



Capstone: Attribution

Learn SQL from Scratch

Sheryl Gray

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1. Get familiar with CoolTShirts

1.1 How many campaigns and sources does CoolTShirts use? Which source is used for each campaign?

CoolTShirts uses 8 campaigns and 6 sources. The table to the right lists each campaign and its source. Email is the source for both the weekly-newsletter campaign and the retargeting-campaign. Google is the source for both the paid-search campaign and the cool-tshirts-search campaign.

```
SELECT COUNT(DISTINCT utm_campaign)
      AS 'Total Campaigns'
FROM page_visits;

SELECT COUNT(DISTINCT utm_source)
      AS 'Total Sources'
FROM page_visits;

SELECT DISTINCT utm_campaign
      AS 'Campaigns',
      utm_source AS 'Sources'
FROM page_visits;
```

Campaigns	Sources
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

1.2 What pages are on the CoolTShirts website?

There are four distinct pages on the CoolTShirts site:

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

```
SELECT DISTINCT page_name  
  AS 'Pages'  
FROM page_visits;
```

2. What is the user journey?

2.1 How many first touches is each campaign responsible for?

Only four of the eight campaigns bring visitors to the site for the first time. Three of these campaigns are articles on various sites; the fourth is a direct Google search. The articles far outstrip the Google search in driving traffic to the site.

Source	Campaign	Total FT
medium	interview-with-cool-tshirts-founder	622
nytimes	getting-to-know-cool-tshirts	612
buzzfeed	ten-crazy-cool-tshirts-facts	576
google	cool-tshirts-search	169

```
WITH first_touch AS (  
  SELECT user_id,  
         MIN(timestamp) AS first_touch_at  
  FROM page_visits  
  GROUP BY user_id),  
ft_attr 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 ft_attr.utm_source  
      AS 'Source',  
       ft_attr.utm_campaign  
      AS 'Campaign',  
       COUNT(*) AS 'Total FT'  
FROM ft_attr  
GROUP BY 1, 2  
ORDER BY 3 DESC;
```

2.2 How many last touches is each campaign responsible for?

The weekly-newsletter campaign brings in the most last touches, and the two email sourced campaigns taken together are a powerhouse. The retargeting-ad campaign through the Facebook source is also a heavy hitter. The article campaigns hold the middle ground, while the two search campaigns through the Google source bring up the rear.

Source	Campaign	Total LT
email	weekly-newsletter	447
facebook	retargeting-ad	443
email	retargeting-campaign	245
nytimes	getting-to-know-cool-tshirts	232
buzzfeed	ten-crazy-cool-tshirts-facts	190
medium	interview-with-cool-tshirts-founder	184
google	paid-search	178
google	cool-tshirts-search	60

2.3 How many visitors make a purchase?

The total number of visitors to CoolTShirts who made a purchase is 361.

```
SELECT COUNT(DISTINCT user_id)
       AS '# Users Purchased'
FROM page_visits
WHERE page_name = '4 - purchase';
```

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

Source	Campaign	Total Purchases
email	weekly-newsletter	115
facebook	retargetting-ad	113
email	retargetting-campaign	54
google	paid-search	52
buzzfeed	ten-crazy-cool-tshirts-facts	9
nytimes	getting-to-know-cool-tshirts	9
medium	interview-with-cool-tshirts-founder	7
google	cool-tshirts-search	2

The two email sourced campaigns lead to 46.8% of all purchases. The Facebook sourced retargetting-ad campaign brings in 31.3%, and the paid-search campaign on Google accounts for 14.4%. The article campaigns only bring in 6.9% of purchases, and a direct Google search results in less than 1% of all purchases.

2.5 What is the typical user journey?

The typical user finds the CoolTShirts site through one of the three article campaigns. They touch the website 3 times in total. Their last touch comes by way of an email sourced campaign, the targeted Facebook ad campaign, or the getting-to-know-cool-tshirts campaign. A user whose last touch is via one of those campaigns makes a purchase 21.3% of the time.

Campaigns	Sources	Total FT	Total LT	Total Purchases
weekly-newsletter	email		447	115
retargetting-ad	facebook		443	113
retargetting-campaign	email		245	54
paid-search	google		178	52
getting-to-know-cool-tshirts	nytimes	612	232	9
ten-crazy-cool-tshirts-facts	buzzfeed	576	190	9
interview-with-cool-tshirts-founder	medium	622	184	7
cool-tshirts-search	google	169	60	2

3. Optimize the campaign budget

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

The answer depends on certain assumptions.

Assumption Version One

The New York Times, BuzzFeed, and Medium sourced campaigns, as well as the Google sourced cool-tshirts-search campaign, were all paid placements.

Assumption Version One: Recommendations

CoolTShirts needs to see a sales return on its marketing investment. That means balancing investments in campaigns that result in purchases with investments in campaigns that allow potential customers to find the site in the first place.

The most successful campaigns at bringing customers to the site are the New York Times, BuzzFeed, and Medium sourced campaigns. The most successful campaigns leading to purchases are the email and Facebook sourced campaigns, as well as the Google paid-search campaign.

CoolTShirts can achieve the best balance by re-investing in the weekly-newsletter, retargeting-ad, retargeting-campaign, paid-search, and getting-to-know-cool-tshirts campaigns. The first four in that list result in the most purchases. The getting-to-know-cool-tshirts campaign doesn't bring quite as many new visitors to the site as the interview-with-cool-tshirts-founder campaign, but that is offset by the fact that it results in slightly more purchases.

Assumption Version Two

The New York Times, BuzzFeed, and Medium sourced campaigns, as well as the Google sourced cool-tshirts-search campaign, were all unpaid placements.

Assumption Version Two: Recommendations

Based on their campaign names and sources, the New York Times, BuzzFeed, and Medium sourced campaigns appear to be articles that CoolTShirts didn't have to pay to place, outside of some staff time to give interviews or create news releases that they hoped would attract the attention of journalists or bloggers.

Likewise, the Google sourced cool-tshirts-search campaign seems to be a basic Google search; and unless the whole expense of CoolTShirts' search engine optimization strategy is assigned to this campaign, which seems unlikely, a Google search costs nothing.

Therefore, CoolTShirts only has four campaigns that require investment from an advertising budget: the weekly-newsletter, retargeting-ad, retargeting-campaign, and the paid-search campaigns. In this scenario, CoolTShirts gets to enjoy the benefits of all campaigns.

**Thank you for your time
and consideration!**