Style Quiz

- The Warby Parker 'survey' table has several columns that provide data relating to: the questions ('question'), unique customer IDs ('user_id'), and responses ('response').
- The Survey goes from 500 responses to question 1 to 270 responses for question 5.
- The question with the lowest conversion rate is question 5 with a 74.8% conversion rate. This may be because the answer is not always top of mind or requires research or paperwork. The user may also experience fatigue from the survey length or feel the quiz is getting too personal.
- That said, there was an response 'Not sure. Let's skip it' which a small of respondents answered.
- Question 3 had a conversion rate of 80.0% and presents an opportunity to test and improve.
- This dataset only contains the info of respondents who successfully converted or answered Question 1. It would be interesting to see what the conversion rate of that question is and to test whether that can be improved.

```
/* Part 1.  What columns does the table have? */
SELECT *
FROM survey
LIMIT 10;

/* Part 2.  What is the number of responses for each question? */
SELECT question,
       COUNT(*)
FROM survey
GROUP BY question;

/* Part 3.  Exploring Question 5 */
SELECT question,
       response,
       COUNT(response)
FROM survey
WHERE question = '5. When was your last eye exam?'
GROUP BY response;
```

1 − 3. Warby Parker Survey − Style Quiz (2 of 2)

Question	Count of Responses	Conversion Rate (C/R) from Q.n to Q.n+1	Cumulative C/R from Q.1 to Current Question
1. What are you looking for?	500	100.0%	
2. What's your fit?	475	95.0%	95.0%
3. Which shapes do you like?	380	80.0%	76.0%
4. Which colors do you like?	361	95.0%	72.2%
5. When was your last eye exam?	270	74.8%	54.0%

Question	Response	Count of Responses
5. When was your last eye exam?	1-3 Years	56
5. When was your last eye exam?	3+ Years	37
5. When was your last eye exam?	<1 Year	141
5. When was your last eye exam?	Not Sure. Let's Skip It	36

Home Try On and Purchase

Conversion Rates through the Funnel

The code to the right shows the values at different stages of the funnel as well as conversion rates among them.
- Quiz => Home Try On has a 75% conversion rate. It is intuitive that the upper funnel stage converts better.
- Home Try On => Purchase has a 66% conversion rate. Warby Parker can generally predict that about 2 of every 3 home try on events lead to purchase.
- The Overall Conversion Rate (Quiz > HTO > Purchase) is 49.5%. About half of customers who take the style quiz make a purchase.

```
/* New table within the WITH function.  Conversion Rates during
        Funnel Stages
*/
WITH warby_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 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(user_id) AS 'num_prospect',
        SUM(is_home_try_on) AS 'num_home_try_on',
        SUM(is_purchase) AS 'num_purchase',
        1.0*SUM(is_home_try_on)/count(user_id) AS
        'q_to_hto_cr',
        1.0*SUM(is_purchase)/SUM(is_home_try_on) AS
        'hto_to_p_cr',
        1.0*SUM(is_purchase)/count(user_id) AS 'overall_cr'
FROM warby_funnel;
```

Count of Prospects	Count of Home Try Ons	Count of Purchase	C/R from Quiz to Home Try On	C/R from Home Try On to Purchase	Overall C/R
num_prospect	num_home_try_on	num_purchase	q_to_hto_cr	hto_to_p_cr	overall_cr
1000	750	495	75.0%	66.0%	49.5%

Testing 3 vs 5 Glasses

I used the same basic code, but added WHERE and GROUP BY statements to remove those who did not participate in the HTO.
- A and B had slightly different prospects assigned to them (379 vs 371 Home Try Ons.
- The 5 Pair subset (79% C/R) had an almost 50% lift versus the 3 Pair subset (53% C/R). I recommend Warby use 5 Pairs in their HTO kit.
- While some of the columns may seem repetitive, this helps me validate that my code works as intended. Because I limited to universe of prospects within the Test, it makes sense that Prospects == Home Try Ons.   C/R from Quiz to HTO = 100%. If there was a C/R < 100%, I would recognize I hadn't limited the prospects to only the AB Test

```
/* AB Test of 3 and 5 Glasses Home Try Ons
*/
WITH warby_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 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 number_of_pairs,
    COUNT(user_id) AS 'num_prospect',
    SUM(is_home_try_on) AS 'num_home_try_on',
    SUM(is_purchase) AS 'num_purchase',
    1.0*SUM(is_home_try_on)/count(user_id) AS 'q_to_hto_cr',
    1.0*SUM(is_purchase)/SUM(is_home_try_on) AS 'hto_to_p_cr',
    1.0*SUM(is_purchase)/count(user_id) AS 'overall_cr'
FROM warby_funnel
WHERE number_of_pairs IS NOT NULL
GROUP BY number_of_pairs;
```

Testing Group	Count of Prospects	Count of Home Try Ons	Count of Purchase	C/R from Quiz to Home Try On	C/R from Home Try On to Purchase	Overall C/R
number_of_pairs	num_prospect	num_home_try_on	num_purchase	q_to_hto_cr	hto_to_p_cr	overall_cr
3 pairs	379	379	201	1	53.03%	53.03%
5 pairs	371	371	294	1	79.25%	79.25%

Quiz – Popular Styles

```
/* Most Popular Style Quiz
*/
SELECT DISTINCT style, shape, fit, color, count(user_id)
FROM quiz
GROUP BY 1, 2, 3, 4
ORDER BY count(user_id) DESC
LIMIT 5;
```

- The 5 most popular style quiz combinations are below. There's a mix of men's and women's. All are rectangular shape with narrow or medium fits and black or tortoise colors.
- I removed the limit and looked at all the results with a pivot table. Mens and Womens style are generally similar. Rectangular and Square are the most popular shapes. Narrow/Medium and Tortoise/Black are the most popular fits and colors, respectively, mirroring the top combinations.

style	shape	fit	color	count(user_id)
Men's Styles	Rectangular	Narrow	Tortoise	23
Women's Styles	Rectangular	Narrow	Black	20
Women's Styles	Rectangular	Narrow	Tortoise	20
Men's Styles	Rectangular	Medium	Tortoise	19
Men's Styles	Rectangular	Narrow	Black	18

Purchase - Popular Outcomes

model_name	style	color	revenue	num_purchased	price
Dawes	Men's Styles	Driftwood Fade	$9,450	63	$150
Eugene Narrow	Women's Styles	Rosewood Tortoise	$5,890	62	$95
Eugene Narrow	Women's Styles	Rose Crystal	$5,130	54	$95
Brady	Men's Styles	Layered Tortoise Matte	$4,940	52	$95
Olive	Women's Styles	Pearled Tortoise	$4,750	50	$95
Dawes	Men's Styles	Jet Black	$6,600	44	$150
Lucy	Women's Styles	Elderflower Crystal	$6,600	44	$150
Brady	Men's Styles	Sea Glass Gray	$4,085	43	$95
Lucy	Women's Styles	Jet Black	$6,300	42	$150
Monocle	Men's Styles	Endangered Tortoise	$2,050	41	$50

```
/* Most Popular Purchases
*/
SELECT DISTINCT model_name,
                style,
                color,
                sum(price) AS 'revenue',
                count(price) AS 'num_purchased',
                price
FROM purchase
GROUP BY 1,2,3
ORDER BY num_purchased DESC;


/*Most popular color frames
*/
SELECT DISTINCT color,
                sum(price) AS 'revenue',
                count(price) AS 'num_purchased',
                price
FROM purchase
GROUP BY color
ORDER BY num_purchased desc;
```

- The table describes Popular models in order of the quantity purchased. Women's Eugene Narrow is the most popular (116) versus Men's Dawes (107).
- Dawes at a purchase price of $150 is the top product by Revenue ($16,050).
- The less popular Women's Lucy ($12,900) was #2 in revenue due to its higher price point.

Recommendations

Recommendations

- 100% of future Home Try Ons should have up to 5 frames to try on.
- Continue to AB test and optimize the funnel. We know which are top selling styles as well as style/color combinations. AB test images, catalog order, featured products in ads to see if the most popular purchases help improve conversions and sales
- Consider adding more premium products or finishes to increase average order value improve profitability. The premium frame while not best-selling still sold well.
- Driftwood Fade was the most popular colored frame. I couldn't tell what color categories Driftwood Fade or Sea Glass Grey fit in. Neutral, Crystal, Two-Tone had less responses in the early style quiz. Depending on how the popular Dawes is categorized, it may reveal survey respondents prefer in Driftwood Fade a color style they are not yet aware of (if Neutral, or Two-Tone).