



Capstone: Attribution

Learn SQL from Scratch

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1. Get familiar with CoolTShirts

1.1 How many campaigns and sources does CoolTShirts use and how are they related?

- CoolTShirts uses 6 sources to run their 8 campaigns. Two sources are running more than one campaign:
 - Email:** Weekly Newsletter and a Retargeting campaign
 - Google:** Paid Search ads and CoolTShirts Search

Source	Campaign
buzzfeed	ten-crazy-cool-tshirts-facts
email	weekly-newsletter
email	retargeting-campaign
facebook	retargeting-ad
google	paid-search
google	cool-tshirts-search
medium	interview-with-cool-tshirts-founder
nytimes	getting-to-know-cool-tshirts

Campaign Count
8

Source Count
6

```
/*How Many Unique Campaigns?*/  
SELECT COUNT(DISTINCT utm_campaign) AS 'Campaign Count'  
FROM page_visits;  
  
/*How Many Unique Sources?*/  
SELECT COUNT(DISTINCT utm_source) AS 'Source Count'  
FROM page_visits;  
  
/*How Sources and Campaigns relate?*/  
SELECT DISTINCT utm_source AS 'Source',  
utm_campaign AS 'Campaign'  
FROM page_visits  
ORDER BY 1;
```

1.2 What pages are on the CoolTShirts website?

In this dataset, we are able to see 4 pages that are part of customer purchase funnel of CoolTShirts:

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

```
15  /*Unique Page names*/  
16  SELECT DISTINCT page_name AS 'Page Name'  
17  FROM page_visits  
18  ORDER BY 1;
```

2. What is the user journey?

2.1 How many first touches is each campaign responsible for?

Users are being 'acquired' by 4 different campaigns, as seen on chart below.

- The most successful campaign from a First Touch model is 'Interview With Cool TShirts Founder', which is a campaign running under Medium.
- The 2nd best acquisition campaign from a First Touch model is 'Getting to Know Cool TShirts', which is a campaign running on NY Times.
- Assuming that the ad spend across campaigns are similar, Cool TShirts Search (Google) is underperforming.

Campaign	First_Touchpoints
interview-with-cool-tshirts-founder	622
getting-to-know-cool-tshirts	612
ten-crazy-cool-tshirts-facts	576
cool-tshirts-search	169

```
1  /*First Touch by Campaign*/
2  WITH first_touch AS (
3      SELECT user_id,
4             MIN(timestamp) AS first_touch_at
5      FROM page_visits
6      GROUP BY user_id),
7      ft_attr AS (
8      SELECT ft.user_id,
9             ft.first_touch_at,
10            pv.utm_source,
11            pv.utm_campaign
12      FROM first_touch ft
13      JOIN page_visits pv
14            ON ft.user_id = pv.user_id
15            AND ft.first_touch_at = pv.timestamp
16      )
17      SELECT ft_attr.utm_campaign AS Campaign,
18             COUNT(*) AS First_Touchpoints
19      FROM ft_attr
20      GROUP BY 1
21      ORDER BY 2 DESC;
```

2.2 How many last touches is each campaign responsible for?

All 8 campaigns has more than one 'Last Touchpoint'.

- The 2 best performing campaigns are 'Weekly Newsletter' running on Email and the Retargeting Ad running on Facebook.
- Two campaigns under Top 3 (Ordered by Last Touchpoints) are running on Email.

Campaign	Last_Touchpoints
weekly-newsletter	447
retargeting-ad	443
retargeting-campaign	245
getting-to-know-cool-tshirts	232
ten-crazy-cool-tshirts-facts	190
interview-with-cool-tshirts-founder	184
paid-search	178
cool-tshirts-search	60

```
23  /* Last Touch by Campaign*/
24  WITH last_touch AS (
25      SELECT user_id,
26             MAX(timestamp) as last_touch_at
27      FROM page_visits
28      GROUP BY user_id,
29             lt_attr AS (
30 SELECT lt.user_id,
31        lt.last_touch_at,
32        pv.utm_source,
33        pv.utm_campaign
34 FROM last_touch lt
35 JOIN page_visits pv
36     ON lt.user_id = pv.user_id
37     AND lt.last_touch_at = pv.timestamp
38 )
39 SELECT lt_attr.utm_campaign AS Campaign,
40        COUNT(*) AS Last_Touchpoints
41 FROM lt_attr
42 GROUP BY 1
43 ORDER BY 2 DESC;
```


2.3 How many visitors make a purchase?

- A total of 361 visitors completed a purchase on CoolTShirts website, which represents 18.24% of total visits (1,979).

Page Name	Unique Purchasers
4 - purchase	361

```
1  /*Visitors that made purchase*/
2  SELECT page_name AS 'Page Name',
3  COUNT(DISTINCT user_id) 'Unique Purchasers'
4  FROM page_visits
5  WHERE page_name = '4 - purchase'
6  GROUP BY 1;
```

```
1  /*All Unique Visitors*/
2  SELECT COUNT(DISTINCT user_id) 'Unique Visitors'
3  FROM page_visits;
4
```

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

- The best performing campaign regarding Last Touch Purchases is the Email Weekly Newsletter (31.9% of all purchases), followed by Facebook Retargeting Ad (31.3% of all purchases).
- The top 4 campaign sales performance combined represent 92.5% of all sales.

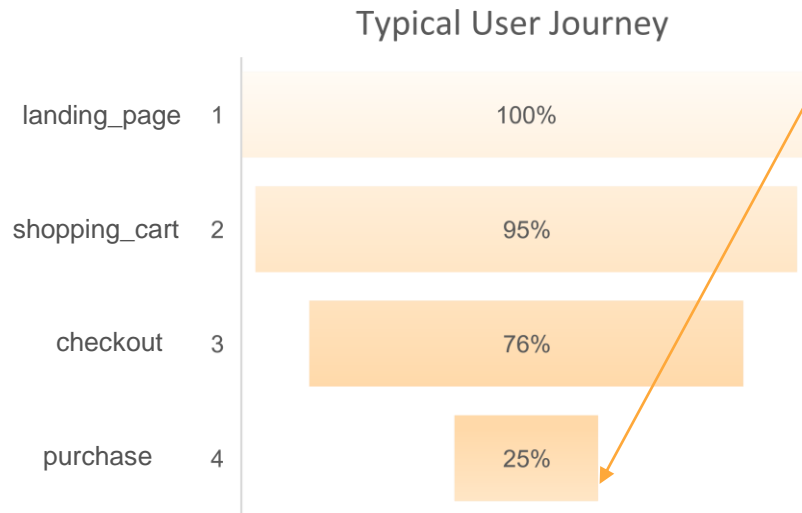
Campaign	Last_Touchpoints_Purchase
weekly-newsletter	115
retargeting-ad	113
retargeting-campaign	54
paid-search	52
getting-to-know-cool-tshirts	9
ten-crazy-cool-tshirts-facts	9
interview-with-cool-tshirts-founder	7
cool-tshirts-search	2

```
1  /*Visitors that made purchase - by Last Touch Campaign*/
2  WITH last_touch_purchase AS (
3      SELECT user_id,
4             MAX(timestamp) as last_touch_at
5      FROM page_visits
6      WHERE page_name = '4 - purchase'
7      GROUP BY 1),
8      lt_attr_purchase AS(
9      SELECT ltp.user_id,
10             ltp.last_touch_at,
11             pv.utm_source,
12             pv.utm_campaign
13      FROM last_touch_purchase ltp
14      JOIN page_visits pv
15           ON ltp.user_id = pv.user_id
16           AND ltp.last_touch_at = pv.timestamp
17      )
18      SELECT lt_attr_purchase.utm_campaign AS Campaign,
19             COUNT(*) AS Last_Touchpoints_Purchase|
20      FROM lt_attr_purchase
21      GROUP BY 1
22      ORDER BY 2 DESC;
```

2.5 What is the typical user journey?

From a *Site Analytics* perspective, the typical user journey begins at the Landing Page, with 95% of the users adding a least an item to their Shopping Cart. 76% of users who made it until the Shopping Cart move to Checkout. Only 25% of users in Checkout completed their Purchase.

Page Name	Unique Visitors
1 - landing_page	1979
2 - shopping_cart	1881
3 - checkout	1431
4 - purchase	361



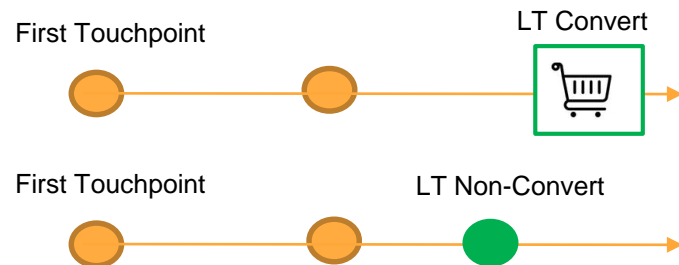
```
1 /*Typical User Journey*/
2 SELECT page_name AS 'Page Name',
3 COUNT(DISTINCT user_id) 'Unique Visitors'
4 FROM page_visits
5 GROUP BY 1;
```

2.5 What is the typical user journey? (continued)

Acquisition: From a *Media perspective*, most users (91%) are acquired by one of these 3 campaigns:

- 1) interview-with-cool-tshirts-founder
- 2) getting-to-know-cool-tshirts
- 3) ten-crazy-cool-tshirts-facts

Conversion: Most users who converted, convert after being Last Touched by a retargeting campaign or Newsletter.



Campaign	FT
interview-with-cool-tshirts-founder	622
getting-to-know-cool-tshirts	612
ten-crazy-cool-tshirts-facts	576
cool-tshirts-search	169

Campaign	LT
weekly-newsletter	447
retargeting-ad	443
retargeting-campaign	245
getting-to-know-cool-tshirts	232
ten-crazy-cool-tshirts-facts	190
interview-with-cool-tshirts-founder	184
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Campaign	LT Convert
weekly-newsletter	115
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cool-tshirts-search	2

3. Optimize the campaign budget

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

If marketing budget only allowed for 5 campaigns, I would choose to continue with a strong acquisition strategy so that remarketing and newsletter campaign would still be able to convert a high volume of users. Under that premise, I would choose the 3 campaigns that represent the majority of current user acquisition (in orange below) and invest in 2 campaigns to conclude the conversion.

Campaign	First Touch	% Total FT	Last Touch	% Total LT	Converters	% Total Converters
weekly-newsletter			447	23%	115	32%
retargeting-ad			443	22%	113	31%
retargeting-campaign			245	12%	54	15%
paid-search			178	9%	52	14%
getting-to-know-cool-tshirts	612	30.9%	232	12%	9	2%
ten-crazy-cool-tshirts-facts	576	29.1%	190	10%	9	2%
interview-with-cool-tshirts-founder	622	31.4%	184	9%	7	2%
cool-tshirts-search	169	8.5%	60	3%	2	1%



Thank you
Camila Bonfante Pereira
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