



First- and Last-Touch Attribution with CoolTShirts.com

Learn SQL from Scratch

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1. *Get familiar with CoolTShirts*

1 Get familiar with CoolTShirts

- How many campaigns and sources does CoolTShirts use and how are they related? **8 campaigns and 6 sources. Each campaign in Column 1 below is aligned with its source in Column 2.**
- What pages are on their website? **The names of the four pages are in Column 3 below.**

```
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;
```

```
Select Distinct page_name
From page_visits;
```

Column 1 (Campaign)	Column 2 (Source)	Column 3 (Page Name)
getting-to-know-cool-tshirts	nytimes	1 - landing_page
weekly-newsletter	email	2 - shopping_cart
ten-crazy-cool-tshirts-facts	buzzfeed	3 - checkout
retargeting-campaign	email	4 - purchase
retargeting-ad	facebook	
interview-with-cool-tshirts-founder	medium	
paid-search	google	
cool-tshirts-search	google	

2. What is the user journey?

2.1 What is the user journey?

- How many first touches is each campaign responsible for? **The number of first touches in Column 1 below are aligned with the corresponding campaign in Column 2.**

Column 1 (First Touches)	Column 2 (Campaign)
169	cool-tshirts-search
612	getting-to-know-cool-tshirts
622	interview-with-cool-tshirts-founder
576	ten-crazy-cool-tshirts-facts

```
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  
    GROUP BY utm_campaign, utm_source),  
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 Count(ft.first_touch_at),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  
GROUP BY pv.utm_campaign;
```

2.2 What is the user journey?

- How many last touches is each campaign responsible for? **The number of last touches in Column 1 below are aligned with the corresponding campaign in Column 2.**

Column 1 (Last Touches)	Column 2 (Campaign)
447	weekly-newsletter
443	retargeting-ad
245	retargeting-campaign
232	getting-to-know-cool-tshirts
190	ten-crazy-cool-tshirts-facts
184	interview-with-cool-tshirts-founder
178	paid-search
60	cool-tshirts-search

```
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  
    GROUP BY utm_campaign, utm_source),  
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 What is the user journey?

- How many visitors make a purchase? **The number of visitors making a purchase is 361**

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

Column 1 (Purchases)
361

2.4 What is the user journey?

- How many last touches on the purchase page is each campaign responsible for? **The numbers of last touches on the purchase page in Column 1 below are aligned with the corresponding campaign in Column 2.**

Column 1 (Last Touches)	Column 2 (Campaign)
115	weekly-newsletter
113	retargetting-ad
54	retargetting-campaign
52	paid-search
9	ten-crazy-cool-tshirts-facts
9	getting-to-know-cool-tshirts
7	interview-with-cool-tshirts-founder
2	cool-tshirts-search

```
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  
    GROUP BY utm_campaign, utm_source),  
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_campaign, COUNT(*)  
FROM lt_attr  
GROUP BY 1  
ORDER BY 2 DESC;
```

2.5 What is the user journey?

- What is the typical user journey? **Only about 18% of visitors buy something on the purchase page. The typical user journey is to visit the landing page and then drop off.**

3. Optimize the campaign budget

3 Optimize the campaign budget

- CoolTShirts can re-invest in 5 campaigns. Which should they pick and why? **They should definitely re-invest in the weekly-newsletter, the retargeting-ad, the retargeting-campaign, and the paid-search since those four campaigns result in the most purchases. Then they can choose either the ten-crazy-cool-tshirts-facts or the getting-to-know-cool-tshirts campaigns as the fifth, since they are equally effective.**