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First- and Last- Touch Attribution With CoolTShirts.com

Learn SQL from Scratch
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1. Getting to know CoolTShirts.com

1.1 CoolTShirts' marketing campaigns

CoolTShirts is running several campaigns on several sources to promote their T-shirt range. They have tabulated the information regarding these campaigns into an SQL table called *page_visits*.

- **Campaigns** refer to the pieces of individual marketing content used to promote CoolTShirts' products. In SQL, the campaigns are represented by the title of each article, and coded in a column titled **utm_campaign**. CoolTShirts has published **8 distinct campaigns**.
- **Sources** refer to the name of the websites that the articles in each campaign are published. They are represented by the title of the website, and coded in a column titled **utm_source**. CoolTShirts has published their campaigns on **6 distinct websites** (sources).
- The use of the **utm- prefix** in both campaign and source columns refers to UTM parameters, which allow website browsers to display (attribute) individual campaigns responsible for delivering marketing results (such as traffic).

utm_campaign	utm_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

2.2 Pages on CoolTShirts' website

CoolTShirts has **4 pages** on their website, which are meant to be accessed in the following order:
1. Landing page (landing_page)
2. Shopping cart (shopping_cart)
3. Checkout (checkout)
4. Purchase (purchase)

The SQL query to obtain these page names from the ***page_visits*** table is shown on the *right*, while the query results are shown *below*.

```
SELECT DISTINCT page_name
FROM page_visits;
```

page_name
1 – landing_page
2 – shopping_cart
3 - checkout
4 - purchase

2. CoolTShirts' user journey

2.1 First touches: How do CoolTShirts' customers first discover the website?

Of all 8 campaigns that CoolTShirts runs, 4 of them emerge as the first ones discovered by their potential customers.
- Three of these are feature articles – an interview with CoolTShirts' founder, published on Medium, is responsible for **the most discoveries of CoolTShirts' website**. This is closely followed by a New York Times feature, 'Getting to know CoolTShirts', and a BuzzFeed feature, 'Ten Crazy CoolTShirts Facts'.
- A specific search for the keyword 'CoolTShirts' on Google ranked last in bringing about discoveries of the website.
- The query result below is labeled as 'ft_attr', which is short for 'first touch attribution'. First touch attribution identifies the campaigns that customers accessed that led to the discovery of CoolTShirts' website.

ft_attr.utm_source	ft_attr.utm_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

2.2 Last touches: Which campaigns lead CoolTshirts' customers to eventually purchase their products?

All 8 CoolTShirts campaigns have led customers to purchase products, in varying degrees.

- CoolTShirts' weekly newsletter is the **most popular campaign leading to a purchase**. This is closely followed by a retargeting ad on Facebook.
- A full retargeting campaign on Facebook was only **half as effective** in pulling in purchases as the **retargeting ad**.
- **Paid search** was **much more successful in prompting purchases** from customers than a free keyword-based search.
- The feature articles were often the last pages customers accessed before leaving the website, but weren't directly responsible for prompting purchases.
- The query result on the right is labeled as 'lt_attr', which is short for 'last touch attribution'. This is drilled down further to identify the last campaign accessed that led to a purchase on CoolTShirts' website.

lt_attr.utm_source	lt_attr.utm_campaign	COUNT (*)
email	weekly-newsletter	115
facebook	retargetting-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

2.2 Last touches: Which campaigns lead CoolTshirts' customers to purchase their products?

There is a noticeable difference between the last page accessed by customers, and the last page accessed before a purchase.
- The three most popular 'last touches' – the weekly newsletter, the retargeting ad and the retargeting campaign – are also the three most popular pages accessed before purchase.
- The articles, however, didn't fare as well: less than 10 customers purchased immediately after reading them.
- Keyword searches for 'CoolTShirts' on Google were the least popular, both as the 'last touch' and the last page accessed before purchase.
- The query used to search for last touches (leading to a purchase) is illustrated on the right, while the difference between the last page accessed by customers and the last page accessed before a purchase is tabulated in the next slide.

```
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),
lt_attr AS (
SELECT lt.user_id,
lt.last_touch_at,
pv.utm_source,
pv.utm_campaign,
pv.page_name
FROM last_touch AS 'lt'
JOIN page_visits AS '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;
```

2.2 Last touches: Which campaigns lead CoolTshirts' customers to eventually purchase their products?

lt_attr.utm_source	lt_attr.utm_campaign	COUNT (*)	COUNT (*) who landed on page '4-purchase'	% difference
email	weekly-newsletter	447	115	25.7%
facebook	retargetting-ad	443	113	25.5%
email	retargeting-campaign	245	54	22.0%
google	paid-search	178	52	29.2%
buzzfeed	ten-crazy-cool-tshirts-facts	190	9	4.7%
nytimes	getting-to-know-cool-tshirts	232	9	3.9%
medium	interview-with-cool-tshirts-founder	184	7	3.8%
google	cool-tshirts-search	60	2	3.3%

2.3 CoolTShirts' typical user journey

1. Potential customer discovers CoolTShirts through one of the three **feature articles** on Buzzfeed, New York Times and Medium, with the Medium feature (interview with CoolTShirts' founder) being the most popular.
2. Potential customer leaves the website with **knowledge about CoolTShirts' products**, but **without making a purchase** (this can be inferred from the low last-touch attribution from the articles themselves).
3. However, at this stage, **many subscribe to CoolTShirts' newsletter** (high last-touch attribution, as well as allowing for email retargeting campaigns), or **follow CoolTShirt on Facebook** (which allows CoolTShirts to run retargeting ads to them on Facebook).
4. The potential customer either sees the **email newsletter**, receives **a retargeted ad on Facebook**, receives a **retargeted email campaign** on their email account, or sees a **Google search ad** (courtesy of paid search campaigns). These lead them to **remember CoolTShirts' offerings**, which leads them to **finally purchase** a t-shirt (or a couple of them) from the CoolTShirts' website.

In summary, CoolTShirts' typical user journey is:
Feature article -> Email/Facebook engagement -> Retargeting (Facebook, email, paid search)-> Purchase

3. How should CoolTShirts optimize their campaign budget?

3.1 CoolTShirts' most effective campaigns

CoolTShirts' ideal marketing budget should be distributed at key steps along the user journey that lead to the most results. Since they have the budget to optimize 5 campaigns, these are the ones they should focus on:

- For the articles, the **Medium and New York Times features** should be optimized as they bring in the most first-attribution traffic – establishing the first step in the user journey.
- The **email newsletter and retargeting ad on Facebook** should be optimised as they form the crucial 'link' between discovery and purchase. The budget for the email newsletter in particular should be maximised so that improvements can be made, to encourage customers to purchase without the need for a retargeted email campaign.
- **Paid search** is also a strong campaign that should be optimised further – although it dosen't receive as much click-throughs as the newsletter and Facebook, the percentage of click-throughs through paid search is the highest of all campaigns (29%), which makes it a result-delivering campaign.