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1. Get familiar with the company

CoolTShirts is an innovative apparel shop. They are running a few marketing campaigns to increase website visits and revenue. To gain insights on those campaigns, they are mapping out their customer's journey from first visit on their site to checkout.

1. Get familiar with the company

1.1 How many campaigns and sources does CoolTShirts use and how are they related? Be sure to explain the difference between *utm_campaign* and *utm_source*.

Difference between *utm_campaign* and *utm_source*.	utm_source	Identifies which site has directed the traffic to CoolTShirts, a source can be running multiple campaigns.
	utm_campaign	Identifies the specific advertisement campaign, each campaign can only have 1 source.

```
1    -- Number of distinct campaigns
2    SELECT COUNT(DISTINCT utm_campaign) AS 'Campaigns'
3    FROM page_visits;
4
5    -- Number of distinct soucres
6    SELECT COUNT(DISTINCT utm_source) AS 'Sources'
7    FROM page_visits;
8
9    -- Relation of Campiagns and Sources
0    SELECT DISTINCT utm_campaign AS 'Campaigns',
1      utm_source AS 'Sources'
2    FROM page_visits;
```

DISTINCT is used to return only the unique values.

COUNT is used to count the number of campaign and sources.

AS renames a column for better visualisation.

1. Get familiar with the company

1.1 How many campaigns and sources does CoolTShirts use and how are they related? Be sure to explain the difference between *utm_campaign* and *utm_source*.

Campaigns	
8	
Sources	
6	

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

The results shows that there are 8 Campaigns and 6 Sources.

The relationship between campaigns and sources is indicated by the campaigns on the left being directed from the source on the right column.

It can be seen that each campaigns only has 1 source, while some sources such as google and email have multiple campaigns attached to them.

1. Get familiar with the company

1.2 What pages are on their website?

```
1    -- Pages on CoolTShirt
2    SELECT DISTINCT page_name AS 'Page'
3    FROM page_visits;
```

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

The results shows that there are 4 pages on CoolTShirt site: *landing_page, shopping_cart, checkout* and *purchase*.

DISTINCT is again used to return only the unique values so that we can clearly see which pages are on the site.

2. What is the user journey?

User journey shows the user workflow on a site, it is used to reveal areas where user drop-off a site and can be used as an indicator for the improvement of the workflow.

2. What is the user journey?

2.1 How many first touches is each campaign responsible for?

```
1    --First Touch
2    --First Touch temporary table
3    WITH first_touch AS (
4        SELECT user_id,
5            MIN(timestamp) AS first_touch_at
6        FROM page_visits
7        GROUP BY user_id)
8    --Finding number first touch by each campaign
9    SELECT pv.utm_campaign AS 'Campaign',
10       COUNT (ft.first_touch_at) AS 'First Touch'
11   FROM first_touch ft
12   JOIN page_visits pv
13       ON ft.user_id = pv.user_id
14       AND ft.first_touch_at = pv.timestamp
15   GROUP BY 1;
```

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

To find the number of first touches each campaign is responsible for, a first touch temporary table was created by grouping by *user_id* and selecting *MIN(timestamp),* to find the first instance a user lands on the site.

Next, the table was joined on user id and first touch timing, so that both the columns for campaign and first touch can be selected in 1 table. Lastly, the table grouped by campaigns so that the number of first touch attributed to each campaign can be clearly displayed.

2. What is the user journey?

2.2 How many last touches is each campaign responsible for?

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

```
1   --Last Touch
2   --Last Touch temporary table
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   --Finding number of last touch by each campaign
9   SELECT pv.utm_campaign AS 'Campaign',
10    COUNT(lt.last_touch_at) AS 'Last Touch'
11  FROM last_touch lt
12  JOIN page_visits pv
13      ON lt.user_id = pv.user_id
14      AND lt.last_touch_at = pv.timestamp
15  GROUP BY 1;
16
```

Similar to finding the number of first touches for each campaign, a last touch temporary table was created by grouping by *user_id* and selecting *MAX(timestamp),* to find the last instance a user was on the site.

The table was joined on user id and last touch timing and grouped by campaigns to display the number of last touch attributed to each campaign.

2. What is the user journey?

2.3 How many visitors make a purchase?

```sql
1   --Number of user who made a purchase
2   SELECT COUNT(DISTINCT user_id) 'Number of Users'
3   FROM page_visits
4   WHERE page_name = '4 - purchase';
```

Number of Users
361

A total of 361 users made it to the purchase page.

COUNT and *DISTINCT* were used to count the number of unique users, and by using *WHERE* a specific page can be chosen.

2. What is the user journey?

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

```sql
1   --Last Touch + purchase each campaign responsible for?
2   --Last Touch temporary table
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   --Finding number of last touch by each campaign
9   SELECT pv.utm_campaign AS 'Campaign',
10     COUNT(lt.last_touch_at) AS 'Last Touch'
11  FROM last_touch lt
12  JOIN page_visits pv
13      ON lt.user_id = pv.user_id
14      AND lt.last_touch_at = pv.timestamp
15  --Last touch on purchase page
16  WHERE pv.page_name = '4 - purchase'
17  GROUP BY 1
18  ORDER BY 2 DESC;
```

This query is similar to the last touch query with an additional *WHERE* clause to specify last touch on the purchase page.

An **ORDER BY** was also added to sort the results in descending order for better visualisation.

Campaign	Last Touch
weekly-newsletter	114
retargetting-ad	112
retargetting-campaign	53
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. Get familiar with the company

2.5 What is the typical user journey?

From 1.2, we know that the user takes the following pathway when they visit the CoolTShirts site.

Landing Page → Shopping Cart → Checkout → Purchase
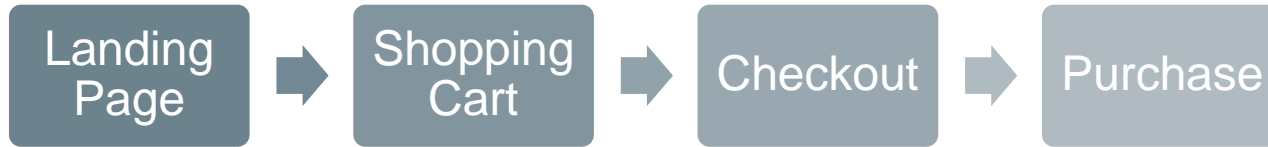
The goal is to track how many user visited the site and how many actually made a purchase during last touch.

By capturing first touch, last touch and last touch at purchase, we are able to see how many users visited, where did they drop off and how many users actually made a purchase.
Another area that can be explored is which page most user drop-off the site, it will provide feedback on how to improve the user interface.

1. Get familiar with the company

2.5 What is the typical user journey?

Gathering data from the previous investigation,

Out of the 1979 users who used the site,
358 made it to the purchase page.

This indicates a high conversion rate of 18.09%.

Campaign	First Touch
interview-with-cool-tshirts-founder	622
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ten-crazy-cool-tshirts-facts	576
cool-tshirts-search	169

Campaign	Last Touch
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ten-crazy-cool-tshirts-facts	190
interview-with-cool-tshirts-founder	184
paid-search	178
cool-tshirts-search	60

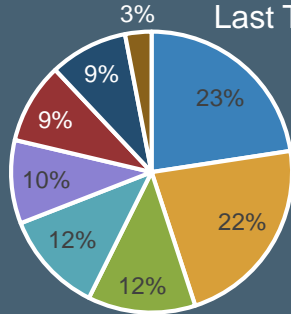| Campaign	Last Touch purchase
weekly-newsletter	114
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cool-tshirts-search	2

3. Optimize the campaign budget

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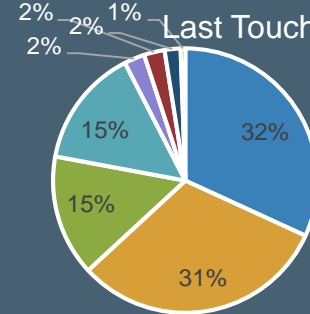

First Touch
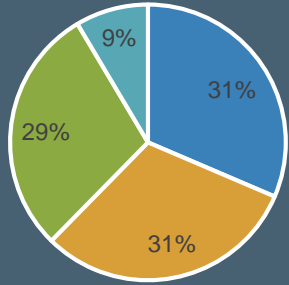
- interview-with-cool-tshirts-founder
- getting-to-know-cool-tshirts
- ten-crazy-cool-tshirts-facts
- cool-tshirts-search

31%, 31%, 29%, 9%

Last Touch

- weekly-newsletter
- retargetting-ad
- retargetting-campaign
- getting-to-know-cool-tshirts
- ten-crazy-cool-tshirts-facts
- interview-with-cool-tshirts-founder
- paid-search
- cool-tshirts-search

3%, 23%, 22%, 12%, 12%, 10%, 9%, 9%

Last Touch Purchase

- weekly-newsletter
- retargetting-ad
- retargetting-campaign
- paid-search
- getting-to-know-cool-tshirts
- ten-crazy-cool-tshirts-facts
- interview-with-cool-tshirts-founder
- cool-tshirts-search

2%, 2%, 2%, 2%, 1%, 32%, 31%, 15%, 15%

The campaigns interview-with-cool-tshirts-founder,getting-to-know-cool-tshirts, ten-crazy-cool-tshirts-facts all did pretty well in drawing users to the site, this most likely includes a high number of new customers. Choosing these 3 campaigns will help with CoolTShirts's brand growth.

weekly-newsletter was the winner for last touch and last touch purchase, it's definitely effective in drawing users who have previously drop-off along the workflow back to the site and make a purchase, this might likely be due to offers of discount or loyalty perks. This is definitely a good choice to continue. Similarly, retargetting-ad also great promise in drawing back a large number of users for last touch and last touch purchase.

In conclusion, seeing the high conversion rate of 18.09%, effective campaigns should be continued, and these campaigns are: interview-with-cool-tshirts-founder,getting-to-know-cool-tshirts, ten-crazy-cool-tshirts-facts, weekly-newsletter, retargetting-ad. It should be noted that this decision is made without considering the cost of campaigns. When taking the cost into consideration the choice may differ as some seemingly effective campaigns may have lower return than their actual cost.