



Capstone project 3: Attribution

Learn SQL From Scratch
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SECTION 1

Getting Familiar with CoolTShirts

How many campaigns and sources does CoolTShirts use? Which source is used for each campaign?

- There 8 unique campaigns and 6 unique sources that CoolTShirt uses currently (see Charts to right)
- Campaign is a targeted advertisement effort to drive business to a website such as emailing weekly news letters, having sponsored articles on news site, and paying for website to appear higher for certain search engine results
- Sources identify where traffic to the website was directed from, for instance facebook, google, email.
- Sources deliver the campaign to prospective customers in hoping to attract them to the website

| Campaign Count | Source Count |
|----------------|--------------|
| 8 | 6 |

```
test.sqlite
1  --Get Distinct Campaigns
2  SELECT COUNT(DISTINCT utm_campaign) AS 'Campaign Count'
3  FROM page_visits;
4
5  --Get Distinct Source
6  SELECT COUNT(DISTINCT utm_source) AS 'Source Count'
7  FROM page_visits;
8
9  --Show how Sources and Campaigns are related
10 SELECT DISTINCT utm_campaign AS Campaign,
11                  utm_source AS Source
12 FROM page_visits;
```

| Campaign | 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 |

What pages are on their website?

Cool Tshirts has 4 unique pages on the website

| Page Names |
|-------------------|
| 1 - landing_page |
| 2 - shopping_cart |
| 3 - checkout |
| 4 - purchase |

```
test.sqlite
1  --Get Distinct page names for CoolTShirt webiste
2  SELECT DISTINCT page_name AS 'Page Names'
3  FROM page_visits;
```

Section 2

What is the user journey?

How many first touches is each campaign responsible for? See Chart below

| Source | 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 |

Note: only 4 of the 8 campaigns are responsible for first touches, some campaigns designed to reengage former visitors, like retargeting ads, which is important to remember when judging the effectiveness of each ad.

```
test.sqlite
1  --Finding how many first touches each campaign is responsible for
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
8  fr_attr AS (
9      SELECT ft.user_id,
10             ft.first_touch_at,
11             pv.utm_source,
12             pv.utm_campaign
13      FROM first_touch ft
14      JOIN page_visits pv
15           ON ft.user_id = pv.user_id
16           AND ft.first_touch_at = pv.timestamp)
17
18  SELECT fr_attr.utm_source AS Source,
19         fr_attr.utm_campaign AS Campaign,
20         COUNT(*) AS 'Count'
21  FROM fr_attr
22  GROUP BY 1, 2
23  ORDER BY 3 DESC;
```

How many last touches is each campaign responsible for? See chart below

| Source | Campaign | Count |
|----------|-------------------------------------|-------|
| email | weekly-newsletter | 447 |
| facebook | retargetting-ad | 443 |
| email | retargetting-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 |

Note: All 8 campaigns were responsible for last touches, you can see some the campaigns that weren't designed for first touches had high last touch numbers

```
1
2  --Finding how many last touches each campaign was responsible for
3  WITH last_touch AS (
4      SELECT user_id,
5             MAX(timestamp) AS last_touch_at
6      FROM page_visits
7      GROUP BY user_id),
8
9  lt_attr AS (
10     SELECT lt.user_id,
11            lt.last_touch_at,
12            pv.utm_source,
13            pv.utm_campaign,
14            pv.page_name
15     FROM last_touch lt
16     JOIN page_visits pv
17       ON lt.user_id = pv.user_id
18        AND lt.last_touch_at = pv.timestamp)
19
20  SELECT lt_attr.utm_source AS Source,
21         lt_attr.utm_campaign AS campaign,
22         COUNT(*) AS 'Count'
23  FROM lt_attr
24  GROUP BY 1, 2
25  ORDER BY 3 DESC;
```


How many visitors make a purchase? See chart below

| Customers that made a purchase |
|--------------------------------|
| 361 |

```
1  --Finding the number of visitor that make a purchase
2  SELECT COUNT (DISTINCT user_id) AS 'Customers that made a
   purchase'
3  FROM page_visits
4  WHERE page_name = '4 - purchase';|
```

How many last touches *on the purchase page* is each campaign responsible for?
See chart below

| Source | Campaign | Count |
|----------|-------------------------------------|-------|
| email | weekly-newsletter | 115 |
| facebook | retargetting-ad | 113 |
| email | retargetting-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 |

From the data we collected purchases over 18% (361/1979) visitors made a purchase on the CoolTShirts

```
1  --Finding how many last touches on the purchase pageis each
   campaign responsible for
2  WITH last_touch 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 user_id),
8
9  lt_attr AS (
10     SELECT lt.user_id,
11            lt.last_touch_at,
12            pv.utm_source,
13            pv.utm_campaign,
14            pv.page_name
15     FROM last_touch lt
16     JOIN page_visits pv
17       ON lt.user_id = pv.user_id
18        AND lt.last_touch_at = pv.timestamp)
19
20     SELECT lt_attr.utm_source AS Source,
21            lt_attr.utm_campaign AS Campaign,
22            COUNT(*) AS 'Count'
23     FROM lt_attr
24     GROUP BY 1, 2
25     ORDER BY 3 DESC;
```

What is the typical user journey?

A majority(91%) of visitors first came to CoolTShirts by way of a story/news article campaigns

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

However, the story/news article campaign only accounted for 31% of visitors last visit to the CoolTShirts. Most visitor(54%) revisit the site by way of retargeting/newsletter campaigns

| Campaign | Count |
|-------------------------------------|-------|
| 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 |

Most visitors (78%) that became customers of the site did so when their last touch was from retargeting/newsletter campaigns

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

What is the typical user journey?

In conclusion, most visitors to CoolTShirts were brought through story campaigns from sites like, New York Times, Medium, and BuzzFeed. However, most visitor need to be engaged by way of emails (retargetting and newsletter campaigns) or a retargetting ad (Facebook); in order to visit CoolTShirts and potentially make a purchase. Searches google and paid did also drive some visits however they amount was small in comparison to the other campaigns. Overall, this reflects the need for CoolTShirts to keep a balance in it campaigns between attracting new visitors to the site and reenaging previous visitors, who are more likely to make a purchase.

Section 3

3. Optimize the campaign budget

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

The chart below shows the top 4 performing campaign for the First Touch, Last Touch, Last to customer, and Last touch to customer conversion rate. CoolTShirts needs to balance bring in new visitors and reengage previous visitor. The campaigns that CoolTShirts should reinvest are campaigns like getting-to-know-cool-shirts, interview-with-cool-tshirts-founder and ten-crazy-cool-tshirts-fact, because these campaigns were responsible for bring 91% of new visitors to the site. In addition, the company should also reinvest in retargeting-ad and weekly-newsletter campaigns. The data shows the most first time visitors do not make a purchase, however if the visitor is brought back to the site again the likely hood of them making a purchase is greatly increased. Reinvesting in these 5 campaign should help continue to bring new visitors to the site, and help reengage former visitors to revisit and potentially make a purchase

Note: 5 chosen campaigns to reinvest in are highlighted in red

| Campaign | FT Count | % of FT | LT Count | % of LT | LT to Purchase Count | % of LT to Purchase | Visitor to Customer rate (LT to Purchase/LT) |
|-------------------------------------|----------|---------|----------|---------|----------------------|---------------------|--|
| cool-tshirts-search | 169 | 9% | 60 | 3% | 2 | 1% | 3% |
| getting-to-know-cool-tshirts | 612 | 31% | 232 | 12% | 9 | 2% | 4% |
| interview-with-cool-tshirts-founder | 622 | 31% | 184 | 9% | 7 | 2% | 4% |
| paid-search | 0 | 0% | 178 | 9% | 52 | 14% | 29% |
| retargeting-ad | 0 | 0% | 443 | 22% | 113 | 31% | 26% |
| retargeting-campaign | 0 | 0% | 245 | 12% | 54 | 15% | 22% |
| ten-crazy-cool-tshirts-facts | 576 | 29% | 190 | 10% | 9 | 2% | 5% |
| weekly-newsletter | 0 | 0% | 447 | 23% | 115 | 32% | 26% |