



CoolTShirts: First- and Last- Touch Attribution

Learn SQL From Scratch

Capstone

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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 and how are they related but different?

- A campaign messages targeted population segments with a call to action i.e. learn more, apply, subscribe, order, donate, etc.
- A source is the channel by which messaging reaches an audience, i.e. email, Facebook, a New York Times advertisement.
- The same source/s may be used with different campaigns, as different sources may be used together in the same campaign.

Campaign Total

8

Source Total

6

Campaigns	Sources
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

```
/* 1a. Count campaigns*/
```

```
SELECT COUNT(DISTINCT utm_campaign)  
AS 'Campaign Total'  
FROM page_visits;
```

```
/* 1b. Count sources*/
```

```
SELECT COUNT(DISTINCT utm_source)  
AS 'Source Total'  
FROM page_visits;
```

```
/* 1c. Demonstrate relationship  
listing sources per campaign*/
```

```
SELECT DISTINCT utm_campaign AS  
Campaigns,  
utm_source AS Sources  
FROM page_visits;
```

1. GET FAMILIAR WITH CoolTShirts

What pages are on the CoolTShirts website?

Page Name
1 - landing_page
2 - shopping_cart
3 - checkout
4 - purchase

```
/* 2. List website's unique page names*/
```

```
SELECT DISTINCT page_name AS  
'Page Name'  
FROM page_visits;
```

2. WHAT IS THE USER JOURNEY?

How many first touches is each campaign responsible for? These are the campaigns that drew the most first-time users to the site.

First Touch Count	Campaign	Source	First Touch
622	interview-with-cool-tshirts-founder	medium	2018-01-13 23:30:09
612	getting-to-know-cool-tshirts	nytimes	2018-01-25 00:04:39
576	ten-crazy-cool-tshirts-facts	buzzfeed	2018-01-04 05:59:46
169	cool-tshirts-search	google	2018-01-13 13:20:49

```
/* 3. Count the first touches for each campaign using first-touch query. First: Find first touches for each user id.*/
```

```
WITH first_touch AS (  
  SELECT user_id,  
  MIN(timestamp) AS first_touch_at  
  FROM page_visits  
  GROUP BY user_id  
)
```

```
/* Second: Add source and campaign to timestamp for each user id from page_visits joining on user id to determine what campaign and source is connected to each user_id's first touch. Display total number of user id's per campaign in descending order. */
```

```
SELECT COUNT (ft.user_id) AS 'First Touch Count',  
pv.utm_campaign AS 'Campaign',  
pv.utm_source AS 'Source', ft.first_touch_at AS 'First Touch'  
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  
ORDER BY COUNT (ft.user_id) DESC;
```

2. WHAT IS THE USER JOURNEY?

How many last touches is each campaign responsible for?

These are the campaigns that generated the most users last visit to the site.

Last Touch Count	Campaign	Source	Last Touch
447	weekly-newsletter	email	2018-01-26 06:18:39
443	retargeting-ad	facebook	2018-01-24 05:26:09
245	retargeting-campaign	email	2018-01-16 11:35:09
232	getting-to-know-cool-tshirts	nytimes	2018-01-15 04:55:43
190	ten-crazy-cool-tshirts-facts	buzzfeed	2018-01-04 05:59:47
184	interview-with-cool-tshirts-founder	medium	2018-01-02 07:40:34
178	paid-search	google	2018-01-10 04:58:48
60	cool-tshirts-search	google	2018-01-18 21:36:32

```
/* 4. Count the last touches for each campaign
using last-touch query. First: Find last touches
for each user id.*/
```

```
WITH last_touch AS (
SELECT user_id, MAX(timestamp) AS last_touch_at
FROM page_visits
GROUP BY user_id )
```

```
/* Second: Add source and campaign to timestamp for
each user id from page_visits joining on user id to
determine what campaign and source is connected to
each user_id's last touch. Display total number of
user id's per campaign in descending order. */
```

```
SELECT COUNT (lt.user_id) AS 'Last Touch Count',
pv.utm_campaign AS 'Campaign', pv.utm_source AS
'Source', lt.last_touch_at AS 'Last Touch'
FROM last_touch lt
JOIN page_visits pv
ON lt.user_id = pv.user_id
AND lt.last_touch_at = pv.timestamp
GROUP BY utm_campaign
ORDER BY COUNT (lt.user_id) DESC;
```

2. WHAT IS THE USER JOURNEY?

How many visitors make a purchase?

We use this figure to calculate the percentage of unique users that ultimately made a purchase: purchasing users / total users or 361/1976 or 18.3% of users became customers.

Visitors Who Became Customers

361

```
/* 5. Count the number of distinct  
users who made a purchase. */
```

```
SELECT COUNT (DISTINCT user_id) as  
'Visitors Who Became Customers'  
FROM page_visits  
WHERE page_name = '4 - purchase';
```

2. WHAT IS THE USER JOURNEY?

How many last touches *on the purchase page* is each campaign responsible for? What campaigns are generating the most purchases?

Last Touch: Purchase Page Count	Campaign	Source	last Touch
115	weekly-newsletter	email	2018-01-26 06:18:39
113	retargeting-ad	facebook	2018-01-06 09:41:19
54	retargeting-campaign	email	2018-01-24 09:00:58
52	paid-search	google	2018-01-19 16:37:58
9	getting-to-know-cool-tshirts	nytimes	2018-01-16 15:15:29
9	ten-crazy-cool-tshirts-facts	buzzfeed	2018-01-15 04:17:36
7	interview-with-cool-tshirts-founder	medium	2018-01-10 18:20:21
2	cool-tshirts-search	google	2018-01-18 00:25:00

```
/* 6. Count the last touches for each campaign
using last-touch query to determine how many last
touches were on the purchase page for each
campaign. First: Find last touches on the purchase
page for each user id.*/
```

```
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 )
```

```
/* Second: Add source and campaign to timestamp for
each user id from page_visits joining on user id to
determine what campaign and source is connected to
each user_id's last touch. Display total number of
last touches on the purchase page per campaign in
descending order. */
```

```
SELECT COUNT (lt.user_id) AS 'Last Touch: Purchase
Page Count', pv.utm_campaign AS 'Campaign',
pv.utm_source AS 'Source', lt.last_touch_at AS 'last
Touch'
FROM last_touch lt
JOIN page_visits pv
ON lt.user_id = pv.user_id AND lt.last_touch_at =
pv.timestamp
GROUP BY utm_campaign
ORDER BY COUNT (lt.user_id) DESC;
```


2. WHAT IS THE USER JOURNEY?

What is the typical user journey? What campaigns generated website traffic, kept users engaged, and successfully converted them to customers?

What campaigns drew the most users to the site?

Story-oriented campaigns:

- 91.5% of users (1810 of 1979) first came to the site through 1 of 3 story-oriented campaigns:

First Touch Count	Campaign	Source	First Touch
622	interview-with-cool-tshirts-founder	medium	2018-01-13 23:30:09
612	getting-to-know-cool-tshirts	nytimes	2018-01-25 00:04:39
576	ten-crazy-cool-tshirts-facts	buzzfeed	2018-01-04 05:59:46
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2. WHAT IS THE USER JOURNEY?

What is the typical user journey? What campaigns generated website traffic, kept users engaged, and successfully converted them to customers?

What campaigns kept users engaged and coming back?

Campaigns intentionally targeting prospects brought users back and kept them engaged. 57.4% of users' (1135 of 1979) last interaction with the site was with 1 of 3 targeted campaigns:

Last Touch Count	Campaign	
447	weekly-newsletter	email
443	retargeting-ad	facebook
245	retargeting-campaign	email
232	getting-to-know-cool-tshirts	nytimes
190	ten-crazy-cool-tshirts-facts	buzzfeed
184	interview-with-cool-tshirts-founder	medium
178	paid-search	google
60	cool-tshirts-search	google

2. WHAT IS THE USER JOURNEY?

What is the typical user journey? What campaigns generated website traffic, kept users engaged, and successfully converted them to customers?

What campaigns converted the most users to customers?

Targeted campaigns:

78.1% of purchasers (282 of 361) last interaction with the site was with 1 of 3 targeted campaigns:

Last Touch: Purchase Page Count	Campaign	Source
115	weekly-newsletter	email
113	retargeting-ad	facebook
54	retargeting-campaign	email
52	paid-search	google
9	getting-to-know-cool-tshirts	nytimes
9	ten-crazy-cool-tshirts-facts	buzzfeed
7	interview-with-cool-tshirts-founder	medium
2	cool-tshirts-search	google

2. WHAT IS THE USER JOURNEY?

What is the typical user journey? What campaigns generated website traffic, kept users engaged, and successfully converted them to customers?

Story-oriented campaigns drew the most traffic to the site, but users still needed additional prompts from targeted campaigns to stay engaged. Few purchases resulted from the stories that initially drew users. The majority of purchases come from intentionally targeted follow up campaigns.

- The top 3 story-oriented campaigns drew 91.5% of user traffic (1810 of 1979), but for 606 or 30.6% of those users, their first touch was also their last.
- Follow-up targeted campaigns kept users engaged and more successfully converted them to customers. For 78.1% of purchasers (282 of 361) their last interaction with the site was with 1 of the 3 top intentionally targeted follow-up campaigns.
- Only 6.9% of purchasers (25 of 361) came through the top 3 story-oriented campaigns that first attracted users to the site.

3. OPTIMIZE THE CAMPAIGN BUDGET

Limited to 5 campaigns, for the best return on investment, CoolTShirts should re-invest in campaigns highlighted below.

- The yellow highlighted campaigns are story-oriented and drew almost all of the users but few of the purchases.
- The blue highlighted targeted follow-up campaigns generated the most purchases but were never the initial draw to the site.
- **The top 3 story campaigns drove most traffic (91.5%), and top 2 targeted follow-up campaigns drove most (63.2%) purchasing. This combination delivers the best combined return on investment for 5 campaigns.**
- When included the retargeting-campaign and paid-search campaigns added another 29.4% to purchases.
- I recommend re-considering adding a 6th campaign: retargeting-campaign. As it is an email campaign the costs are likely relatively low compared to paid-search and it could yield another 15% to our purchase rate efficiently.

Campaign	First Touches	% First Touches	Last Touches	% Last Touches	Purchases	% Purchases
interview-with-cool-tshirts-founder	622	31.4%	184	9.3%	7	1.9%
getting-to-know-tcool-shirts	612	30.9%	232	11.7%	9	2.5%
ten-crazy-cool-tshirts-facts	576	29.1%	190	9.6%	9	2.5%
cool-tshirts-search	169	8.5%	60	3.0%	2	0.6%
weekly-newsletter	0	0.0%	447	22.6%	115	31.9%
retargeting-ad	0	0.0%	443	22.4%	113	31.3%
retargeting-campaign	0	0.0%	245	12.4%	54	15.0%
paid-search	0	0.0%	178	9.0%	52	14.4%
Totals	1979		1979		361	