77

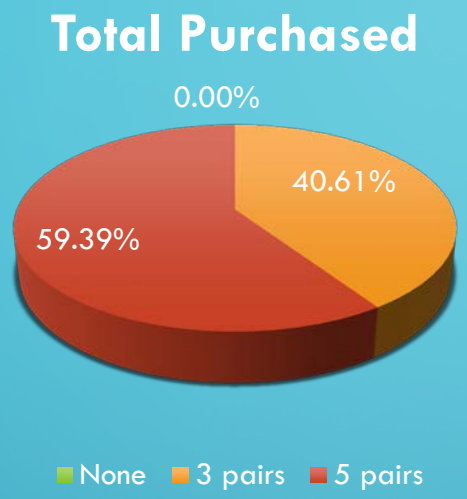
Results of query 2 which determined the number of people who did not purchase glasses in each category.

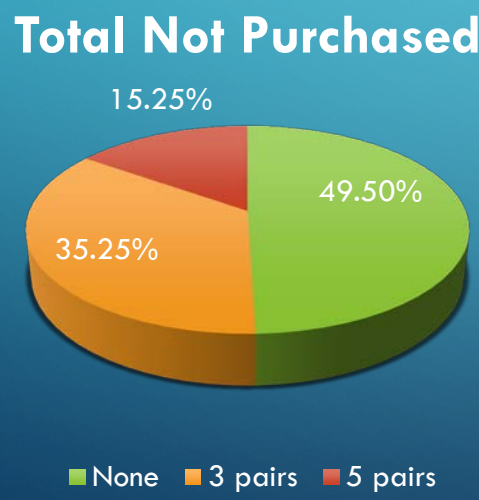
From the previous queries, the following data was determined.

- The total number of users given 3 pairs was 379.
  - Of 379 users, 201 of those users purchased glasses while 178 users did not make a purchase.
- The total number of users given 5 pairs was 371.
  - Of 371 users, 294 of those users purchased glasses while 77 users did not make a purchase.
- 250 people did not get offered the option of 3 pairs or 5 pairs because they did not complete the style quiz.

ANALYZING THE A/B SPLIT TEST CONT.







These three charts give a visual representation of how the A/B Split Test effected the 1,000 users. Note that only 750 of the users were entered into the testing. The other 250 users did not complete the quiz.

- ***Total of Each Category***: This shows that the A/B split testing was almost evenly split among the users with 37.9% of the users being given 3 pairs of glasses and 37.1% of the users being given 5 pair of glasses.
- ***Total Purchased***: This shows that the users that received 5 pairs of glasses to try on at home purchased more than the users that received 3 pairs of glasses.
- ***Total Not Purchased***: This shows that the users that received 3 pairs of glasses to try on at home purchased less than the users that received 5 pairs of glasses.

In conclusion, offering users more pairs of glasses to try on for free makes the user more likely to make a purchase.

DETERMINING THE MOST COMMON MODEL

When it came to determining the model that is most common among the users, the query below was created to output the table to the right. This table shows that the most common model is the ***Eugene Narrow*** model in the ***Rosewood Tortoise*** color for the ***Women's Styles*** and the ***Dawes*** model in the ***Driftwood Fade*** color for the ***Men's Styles.***

Product_id	Style	Model_name	Color	Price	Total Purchased
10	Women's Styles	Eugene Narrow	Rosewood Tortoise	95	116
3	Men's Styles	Dawes	Driftwood Fade	150	107
2	Men's Styles	Brady	Sea Glass Gray	95	95

The table shows the selected columns from the first 3 rows of the ***purchase*** table.

```
SELECT product_id, style, model_name, color, price, COUNT(product_id) AS 'Total Purchased'
FROM purchase
GROUP BY 3
ORDER BY 6 DESC
LIMIT 3;
```

DETERMINING THE MOST COMMON COLOR

When it came to determining the color that is most common among the users, the query below was created to output the table to the right. This table shows that the most common color is ***Jet Black*** in the ***Lucy*** model for the ***Women's Style*** and ***Driftwood Fade*** in the ***Dawes*** model for the ***Men's Style***.

Product_id	Style	Model_name	Color	Price	Total Purchased
8	Women's Styles	Lucy	Jet Black	150	86
3	Men's Styles	Dawes	Driftwood Fade	150	63
10	Women's Styles	Eugene Narrow	Rosewood Tortoise	95	62

The table shows the selected columns from the first 3 rows of the ***purchase*** table.

```
SELECT product_id, style, model_name, color, price, COUNT(color) AS 'Total of Color'
FROM purchase
GROUP BY 4
ORDER BY 6 DESC
LIMIT 3;
```

DETERMINING THE MOST COMMON STYLE

When it came to determining the style that is most common among the users, the query below was created to output the table to the right. This table shows that the most common style is the ***Women's Styles***.

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

The table shows the selected columns from the ***quiz*** table.

```
SELECT style, COUNT(style) AS 'Number of Style'
FROM quiz
GROUP BY style
ORDER BY 2 DESC;
```

ACKNOWLEDGEMENTS

THANK YOU TO THE CODEACADEMY TEAM AND WARBY PARKER FOR THIS AMAZING PROJECT.