



# CoolTShirts Project

Learn SQL from Scratch

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# **1. Get familiar with CoolTShirts**

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

CoolTShirts uses 8 different campaigns distributed towards 6 traffic sources. Let's see the difference between both terms:

- An **UTM campaign** means a marketing action spreaded through email or adds, and tipically focused into an specific time period (i.e. Christmas, Summer...) or into an specific type of client (i.e. young people, students, coffee-drinkers...).
- An **UTM source** reveals how a user gets to our website, it is, the website that redirected that user to us.

The queries below reveal the number of UTM campaigns and sources and the way they are related, as shown in the table on the right.

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

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

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

## 1.2 What pages are on their website?

There are 4 different pages within CoolTShirts: Landing page, shopping cart, checkout and purchase.

The query below returns the `page_name` data from `page_visits`.

```
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?

The table below reveals the number of first touches for every campaign. Campaigns not present here have also visits, but those are not first touches.

Source	Campaign	Number of first touches
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),  
first_touch_attr AS (  
  SELECT first_touch.user_id,  
         first_touch.first_touch_at,  
         page_visits.utm_source,  
         page_visits.utm_campaign  
  FROM first_touch  
  JOIN page_visits  
    ON first_touch.user_id = page_visits.user_id  
   AND first_touch.first_touch_at =  
      page_visits.timestamp  
)  
SELECT first_touch_attr.utm_source AS 'Source',  
       first_touch_attr.utm_campaign AS 'Campaign',  
       COUNT(*) AS 'Number of first touches'  
FROM first_touch_attr  
GROUP BY 1,2  
ORDER BY 3 DESC;
```

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

The table below reveals the number of last touches for every campaign.

Source	Campaign	Number of last touches
email	weekly-newsletter	447
facebook	retargetting-ad	443
email	retargetting-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

```
WITH last_touch AS (  
  SELECT user_id,  
         MAX(timestamp) as 'last_touch_at'  
  FROM page_visits  
  GROUP BY user_id),  
last_touch_attr AS (  
  SELECT last_touch.user_id,  
         last_touch.last_touch_at,  
         page_visits.utm_source,  
         page_visits.utm_campaign,  
         page_visits.page_name  
  FROM last_touch  
  JOIN page_visits  
    ON last_touch.user_id = page_visits.user_id  
   AND last_touch.last_touch_at =  
       page_visits.timestamp  
)  
SELECT last_touch_attr.utm_source AS 'Source',  
       last_touch_attr.utm_campaign AS 'Campaign',  
       COUNT(*) 'Number of last touches'  
FROM last_touch_attr  
GROUP BY 1, 2  
ORDER BY 3 DESC;
```



## 2.3 How many visitors make a purchase?

361 distinct users made a purchase in CoolTShirts according to the results shown in the table.

```
SELECT page_name, COUNT (DISTINCT user_id) AS 'Visits'  
FROM page_visits  
GROUP BY page_name;
```

page_name	Visits
1 - landing_page	1979
2 - shopping_cart	1881
3 - checkout	1431
4 - purchase	361

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

By adding a new condition to the query stated in 2.2 we can limit the last touches results to only those ones in the purchases page.

Source	Campaign	Number of last touches
email	weekly-newsletter	115
facebook	retargeting-ad	113
email	retargeting-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

```
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_attr AS (  
  SELECT last_touch.user_id,  
         last_touch.last_touch_at,  
         page_visits.utm_source,  
         page_visits.utm_campaign,  
         page_visits.page_name  
  FROM last_touch  
  JOIN page_visits  
    ON last_touch.user_id = page_visits.user_id  
   AND last_touch.last_touch_at =  
       page_visits.timestamp  
)  
SELECT last_touch_attr.utm_source AS 'Source',  
       last_touch_attr.utm_campaign AS 'Campaign',  
       COUNT(*) 'Number of last touches'  
FROM last_touch_attr  
GROUP BY 1, 2  
ORDER BY 3 DESC;
```

## 2.5 What is the typical user journey?

According to the results already seen in question 2.3 (see table on the right) the typical user journey is:

1. Look for nice t-shirts in the landing and search pages
2. Add those interesting ones to the user's cart
3. Review the chosen products and do the checkout
4. Introduce payment data and carry out the purchase action

Since there is a huge gap between steps 3 and 4, it might be good to improve or simplify the purchase page so that users feel more confident while making the decision of accepting their purchase.

page_name	Visits
1 - landing_page	1979
2 - shopping_cart	1881
3 - checkout	1431
4 - purchase	361

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

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

In order to answer this question let's consider the ratio between the number of last touches at the purchase page and the number of last touches at any page. By following the data stated in questions 2.2 and 2.4 we can calculate this ratio as shown in the table on the right.

Indeed the 4 bottom campaigns have the lowest ratios far away from their upper sisters. Since the question asks for 5 campaigns we could also include the *retargeting-campaign* to complete the group.

Now that we have identified the campaigns that achieve less purchases, we will take a look in the next slide to the first touches table (described in question 2.1).

Campaign	Ratio
weekly-newsletter	0.257
retargeting-ad	0.255
retargeting-campaign	0.220
paid-search	0.292
ten-crazy-cool-tshirts-facts	0.047
getting-to-know-cool-tshirts	0.038
interview-with-cool-tshirts-founder	0.038
cool-tshirts-search	0.033

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

It seems that campaigns that achieve a lower purchase ratio are those ones that work better for bringing new users to the CoolTShirts page.

According to this I would suggest to invest into the 4 campaigns with highest purchase ratios (or into the flow of the purchase procedure) in order to balance the 'discovering' campaigns and the 'selling' ones. Those high-selling campaigns (the ones not included in this table) have no first touches, meaning that the users who bought through them already knew the website. Maybe by improving the number of first touches in these campaigns CoolTShirts would achieve more purchases from users that did not know the website.

Source	Campaign	Number of first touches	Ratio
medium	interview-with-cool-tshirts-founder	622	0.038
nytimes	getting-to-know-cool-tshirts	612	0.038
buzzfeed	ten-crazy-cool-tshirts-facts	576	0.047
google	cool-tshirts-search	169	0.033