



# Capstone Project:

## First- and Last-Touch Attribution with CoolTShirts.com

Learn SQL from Scratch

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**1. Get familiar with the  
company**

# 1.1 Campaigns and Sources

In the data, 'utm\_campaign' contains data identifying the specific ad or email blast as marketing campaigns. There are **8** distinct campaigns.

The 'utm\_source' contains data identifying which site sent the traffic, which means the source of visits. There are **6** distinct sources.

The relationship between campaign and sources are as below. The tables shows what source is used for each campaign.

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

```
SELECT COUNT(DISTINCT utm_campaign) AS 'Number of  
Distinct Campaigns'  
FROM page_visits;
```

```
SELECT DISTINCT COUNT(utm_source) AS 'Number of  
Distinct Source'  
FROM page_visits;
```

```
SELECT utm_campaign AS 'Campaign',  
       utm_source AS 'Source'  
FROM page_visits  
GROUP BY utm_campaign;
```

## 1.2 Page

In the data, 'page\_name' contains the title of the section of the page that was visits. There are 4 pages as shown below:

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

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

## **2. What is the user journey?**

## 2.1 First Touch

The first touch is the first time someone visits the site. To find out how people know about CoolTShirt.com and which campaign is more effective, we can analyze the first touch and campaigns. The Campaign and Number of first touch information is as below:

Campaign	Number of 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)
SELECT pv.utm_campaign AS 'Campaign',
COUNT(ft.user_id) AS 'Number of First Touch'
FROM first_touch AS ft
JOIN page_visits AS pv
ON ft.user_id=pv.user_id
AND ft.first_touch_at = pv.timestamp
GROUP BY 1
ORDER BY 2 DESC;
```

## 2.2 Last Touch

The last touch is the last time someone visits the site. To find out the last time when people visit CoolTShirt.com and which campaign brings them back, we can analyze the last touch and campaigns. The Campaign and Number of last touch information is as below:

Campaign	Number of 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)
SELECT pv.utm_campaign AS 'Campaign',
COUNT(lt.user_id) AS 'Number of Last Touch'
FROM last_touch AS lt
JOIN page_visits AS pv
ON lt.user_id=pv.user_id
AND lt.last_touch_at = pv.timestamp
GROUP BY 1
ORDER BY 2 DESC;
```



## 2.2 Purchase

There are **361** visitors made purchase, meaning they visited the “4 – purchase” page.

It is also helpful to know which campaign contributes the most visit to purchase page. The campaign and number of last touch is as below.

Campaign	Number of Last Touch
weekly-newsletter	114
retargetting-ad	112
retargetting-campaign	53
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

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

WITH last_touch AS
(SELECT user_id,
      MAX(timestamp) AS last_touch_at
FROM page_visits
GROUP BY user_id)
SELECT pv.utm_campaign AS 'Campaign',
COUNT(lt.user_id) AS 'Number of Last Touch'
FROM last_touch AS lt
JOIN page_visits AS pv
ON lt.user_id=pv.user_id
AND lt.last_touch_at = pv.timestamp
WHERE pv.page_name='4 - purchase'
GROUP BY 1
ORDER BY 2 DESC;
```

## 2.3 User Journey

Based on the analysis, users usually find the CoolTShirts.com through “interview-with-cool-tshirts-founder”, “getting-to-know-cool-tshirts” and “ten-crazy-cool-tshirts-facts” campaigns. But very small percentage of the users actually make purchases. In stead, a lot of users were brought back by the “weekly-newsletter”, “retargetting-ad” and several other campaigns and made purchases.

### **3. Optimize the campaign budget**

## 3.1 How to reinvest in campaigns.

Based on the analysis before, even though users usually find the CoolTShirts.com through “interview-with-cool-tshirts-founder”, “getting-to-know-cool-tshirts” and “ten-crazy-cool-tshirts-facts” campaigns. But very small percentage of the users actually make purchases. However campaigns like “weekly-newsletter (26%)”, “retargeting-ad (25%)” and “retargeting-campaign (22%)” and “paid-search (29%)” have much higher ratios of purchase. For a company, the most important thing is to attract users making actual purchase. So the campaigns like “wekkly\_newsletter”, “retargeting-ad”, “retargeting-campaign” and “paid-search” should get more investment.

Apart from the campaigns above, if the CoolTShirt.com still have marketing budget left, the company could invest in campaign like “interview-with-cool-tshirts-founder”. Even though this campaign has very low percentage of users actually make purchase, but it brings in the largest amount of visitors. More visitors could benefit the company in the long run. CoolTShirt.com could analyze the users visiting data more to find out why those visitors did not make purchase and try to improve the website.