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CoolTshirts

Marketing Attribution – SQL and Python Project

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1. Introduction

Marketing Attribution: CoolTShirts

1. Get familiar with the company.
    a) 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.
    b) What pages are on their website?
2. What is the user journey?
    a) How many first touches is each campaign responsible for?
    b) How many last touches is each campaign responsible for?
    c) How many visitors make a purchase?
    d) How many last touches on the purchase page is each campaign responsible for?
    e) What is the typical user journey?
3. Optimize the campaign budget.
    a) CoolTShirts can re-invest in 5 campaigns. Which should they pick and why?

2. Get familiar with CoolTShirts

Q1. Campaigns and Sources

- The first query gives the distinct campaigns, the 2nd query gives the distinct sources and the 3rd query gives the sources for each individual campaigns.
- Number of campaigns is 8 and Number of sources is 6.
- There doesn't seem to be multiple sources for the campaigns.
- The searches are coming from google.

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

```
--SQL Code
SELECT DISTINCT utm_campaign
FROM page_visits;

SELECT DISTINCT utm_source
FROM page_visit;

SELECT
    DISTINCT utm_campaign, utm_source
FROM
    page_visits
GROUP BY
    utm_campaign;
```

Q2. Pages on CoolTShirts

There are 4 different pages with CoolTShirts as listed below

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

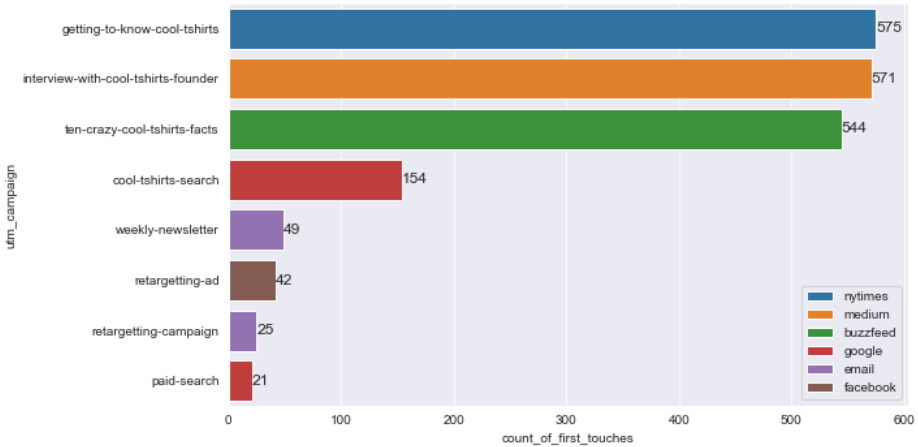
page_name
1 - landing_page
2 - shopping_cart
3 - checkout
4 - purchase

```
--SQL Code
SELECT DISTINCT utm_campaign
FROM page_visits;
```

3. What is the user journey?

Q3. First Touch Attribution to campaign

- I have identified the count of first touch attributions for each campaign and utm source.
- As you can see from the chart below, 3 campaing outperformed the others in the number of first touch. In addition, the sources used in the 3 first interactions were nytimes, medium and buzzfeed.

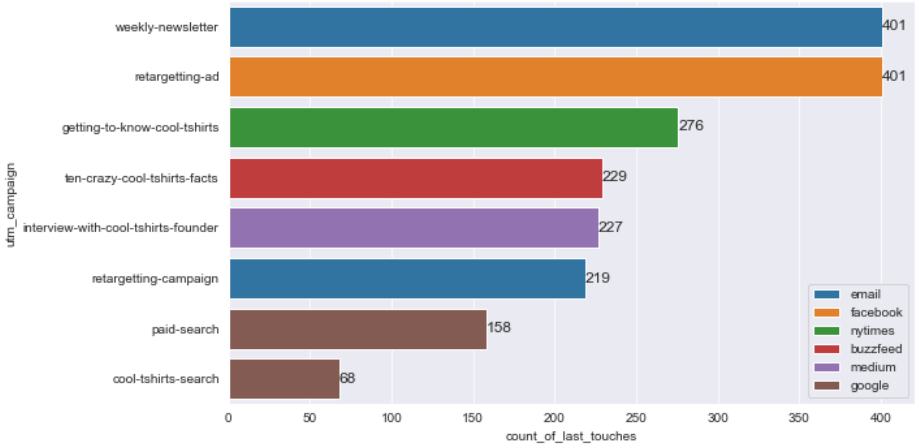



```
--SQL Code
WITH first_touch AS(
SELECT user_id,MIN(timestamp) as first_touch_at
FROM page_visits
GROUP BY user_id),
ft_attr AS(
SELECT ft.user_id,ft.first_touch_at,pv.utm_source,
       pv.utm_campaign
FROM first_touch ft
JOIN page_visits pv ON ft.user_id = pv.user_id
                    AND ft.first_touch_at = pv.timestamp)
SELECT utm_source,utm_campaign,COUNT(DISTINCT user_id)
       count_of_first_touches
FROM ft_attr
GROUP BY 1, 2
ORDER BY 3 DESC;
```

```
--Python Code
plt.figure(figsize=(10,5))
ax = sns.barplot(data=first_touches, y="utm_campaign",
x="count_of_first_touches", hue="utm_source",dodge=False)

for container in ax.containers:
    ax.bar_label(container, fontsize=12)
plt.legend(loc=4)
plt.tight_layout()
```

Q4. Last Touch Attribution to campaign

- I have identified the count of first touch attributions for each campaign and utm source.
- As you can see from the chart below, 2 campaign outperformed the others in the number of last touch. In addition, the sources used in the 3 last touch were email, facebook and nytimes.




```
--SQL Code
WITH last_touch AS(
SELECT user_id,MAX(timestamp) AS last_touch_at
FROM page_visits
GROUP BY user_id),
lt_attr AS(
SELECT ft.user_id,ft.last_touch_at,pv.utm_source,
       pv.utm_campaign
FROM last_touch ft
JOIN page_visits pv ON ft.user_id = pv.user_id
                    AND ft.last_touch_at = pv.timestamp)
SELECT utm_source, utm_campaign, COUNT(DISTINCT user_id)
count_of_last_touches
FROM lt_attr
GROUP BY 1, 2
ORDER BY 3 DESC;
```

```
--Python Code
plt.figure(figsize=(10,5))
ax = sns.barplot(data=last_touches, y="utm_campaign",
x="count_of_last_touches", hue="utm_source", dodge=False)

for container in ax.containers:
    ax.bar_label(container, fontsize=12)
plt.legend(loc=4)
plt.tight_layout()
```

Q5. Last Touch Attribution to campaign

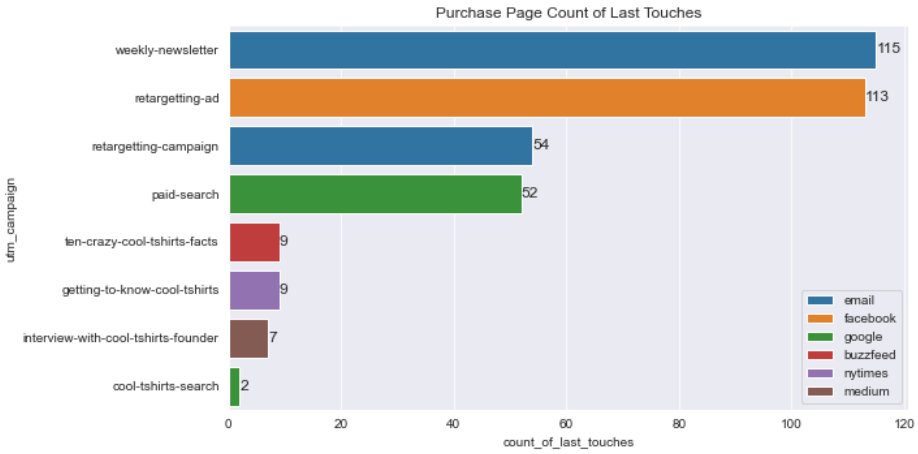
- There are 361 visitors who have made purchases from the website.

Count_of_visitors
361

```
--SQL Code
SELECT
    COUNT(DISTINCT user_id) AS count_of_visitors
FROM
    page_visits
WHERE
    page_name = '4 - purchase'
```

Q6. Last Touch Attribution to campaign

- I have identified the count of last touch attributions for each campaign and utm source that contributed to a purchase.
- It can be analysed that the weekly-newsletter got the high purchases while lowest purchases came from cool-tshirts-search.
- Also, if you look carefully at the first and third lines, you can see that the most sales came from the email source.




```
--SQL Code
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 ft.user_id,ft.last_touch_at,pv.utm_source,
       pv.utm_campaign
FROM last_touch ft
JOIN page_visits pv ON ft.user_id = pv.user_id
                    AND ft.last_touch_at = pv.timestamp)
SELECT utm_source, utm_campaign, COUNT(DISTINCT user_id)
count_of_last_touches
FROM lt_attr
GROUP BY 1, 2
ORDER BY 3 DESC;
```

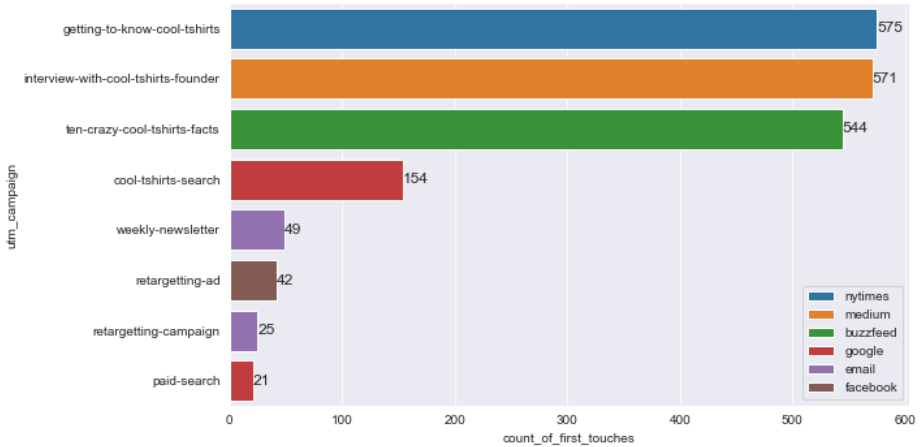
```
--Python Code
plt.figure(figsize=(10,5))
ax = sns.barplot(data=purchase_page, y="utm_campaign",
x="count_of_last_touches", hue="utm_source", dodge=False)

for container in ax.containers:
    ax.bar_label(container, fontsize=12)
plt.legend(loc=4)
plt.tight_layout()
plt.title("Purchase Page Count of Last Touches");
```

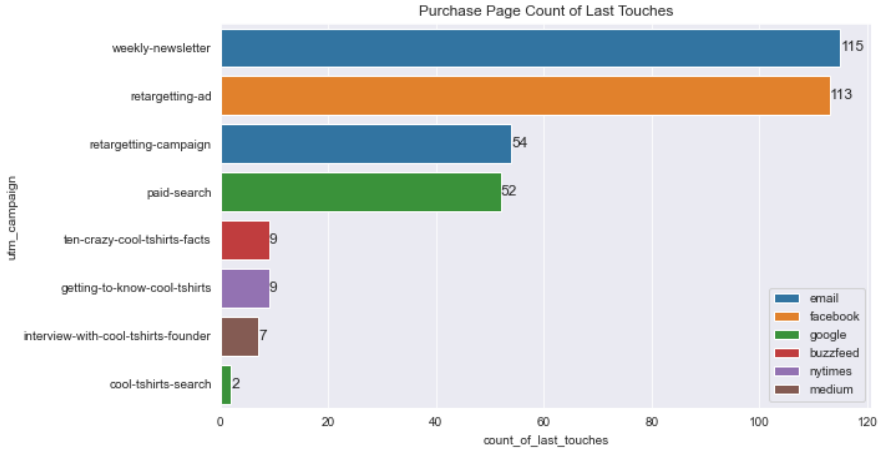
4. Optimizing the campaign budget

Q7. CoolTShirts – Top 5 campaigns to reinvest

Given the findings from First touch and Last touch attributions from the results below, it will be recommended to reinvest in below 5 campaigns:

1. Weekly Newsletter – Had the highest last touch attribution and also purchases made.
2. Retargeting ad – Had the 2nd highest last touch attribution and also purchases made.
3. Getting to know CoolTShirts– Attracted the largest audience in first touch attribution.
4. Interview with CoolTShirts founder– Attracted the 2nd largest audience in first touch attribution.
5. Ten Crazy Cool TShirts facts – Had the 3rd largest audience in first touch attribution, however it has resulted in very few purchases and so it would be recommended to find explore new campaign for the 5th spot.





Thank you for your time and attention.