



# Marketing Attribution

Analyze Data with SQL

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# Background

- This is a [SQL](#) educational project provided by Codecademy.
- **Premise:** CoolTShirts sells shirts of all kinds, as long as they are T-shaped and cool. Recently, CTS started a few marketing campaigns to increase website visits and purchases. Using touch attribution, they'd like to map their customers' journey: from initial visit to purchase. They can use that information to optimize their marketing campaigns.
- Database schema [is provided](#).

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2. What is the user journey?
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# 1. Get Familiar With the Company

# 1.1 How many campaigns and sources does CoolTShirts use and how are they related?

Based on the three queries, there are 8 campaigns and 6 sources which are related to each other in the following way:

utm_campaign	utm_source
getting-to-know-cool-tshirts	nytimes
weekly-newsletter	email
ten-crazy-cool-tshirts-facts	buzzfeed
retargeting-campaign	email
retargeting-ad	facebook
interview-with-cool-tshirts-founder	medium
paid-search	google
cool-tshirts-search	google

```
SELECT DISTINCT utm_campaign
FROM page_visits;
```

```
SELECT DISTINCT utm_source
FROM page_visits;
```

```
SELECT DISTINCT utm_campaign,
                utm_source
FROM page_visits;
```

# 1.2 What pages are on their website?

Based on the query, there are 4 pages on the CTS website:

- Landing page,
- Shopping cart,
- Checkout,
- Purchase

```
SELECT DISTINCT page_name
FROM page_visits;
```

page_name
1 - landing_page
2 - shopping_cart
3 - checkout
4 - purchase

## 2. What Is the User Journey?

## 2.1 How many first touches is each campaign responsible for?

Based on the query, the campaigns are responsible for the following number of first touches:

- interview-with-cool-tshirts-founder — 622
- getting-to-know-cool-tshirts — 612
- ten-crazy-cool-tshirts-facts — 576
- cool-tshirts-search — 169

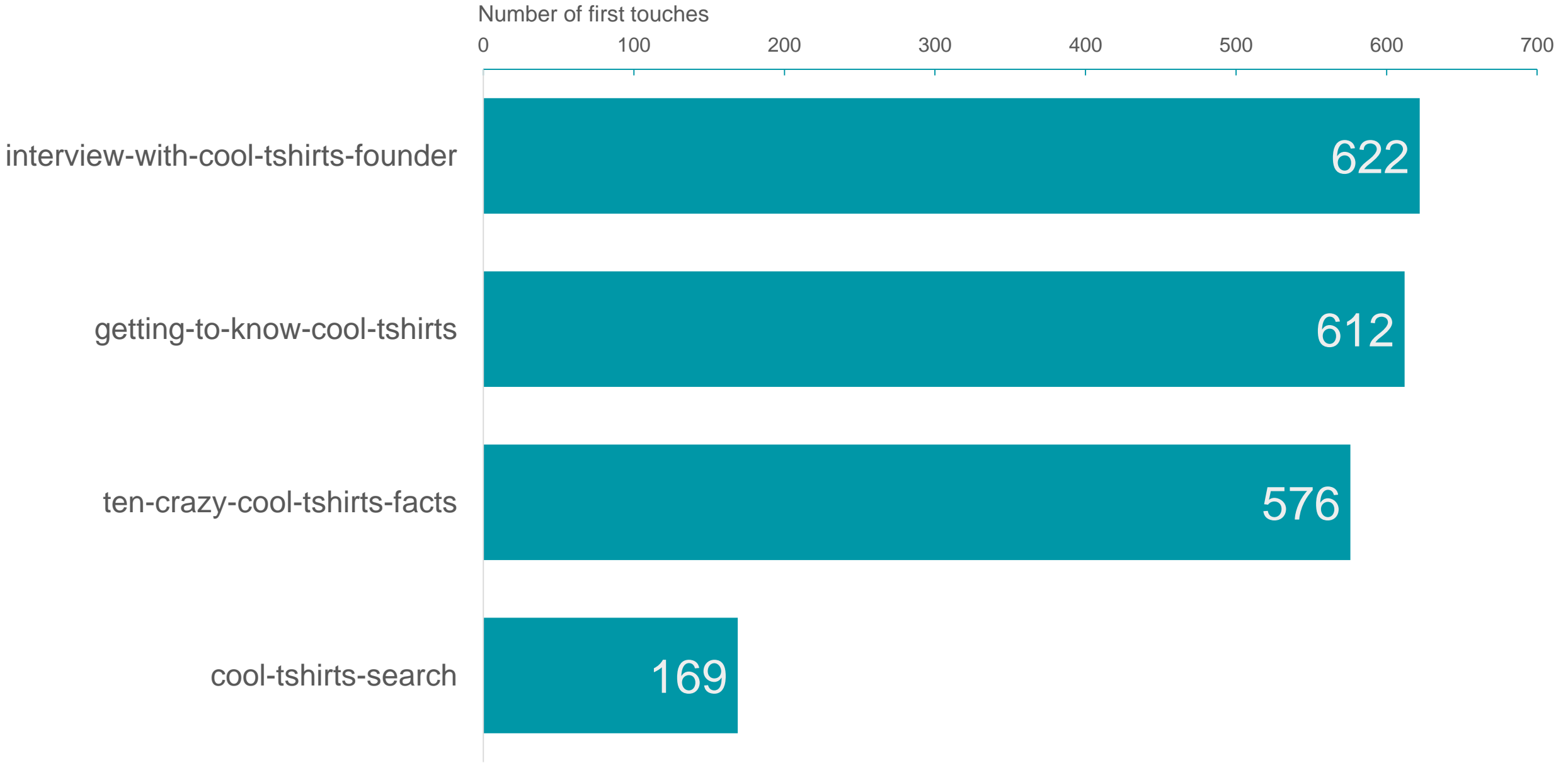
Other four campaigns seem to not have first touches.

utm_campaign	count_first_touch
interview-with-cool-tshirts-founder	622
getting-to-know-cool-tshirts	612
ten-crazy-cool-tshirts-facts	576
cool-tshirts-search	169

```
WITH first_touch AS (  
    SELECT user_id,  
           MIN(timestamp) as first_touch_at  
    FROM page_visits  
    GROUP BY user_id  
)  
first_touch_campaigns AS (  
    SELECT ft.user_id,  
           ft.first_touch_at,  
           pv.utm_source,  
           pv.utm_campaign  
    FROM first_touch ft  
    JOIN page_visits pv  
      ON ft.user_id = pv.user_id  
      AND ft.first_touch_at = pv.timestamp  
)  
SELECT ftc.utm_campaign AS utm_campaign,  
       COUNT(*) AS count_first_touch  
FROM first_touch_campaigns ftc  
GROUP BY 1  
ORDER BY 2 DESC;
```



# Number of first touches for each campaign



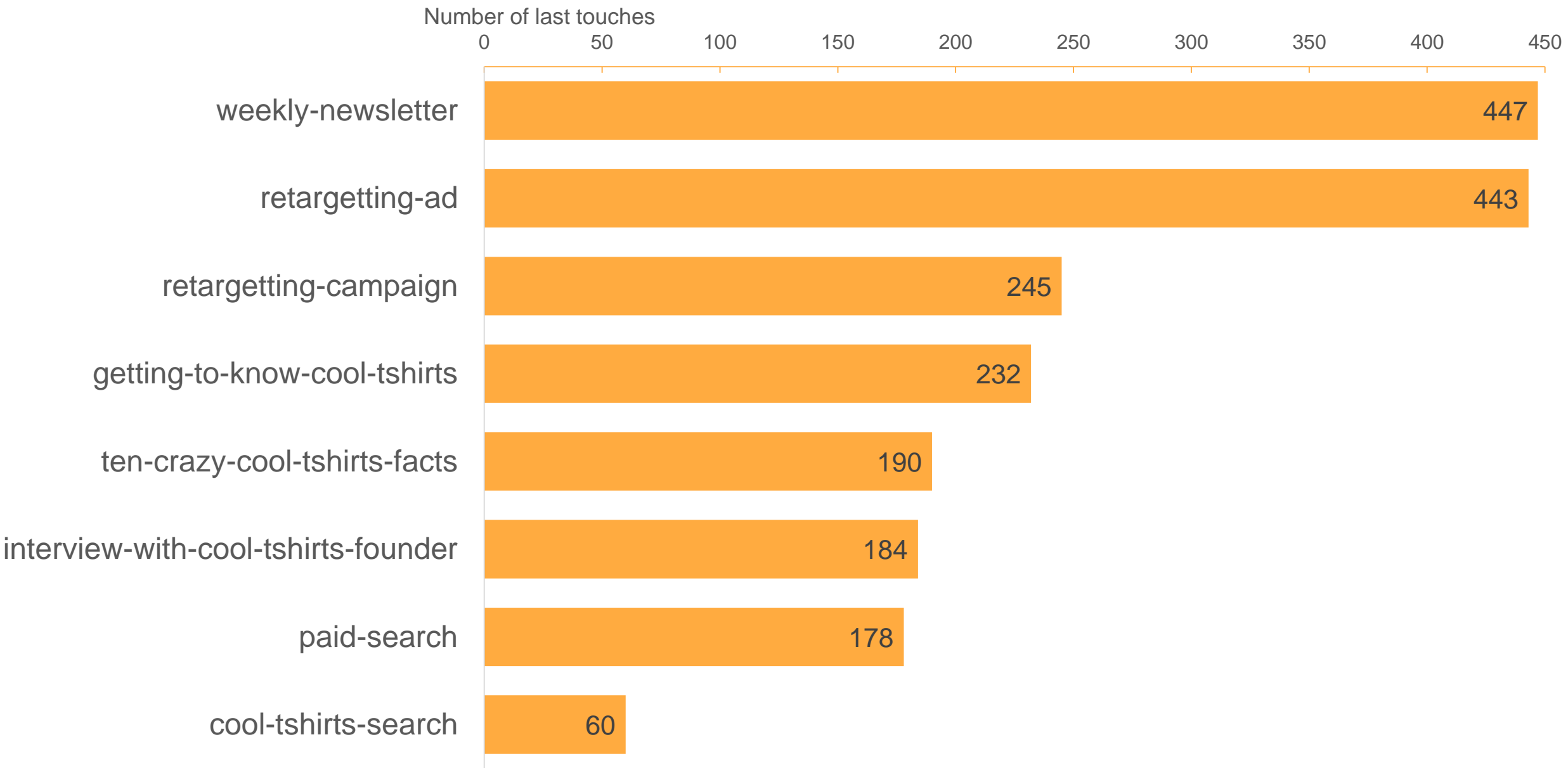
## 2.2 How many last touches is each campaign responsible for?

Based on the query, the campaigns are responsible for the following number of last touches:

utm_campaign	count_last_touch
weekly-newsletter	447
retargeting-ad	443
retargeting-campaign	245
getting-to-know-cool-tshirts	232
ten-crazy-cool-tshirts-facts	190
interview-with-cool-tshirts-founder	184
paid-search	178
cool-tshirts-search	60

```
WITH last_touch AS (  
    SELECT user_id,  
           MAX(timestamp) as last_touch_at  
    FROM page_visits  
    GROUP BY user_id  
) ,  
last_touch_campaigns AS (  
    SELECT lt.user_id,  
           lt.last_touch_at,  
           pv.utm_source,  
           pv.utm_campaign  
    FROM last_touch lt  
    JOIN page_visits pv  
      ON lt.user_id = pv.user_id  
      AND lt.last_touch_at = pv.timestamp  
)  
SELECT ltc.utm_campaign AS utm_campaign,  
       COUNT(*) AS count_last_touch  
FROM last_touch_campaigns ltc  
GROUP BY 1  
ORDER BY 2 DESC;
```

# Number of last touches for each campaign



## 2.3 How many visitors make a purchase?

Based on the query, it seems that **361** users have made a purchase

```
SELECT page_name,  
       COUNT(DISTINCT user_id) AS count_users  
FROM page_visits  
WHERE page_name = '4 - purchase';
```

page_name	count_users
4 - purchase	361

# 361

users made a purchase

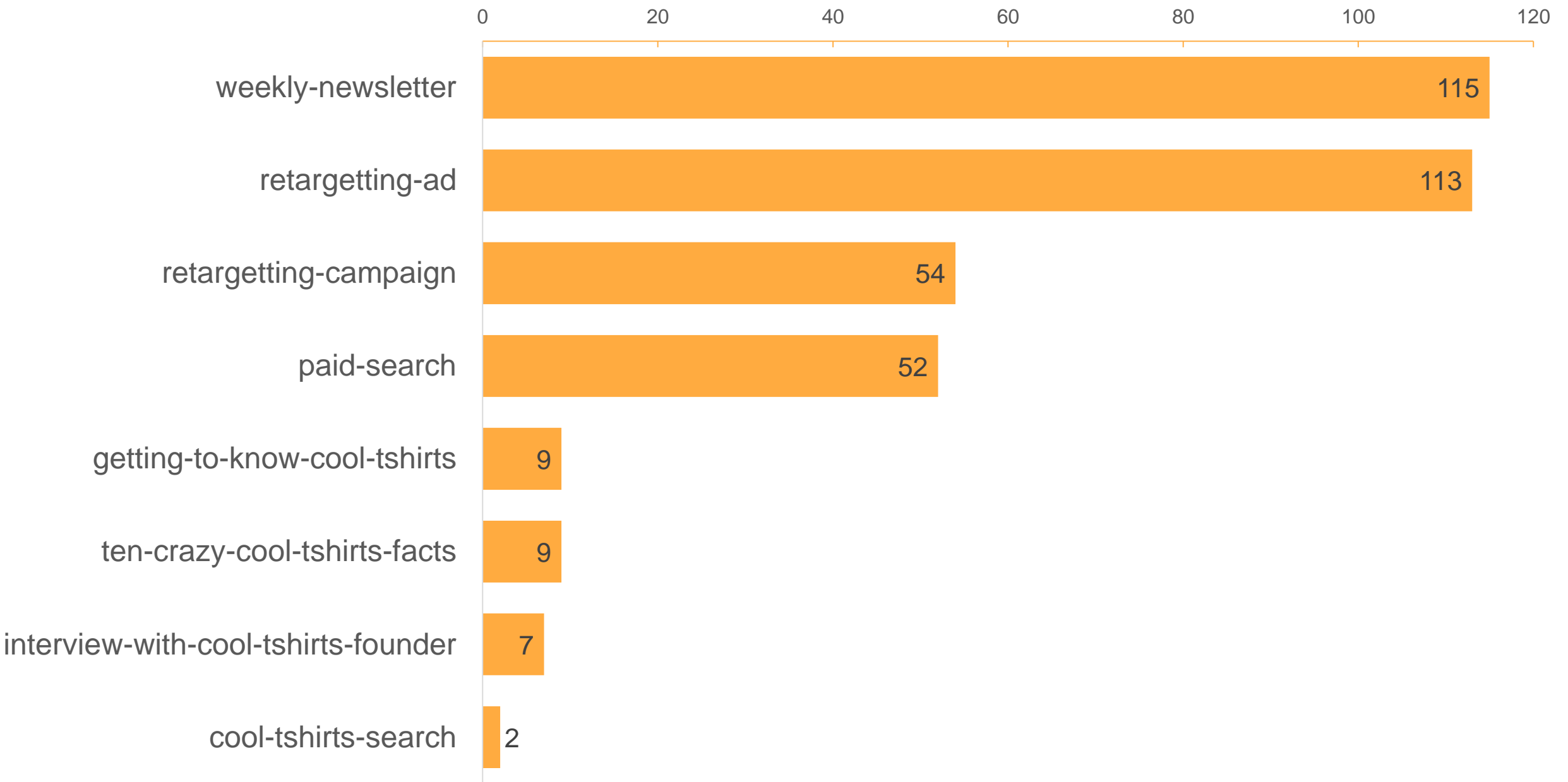
## 2.4 How many last touches on the purchase page is each campaign responsible for?

If counting only purchase-leading last touches, the campaigns are responsible for the following number of last touches:

utm_campaign	count_last_touch
weekly-newsletter	115
retargeting-ad	113
retargeting-campaign	54
paid-search	52
getting-to-know-cool-tshirts	9
ten-crazy-cool-tshirts-facts	9
interview-with-cool-tshirts-founder	7
cool-tshirts-search	2

```
WITH last_touch AS (  
    SELECT user_id,  
           MAX(timestamp) as last_touch_at  
    FROM page_visits  
    WHERE page_name = '4 - purchase'  
    GROUP BY user_id  
)  
,  
last_touch_campaigns AS (  
    SELECT lt.user_id,  
           lt.last_touch_at,  
           pv.utm_source,  
           pv.utm_campaign  
    FROM last_touch lt  
    JOIN page_visits pv  
      ON lt.user_id = pv.user_id  
      AND lt.last_touch_at = pv.timestamp  
)  
SELECT ltc.utm_campaign AS utm_campaign,  
       COUNT(*) AS count_last_touch  
FROM last_touch_campaigns ltc  
GROUP BY 1  
ORDER BY 2 DESC;
```

# Number of **purchase-leading** last touches



# 3. Optimize the Campaign Budget



## 3.1 CoolTShirts can re-invest in 5 campaigns. Which should they pick and why?

Based on the analysis, I would recommend to reinvest in the following 5 campaigns:

Campaign	First touches	Purchasing last touches
interview-with-cool-tshirts-founder	622	—
getting-to-know-cool-tshirts	612	—
ten-crazy-cool-tshirts-facts	576	—
weekly-newsletter	—	115
retargeting-ad	—	113
Total	1810	228