



# Codecademy

LEARN SQL FROM SCRATCH

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- ▶ **1. Get familiar with the company.**
  - ▶ How many campaigns and sources does CoolTShirts use and how are they related? What pages are on their website?
- ▶ **2. What is the user journey?**
  - ▶ How many first touches is each campaign responsible for?
  - ▶ How many last touches is each campaign responsible for?
  - ▶ How many visitors make a purchase?
  - ▶ How many last touches on the purchase page is each campaign responsible for?
  - ▶ What is the typical user journey?
- ▶ **3. Optimize the campaign budget**
  - ▶ CoolTShirts can re-invest in 5 campaigns. Which should they pick and why?

# 1. Get Familiar With CoolTShirts

- ▶ How many campaigns and sources does CoolTShirts use? Which source is used for each campaign?
  - ▶ A source is the medium that the campaign uses to target specific individuals. i.e email, Facebook, or Google
  - ▶ A campaign is a planned and organized marketing event that uses different sources to advertise products to a multitude of individuals

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

SELECT COUNT (DISTINCT utm_source)
      AS 'Distinct Sources'
FROM page_visits;

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

SQL code used to extract campaigns and sources

Distinct Campaigns	Distinct Sources
8	6
Campaigns	Sources
Getting-to-know-cool-tshirts	nytimes
Weekly-newsletter	Email
Ten-crazy-cool-tshirts-facts	Buzzfeed
Retargeting-ad	Facebook
Interview-with-cool-tshirts-founder	Medium
Paid-search	Google
Cool-tshirts-search	google
Retargeting-campaign	email

# 1.1 Get Familiar With CoolTShirts-cont'd

## What Pages are on CoolTShirts website?

- Use a SELECT DISTINCT to return a list of all page names that are associated with the campaigns.

## SQL Statement to Find Page Names

```
13 SELECT DISTINCT page_name
14 FROM page_visits;
```

## Page Names Returned using SQL Statement

Page_Names
1. Landing_Page
2. Shopping_Cart
3. Checkout
4. Purchase

## 2. What is the Users Journey?

How many first touches is each campaign responsible for?

1. Start by creating a temp table that grabs the minimum timestamp for each user ID.
2. Create a 2<sup>nd</sup> temp table that includes the source and campaign and then Join those tables on the user ID
3. Count the number of rows in the newly created table and group by the source and campaign.

```
16 WITH first_touch AS (  
17     SELECT user_id,  
18         MIN(timestamp) as first_touch_at  
19     FROM page_visits  
20     GROUP BY user_id),  
21 ft_attr AS (  
22     SELECT ft.user_id,  
23         ft.first_touch_at,  
24         pv.utm_source,  
25         pv.utm_campaign  
26     FROM first_touch ft  
27     JOIN page_visits pv  
28         ON ft.user_id = pv.user_id  
29         AND ft.first_touch_at = pv.timestamp)  
30     SELECT ft_attr.utm_source AS 'Source',  
31         ft_attr.utm_campaign AS 'Campaign',  
32         COUNT(*) AS 'First Touch Volume'  
33     FROM ft_attr  
34     GROUP BY 1, 2  
35     ORDER BY 3 DESC;
```

### SQL Output

Source	Campaign	1 <sup>st</sup> Touch Volume
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

## 2 What is the Users Journey?

How many last touches is each campaign responsible for?

1. Start by creating a temp table that grabs the maximum timestamp for each user ID.
2. Create a 2<sup>nd</sup> temp table that includes the source and campaign and then Join those tables on the user ID
3. Count the number of rows in the newly created table and group by the source and campaign.

```
37 WITH last_touch AS (  
38     SELECT user_id,  
39         MAX(timestamp) as last_touch_at  
40     FROM page_visits  
41     GROUP BY user_id),  
42 lt_attr AS (  
43     SELECT lt.user_id,  
44         lt.last_touch_at,  
45         pv.utm_source,  
46         pv.utm_campaign,  
47         pv.page_name  
48     FROM last_touch lt  
49     JOIN page_visits pv  
50     ON lt.user_id = pv.user_id  
51     AND lt.last_touch_at = pv.timestamp)  
52 SELECT lt_attr.utm_source AS 'Source',  
53     lt_attr.utm_campaign AS 'Campaign',  
54     COUNT(*) AS 'Last Touch Volume'  
55 FROM lt_attr  
56 GROUP BY 1, 2  
57 ORDER BY 3 DESC;
```

### SQL Output

Source	Campaign	Last Touch Volume
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

## 2 What is the Users Journey?

### How many visitors make a purchase?

1. This is a rather simple query to execute.
2. Use a count distinct of the user ID, but only limit it to users that have a page\_name of '4 – purchase'

### SQL Code

```
SELECT COUNT(DISTINCT user_id) AS '# of Users Who  
Made A Purchase'  
FROM page_visits  
WHERE page_name = '4 - purchase';
```

### SQL Output

# of Users Who Made a Purchase
361

## 2 What is the Users Journey?

- ▶ How many last touches on the purchase page is each campaign responsible for?
  - ▶ This query was very similar to the 'First Touched' and 'Last Touched' query.
  - ▶ The main difference is the use of the WHERE clause which returns only last touches that resulted in a purchase
  - ▶ See next slide for SQL output

```
63 WITH last_touch AS (  
64     SELECT user_id,  
65            MAX(timestamp) as last_touch_at  
66     FROM page_visits  
67     WHERE page_name = '4 - purchase'  
68     GROUP BY user_id),  
69 lt_attr AS (  
70     SELECT lt.user_id,  
71            lt.last_touch_at,  
72            pv.utm_source,  
73            pv.utm_campaign,  
74            pv.page_name  
75     FROM last_touch lt  
76     JOIN page_visits pv  
77     ON lt.user_id = pv.user_id  
78     AND lt.last_touch_at = pv.timestamp)  
79     SELECT lt_attr.utm_source AS 'Source',  
80            lt_attr.utm_campaign AS 'Campaign',  
81            COUNT(*) AS 'Last Touch Volume on Purchase  
82            page'  
83     FROM lt_attr  
84     GROUP BY 1, 2  
85     ORDER BY 3 DESC;
```



## 2 What is the Users Journey?

- ▶ If you analyze the output of the previous slide's SQL statement, you can see that the retargeting ads are most effective in creating purchases
- ▶ To be somewhat expected, the weekly newsletter was the most used path to making a purchase. This is because it's assumed that people who sign up for the weekly letter are the one's that are most interested in the product.

Source	Campaign	Last Touch Volume on Purchase page
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

## 2. What is the typical user journey?

- ▶ After analyzing all of the 'first touch' and 'last touch' data it's clear that most people travel to CoolTShirts' website via publications such as, interviews and online articles.
- ▶ Once there though, most people do not make a purchase and will navigate away from the website. This is shown by the fact that all of the campaigns with a high 1<sup>st</sup> touch percentage have a very low last touch percentage and even lower purchase percentage

	First Touch %	Last Touch %	Purchase %
Medium	31%	9%	2%
NYTimes	31%	12%	2%
Buzzfeed	29%	10%	2%
Google (CoolTShirts Search)	9%	3%	1%

## 2. What is the typical user journey?

- ▶ When the user navigates away from the site without making a purchase they will be sent one or more of the retargeting ads in hopes to remind the customer of the product.
- ▶ All of the retargeting campaigns contributed 0% to first touches, but excel in getting users back to the site and ultimately buying a product.

	First Touch %	Last Touch %	Purchase %
Facebook (Retargeting ad)	0%	22%	31%
Email (Retargeting ad)	0%	12%	15%
Email (Weekly Newsletter)	0%	23%	32%
Google (Paid Search)	0%	9%	1%

### 3. Optimize the Campaign Budget

- ▶ Which 5 campaigns should CoolTShirts re-invest in and why?
  - ▶ The best investing strategy is to have a good mix of campaigns that are high in first touches and high in last touches.
  - ▶ My solution would be to keep trying to put out publications, as these garner high initial traffic
  - ▶ I would continue with the weekly newsletter since this clearly leads to a lot of purchases and keeps our most valuable customers up-to-date on new products
  - ▶ Even though the email retargeting campaign is effective, I would discontinue it and pivot my focus towards social media (Twitter, Instagram etc.) since the Facebook Campaign captured 31% of all purchases.

#### Campaigns to Re-invest In

1. interview-with-cool-tshirts-founder
2. getting-to-know-cool-tshirts
3. ten-crazy-cool-tshirts-facts
4. weekly-newsletter
5. retargeting-ad (Facebook)