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Capstone Project: CoolTShirts

Learn SQL from Scratch
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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`.

- 1.2 - What pages are on their website?

2. What is the user journey?

- 2.1 - How many first touches is each campaign responsible for?

- 2.2 - How many last touches is each campaign responsible for?

- 2.3 - How many visitors make a purchase?

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

- 2.5 - What is the typical user journey?

3. Optimize the campaign budget

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

1.1 CoolTShirts Campaigns and Sources

Campaigns are messages used over various sources to get responses from users.

- CoolTShirt uses 8 Campaigns

Sources are websites and or emails that will display various campaigns designated for that source.

- NY Times
- Email
- Buzzfeed
- Facebook
- Medium
- Google

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

```
SELECT COUNT(Distinct utm_campaign) AS 'Campaigns'
FROM page_visits;

SELECT COUNT(Distinct utm_source) AS 'Sources'
FROM page_visits;

SELECT DISTINCT utm_campaign AS 'Campaigns', utm_source AS
'Sources'
FROM page_visits;

SELECT DISTINCT page_name AS 'Pages'
FROM page_visits
```

1.2 CoolTShirts Website Pages

CoolTShirts has the following pages on their website
- Landing Page
- Shopping Cart
- Checkout
- Purchase

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

```sql
SELECT DISTINCT page_name AS 'Pages'
FROM page_visits;
```

2.1 CoolTShirts First Touches by Campaigns

CoolTShirts first touches by each campaign

1. interview-with-cool-tshirts-founder
2. getting-to-know-cool-tshirts
3. ten-crazy-cool-tshirts-facts
4. cool-tshirts-search

Source "Medium" using the campaign "interview-with-cool-tshirts-founder" draws the most first touches

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

```
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 ft_attr.utm_source AS 'Source',
    ft_attr.utm_campaign AS 'Campaign',
    COUNT(*) AS COUNT
FROM ft_attr
GROUP BY utm_campaign, utm_source
ORDER BY COUNT DESC;
```

2.2 CoolTShirts Last Touches by Campaigns

CoolTShirts last touches by each campaign
1. weekly-newsletter
2. retargetting-ad
3. retargeting-campaign
4. getting-to-know-cool-tshirts
5. ten-crazy-cool-tshirts-facts
6. interview-with-cool-tshirts-founder
7. paid-search
8. cool-tshirts-search

Source "Email" using the campaign "weekly-newsletter" draws the most last touches versus "Medium" using the campaign "interview-with-cool-tshirts-founder" which had the most first touches

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

```
WITH last_touch AS (
    SELECT user_id,
        MAX(timestamp) as last_touch_at
    FROM page_visits
    GROUP BY user_id),
lt_attr AS (
    SELECT lt.user_id,
        lt.last_touch_at,
        pv.utm_source,
        pv.utm_campaign
    FROM last_touch lt
    JOIN page_visits pv
    ON lt.user_id = pv.user_id
    AND lt.last_touch_at = pv.timestamp
)
SELECT lt_attr.utm_source AS 'Source',
    lt_attr.utm_campaign AS 'Campaign',
    COUNT(*) AS COUNT
FROM lt_attr
GROUP BY utm_campaign, utm_source
ORDER BY COUNT DESC;
```

2.4 CoolTShirts Purchase Page Last Touches Per Campaigns

CoolTShirts users made 361 purchases, based on purchase page last touches per campaign

1. weekly-newsletter
2. retargetting-ad
3. retargeting-campaign
4. paid-search
5. getting-to-know-cool-tshirts
6. ten-crazy-cool-tshirts-facts
7. interview-with-cool-tshirts-founder
8. cool-tshirts-search

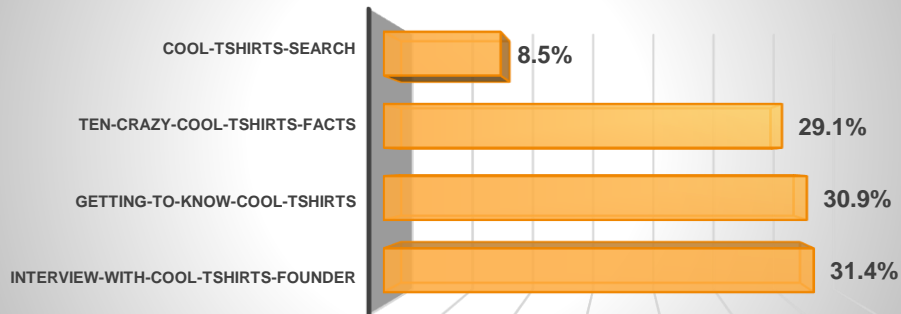CoolTShirts users last touches per sources was 1,979 and out of that users made 361 purchases, that's an 18.2% rate.

Users Purchases		
361		

Source	Campaign	COUNT
email	weekly-newsletter	115
facebook	retargetting-ad	113
email	retargetting-campaign	54
google	paid-search	52
nytimes	getting-to-know-cool-tshirts	9
buzzfeed	ten-crazy-cool-tshirts-facts	9
medium	interview-with-cool-tshirts-founder	7
google	cool-tshirts-search	2

```
SELECT COUNT(Distinct user_id) AS
'Users Purchases'
FROM page_visits
WHERE page_name = '4 - purchase';
------------------------------------------------
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
  FROM last_touch lt
  JOIN page_visits pv
    ON lt.user_id = pv.user_id
    AND lt.last_touch_at = pv.timestamp
)
SELECT lt_attr.utm_source AS 'Source',
    lt_attr.utm_campaign AS 'Campaign',
    COUNT(*) AS COUNT
FROM lt_attr
GROUP BY utm_campaign, utm_source
ORDER BY COUNT DESC;
```
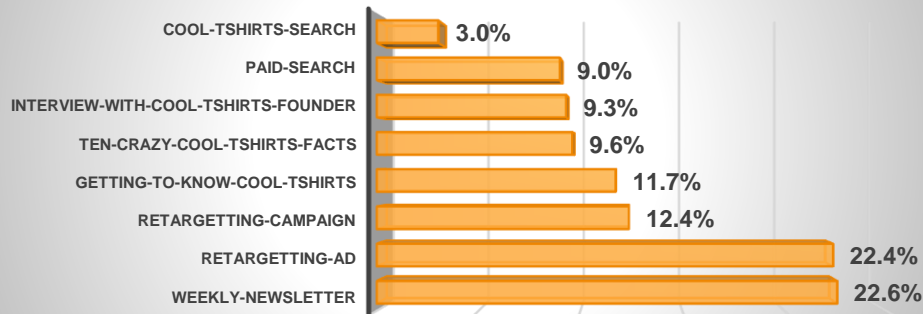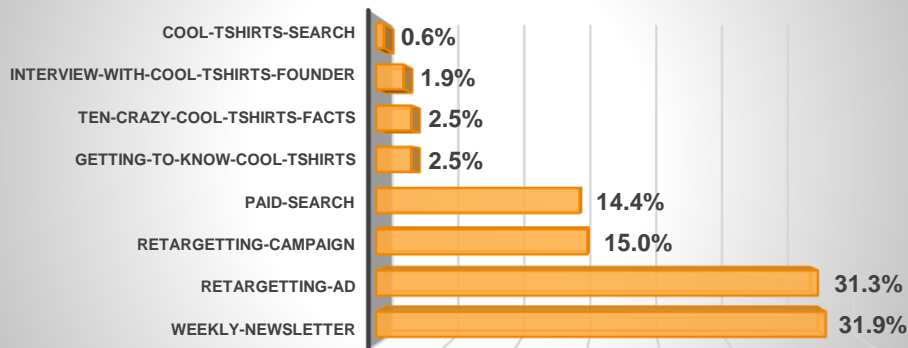
2.5 What is the typical user journey?

First Touches by Campaigns

- COOL-TSHIRTS-SEARCH — 8.5%
- TEN-CRAZY-COOL-TSHIRTS-FACTS — 29.1%
- GETTING-TO-KNOW-COOL-TSHIRTS — 30.9%
- INTERVIEW-WITH-COOL-TSHIRTS-FOUNDER — 31.4%

Last Touches by Campaigns

- COOL-TSHIRTS-SEARCH — 3.0%
- PAID-SEARCH — 9.0%
- INTERVIEW-WITH-COOL-TSHIRTS-FOUNDER — 9.3%
- TEN-CRAZY-COOL-TSHIRTS-FACTS — 9.6%
- GETTING-TO-KNOW-COOL-TSHIRTS — 11.7%
- RETARGETTING-CAMPAIGN — 12.4%
- RETARGETTING-AD — 22.4%
- WEEKLY-NEWSLETTER — 22.6%

Purchases by Campaigns

- COOL-TSHIRTS-SEARCH — 0.6%
- INTERVIEW-WITH-COOL-TSHIRTS-FOUNDER — 1.9%
- TEN-CRAZY-COOL-TSHIRTS-FACTS — 2.5%
- GETTING-TO-KNOW-COOL-TSHIRTS — 2.5%
- PAID-SEARCH — 14.4%
- RETARGETTING-CAMPAIGN — 15.0%
- RETARGETTING-AD — 31.3%
- WEEKLY-NEWSLETTER — 31.9%

Campiagns about CoolTShirts generate the most first touches
- Interview with CoolTShirts Founder
- Getting to Know CoolTshirts
- Ten Crazy CoolTShirts Facts

Campaigns that are retargeting and weekly lead to more purchases from last touches
- Weekly Newsletter
- Re-Targeting AD
- Re-Targeting Campaign

3.1 CoolTShirts can re-invest in these 5 campaigns

Campiagns that CoolTShirts should re-invest in
1. Interview with CoolTShirts Founder
2. Getting to Know CoolTshirts
3. Ten Crazy CoolTShirts Facts
4. Weekly Newsletter
5. Re-Targeting Ad

CoolTShirts should also focus on their reminder campaigns since they generate the most last touches that lead to user purchases.

Source	First Touch Campaign	Total	Percentage
medium	interview-with-cool-tshirts-founder	622	31.4%
nytimes	getting-to-know-cool-tshirts	612	30.9%
buzzfeed	ten-crazy-cool-tshirts-facts	576	29.1%

Source	Last Touch Campaign	Total	Percentage
email	weekly-newsletter	447	22.6%
facebook	retargetting-ad	443	22.4%
email	retargetting-campaign	245	12.4%

Source	Last Touch Purchase Campaign	Total	Percentage
email	weekly-newsletter	115	31.9%
facebook	retargetting-ad	113	31.3%
email	retargetting-campaign	54	15.0%