



Capstone: Attribution queries

Learn SQL from Scratch

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1. Get familiar with CoolTshirts

1.1 How many campaigns does CoolTShirts use?

CTS is using the following **8** distinct campaigns: “Getting to know CoolTshirts”, “Weekly newsletter”, “Ten crazy CoolTshirts facts”, “Retargeting Campaign”, “Retargeting Ad”, “Interview with CoolTshirts founder”, “Paid search”, “CoolTshirts search”.

utm_campaign
getting-to-know-cool-tshirts
weekly-newsletter
ten-crazy-cool-tshirts-facts
retargeting-campaign
retargeting-ad
interview-with-cool-tshirts-founder
paid-search
cool-tshirts-search

```
SELECT DISTINCT (utm_campaign)
FROM page_visits;
```

1.2 How many sources does CoolTShirts use?

CTS is using the following **6** distinct sources for its campaigns: NY Times, e-mail, BuzzFeed, Facebook, Medium and Google.

utm_source
nytimes
email
buzzfeed
facebook
medium
google

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

1.3 How are campaigns and sources related?

The campaigns were run on the corresponding source/channel as follows:

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, utm_source  
FROM page_visits;
```

1.4 What pages are on CoolTshirt's website?

The CTS website consists of the following **four** pages: Landing page, shopping cart, checkout and purchase.

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

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

2. What is the user journey?

2.1 How many first touches is each campaign responsible for?

The first touches can be attributed to each campaign as follows:

ft.attr.utm_source	ft_attr.utm_campaign	COUNT(*)
medium	interview-with-cool-tshirts-founder	622
nytimes	getting-to-know-cool-tshirts	612
buzzfeed	ten-crazy-cool-tshirts-facts	576
google	cool-tshirts-searchl	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,  
       ft_attr.utm_campaign,  
       COUNT(*)  
FROM ft_attr  
GROUP BY 1, 2  
ORDER BY 3 DESC;
```

2.2 How many last touches is each campaign responsible for?

The last touches can be attributed to each campaign as follows:

ft.attr.utm_source	ft_attr.utm_campaign	COUNT(*)
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-cooltshirts-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),  
lt_attr AS (  
  SELECT lt.user_id,  
         lt.last_touch_at,  
         pv.utm_source,  
         pv.utm_campaign,  
         pv.page_name  
  FROM last_touch lt  
  JOIN page_visits pv  
    ON lt.user_id = pv.user_id  
   AND lt.last_touch_at = pv.timestamp  
)  
SELECT lt_attr.utm_source,  
       lt_attr.utm_campaign,  
       COUNT(*)  
FROM lt_attr  
GROUP BY 1, 2  
ORDER BY 3 DESC;
```

2.3 How many visitors make a purchase?

361 visitors made it through the complete shopping process and therefore purchased a product from CTS.

COUNT(*)
361

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

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

The last touches on the purchase page can be attributed to each campaign as follows:

ft.attr.utm_source	ft_attr.utm_campaign	COUNT(*)
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-wtih-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),  
lt_attr AS (  
  SELECT lt.user_id,  
         lt.last_touch_at,  
         pv.utm_source,  
         pv.utm_campaign,  
         pv.page_name  
  FROM last_touch lt  
  JOIN page_visits pv  
    ON lt.user_id = pv.user_id  
   AND lt.last_touch_at = pv.timestamp  
)  
SELECT lt_attr.utm_source,  
       lt_attr.utm_campaign,  
       COUNT(*)  
FROM lt_attr  
GROUP BY 1, 2  
ORDER BY 3 DESC;
```

2.5 What is the typical user journey?

Users seem to start their journeys by first learning about CTS through its Medium, NYT or BuzzFeed campaigns and end up visiting CTS' website. Some of them then sign up for the CTS newsletter. Later on, they get brought back to the website by reading the newsletter or being retargeted (e-mail and FB). Finally, some of these visitors, up to 25.7% in some channels like newsletter, decide to purchase from CTS.

3. Optimize the campaign budget

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

CTS should differentiate between campaigns that build **brand awareness** and the ones that primarily convert into sales, say **sales activation** campaigns. Both kinds are essential for a successful marketing strategy in the long-run and have to be balanced carefully.

Therefore, it would be short-sighted to only focus on the campaigns that proved to generate substantial amounts of sales. Instead, CTS should focus on keeping only the most effective of these sales activation campaigns: The *weekly newsletter* and the *Facebook retargeting ad*.

In addition, CTS should also stick to using all the brand awareness campaigns that drove significant traffic to their website in the first place, namely the following three: *Interview with CoolTshirts founder*, *Getting to know CoolTshirts*, and *Ten Crazy CoolTshirts Facts*

By doing so, CTS will make sure to continuously drive significant amounts of traffic to their website which will then result in more sales driving Newsletter subscriptions and retargetable information for Facebook ads.