

Marketing Attribution

Data analysis with SQL

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22/05/2020

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CoolTShirts is an innovative apparel shop running a bunch of marketing campaigns. In this project, I'll be helping them answer these questions about their campaigns:

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1. Getting familiar with the company

page_visits

A table describing each time a user visits the CoolTShirts website

| Column | Description |
|---------------------------|---|
| <code>user_id</code> | A unique identifier for each visitor to a page |
| <code>timestamp</code> | The time at which the visitor came to the page |
| <code>page_name</code> | The title of the section of the page that was visited |
| <code>utm_source</code> | Identifies which site sent the traffic (i.e., google, newsletter, or facebook_ad) |
| <code>utm_campaign</code> | Identifies the specific ad or email blast (i.e., june-21-newsletter or memorial-day-sale) |

1.1 Getting familiar with the company

- CoolTShirts uses 8 campaigns and 6 sources
- From the table below we can see which source is used for each campaign.

| | |
|-------------------------------------|------------|
| count(distinct utm_campaign) | |
| 8 | |
| count(distinct utm_source) | |
| 6 | |
| 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 count(distinct utm_campaign)
from page_visits;
```

```
select count(distinct utm_source)
from page_visits;
```

```
select distinct utm_campaign, utm_source
from page_visits;
```

1.2 What pages are on CoolTShirts website?

- CoolTShirts has 4 pages on their website: landing page, shopping_cart, checkout, purchase
- The conversion rate of CoolTShirts website is 18%

```
SELECT page_name, count(user_id)
from page_visits
group by 1;
```

| page_name | count(user_id) |
|-------------------|----------------|
| 1 - landing_page | 2000 |
| 2 - shopping_cart | 1900 |
| 3 - checkout | 1431 |
| 4 - purchase | 361 |

2. Defining the user journey

2.1 How many first touches each campaign is responsible for

From the table below we can see that :

- Medium `utm_source` with the `interview-with-cool-tshirts-founder` campaign attracted the most of the users: 622 out of a total of 2000.
- Nytimes `utm_source` with the `getting-to-know-cool-tshirts` campaign attracted almost the same amount of users as the previous campaign, 612 out of a total of 2000

| 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-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 as ft  
    JOIN page_visits as 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?

From the table below we can see that :

- Most of the last users interactions were with weekly-newsletter campaign on email utm_source
- The second biggest amount of users had their last touch on facebook utm_source with retargeting-ad campaign

It is important to know how many last touches each campaign is responsible for, but it is more important to know how many last interactions were exactly on the purchase page of each campaign.

| last_attr.utm_source | last_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-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_attr AS (  
  SELECT lt.user_id,  
         lt.last_touch_at,  
         pv.utm_source,  
         pv.utm_campaign  
  FROM last_touch as lt  
  JOIN page_visits as pv  
    ON lt.user_id = pv.user_id  
   AND lt.last_touch_at = pv.timestamp)
```

```
select last_attr.utm_source,  
       last_attr.utm_campaign,  
       count (*)  
from last_attr  
group by 2  
order by 3 desc;
```

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

From the table below we can see that :

- Most of the last user interactions on the purchase page were with the weekly-newsletter campaign on email utm_source
- The second biggest amount of users had their last touch on the purchase page on utm_source facebook with the retargeting-ad campaign

| last_attr.utm_source | last_attr.utm_campaign | count (*) |
|----------------------|-------------------------------------|-----------|
| email | weekly-newsletter | 115 |
| facebook | retargeting-ad | 113 |
| email | retargeting-campaign | 54 |
| google | paid-search | 52 |
| nytimes | getting-to-know-cool-tshirts | 9 |
| buzzfeed | ten-crazy-cool-tshirts-facts | 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  
    GROUP BY user_id),  
  
    last_attr AS (  
    SELECT lt.user_id,  
           lt.last_touch_at,  
           pv.utm_source,  
           pv.utm_campaign  
    FROM last_touch as lt  
    JOIN page_visits as pv  
      ON lt.user_id = pv.user_id  
      AND lt.last_touch_at = pv.timestamp)  
  
select last_attr.utm_source,  
       last_attr.utm_campaign,  
       count (*)  
from last_attr  
group by 2  
order by 3 desc;
```

3. Optimising the campaign budget

CoolTShirts wants to re-invest in 5 campaigns to keep diversified marketing channels. Based only on given factors I would recommend choosing the **interview-with-cool-tshirts-founder** campaign since this particular campaign attracted the biggest amount of users to visit CoolTShirts (622).

I would also recommend the following four campaigns as these brought the biggest amount of users to the purchase page:

- weekly-newsletter
- retargeting-ad
- retargeting-campaign
- paid-search

Two of these campaigns focus on retargeting which go hand in hand with the other campaigns.

| last_attr.utm_source | last_attr.utm_campaign | Count |
|----------------------|------------------------|-------|
| email | weekly-newsletter | 115 |
| facebook | retargeting-ad | 113 |
| email | retargeting-campaign | 54 |
| google | paid-search | 52 |