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Cool TShirts Attribution

Learn SQL from Scratch
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Cool TShirts Capstone Project

1. Get familiar with CoolTShirts
2. What is the typical user journey?
3. Optimize the campaign budget

1. Getting Familiar

1.1 Channel (Source) + Campaign Count

How many campaigns and sources does CoolTShirts use and how are they related?
- CoolTShirts uses 6 different channels (sources) to attract traffic to the website – utm_source indicates each different traffic source to the website.
- CoolTShirts has 8 different campaigns setup across the 6 channels to attract traffic to the website – utm_campaign indicates each unique campaign.

```
SELECT COUNT(DISTINCT utm_source) AS 'Channel Count'
FROM page_visits;

SELECT COUNT(DISTINCT utm_campaign) AS 'Campaign Count'
FROM page_visits;

SELECT DISTINCT utm_source AS 'Channels', utm_campaign AS 'Campaigns'
FROM page_visits
ORDER BY Channels, Campaigns;
```

Channel Count	
6	
Campaign Count	
8	
Channels	**Campaigns**
buzzfeed	ten-crazy-cool-tshirts-facts
email	retargetting-campaign
email	weekly-newsletter
facebook	retargetting-ad
google	cool-tshirts-search
google	paid-search
medium	interview-with-cool-tshirts-founder
nytimes	getting-to-know-cool-tshirts

1.2 Website Pages

What pages are on the website?
- There are four (4) website pages found on the website that tracking information is provided for from the campaigns
- The four pages are a linear progression through the website from the landing page of the campaign to the completion of a purchase

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

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

2. User Journey

2.1 Campaign First Touches

How many first touches is each campaign responsible for?
- Only four (4) campaigns contribute for first touch
- The vast majority are from three (3) PR type campaigns
- Organic Google Search results contribute a small amount

Channels	Campaigns	First Touches
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 'Channel', ft_attr.utm_campaign AS
'Campaign', COUNT(*) AS 'First Touches'
FROM ft_attr
GROUP BY ft_attr.utm_campaign, ft_attr.utm_source
ORDER BY COUNT(*) DESC;
```

2.2 Campaign Last Touches

How many last touches is each campaign responsible for?
- All eight (8) campaigns contribute last touches for purchases
- Email Newsletter + Facebook Retargetting contribute the most last touches
- Organic Google Search contributes the least last touches

```
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 'Channel', lt_attr.utm_campaign AS
'Campaign', COUNT(*) AS 'Last Touches'
FROM lt_attr
GROUP BY lt_attr.utm_campaign, lt_attr.utm_source
ORDER BY COUNT(*) DESC;
```

Channels	Campaigns	First Touches
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

2.3 Total Purchases

How many visitors make a purchase?
- 361 visitors make a purchase on the website, from 1979 landing page hits
- The steepest drop off as users move through the website is between the checkout and purchase pages
- Most users at least add a product to the shopping cart with 1881 of 1979 users hitting the Cart page

```
SELECT COUNT(DISTINCT user_id) AS 'Total Landing Page Hits'
FROM page_visits
WHERE page_name LIKE '1 - landing_page';

SELECT COUNT(DISTINCT user_id) AS 'Total Cart Hits'
FROM page_visits
WHERE page_name LIKE '2 - shopping_cart';

SELECT COUNT(DISTINCT user_id) AS 'Total Checkout Hits'
FROM page_visits
WHERE page_name LIKE '3 - checkout';

SELECT COUNT(DISTINCT user_id) AS 'Total Purchases'
FROM page_visits
WHERE page_name LIKE '4 - purchase';
```

Total Landing Page Hits
1979

Total Cart Hits
1881

Total Checkout Hits
1431

Total Purchases
361

2.4 Last Touch Purchases

How many last touches *on the purchase page* is each campaign responsible for?
- Email newsletter and Facebook retargetting contribute nearly identical purchase totals
- Google organic search results contribute nearly zero purchases

Channels	Campaigns	Purchases
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

```
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 'Channel', lt_attr.utm_campaign AS
'Campaign', COUNT(*) AS 'Purchases'
FROM lt_attr
GROUP BY lt_attr.utm_campaign, lt_attr.utm_source
ORDER BY COUNT(*) DESC;
```

2.5 Typical User Journey

The typical journey exists in two parts
- Users engage with initial media stories and other PR activity campaigns to land on the website's landing page and to return to the shopping cart
- In the second phase, users require secondary engagement with email, retargetting, and paid search ads to draw them back to the website to complete checkout and purchase

Campaigns	LP Hits	Campaigns	Cart Hits	Campaigns	Checkout Hits	Campaigns	Purchases
interview-with-cool-tshirts-founder	625	getting-to-know-cool-tshirts	682	weekly-newsletter	450	weekly-newsletter	115
getting-to-know-cool-tshirts	617	ten-crazy-cool-tshirts-facts	570	retargetting-ad	445	retargetting-ad	113
ten-crazy-cool-tshirts-facts	587	interview-with-cool-tshirts-founder	515	retargetting-campaign	246	retargetting-campaign	54
cool-tshirts-search	171	cool-tshirts-search	133	paid-search	179	paid-search	52
				getting-to-know-cool-tshirts	41	getting-to-know-cool-tshirts	9
				ten-crazy-cool-tshirts-facts	32	ten-crazy-cool-tshirts-facts	9
				interview-with-cool-tshirts-founder	31	interview-with-cool-tshirts-founder	7
				cool-tshirts-search	7	cool-tshirts-search	2

The data in this situation appears contrived:
- Users who do complete a purchase always have exactly four linear touch points through the site to complete a purchase, when a typical purchasing scenario is usually much less linear, a user may land on several different product or landing pages prior to progressing further.
- The average user in the database has 2.88 interactions on the website, while the average purchasing user has exactly 4.0, this was the data which identified this pattern.

3. Optimising Campaigns

3.1 Campaign Re-investment

Based on the data from the queries in the prior slide, CoolTShirts should clearly invest in 5 campaigns, in two distinct groups:
- Three campaigns from the first two phases of the customer journey contribute more traffic than any other by a ratio of more than 3:1 – highlighted below
- Two campaigns clearly contribute more checkout and purchase activity than any of the 6 others, by a minimum of nearly 2:1 – highlighted below

Campaigns	LP Hits	Campaigns	Cart Hits	Campaigns	Checkout Hits	Campaigns	Purchases
interview-with-cool-tshirts-founder	625	getting-to-know-cool-tshirts	682	weekly-newsletter	450	weekly-newsletter	115
getting-to-know-cool-tshirts	617	ten-crazy-cool-tshirts-facts	570	retargetting-ad	445	retargetting-ad	113
ten-crazy-cool-tshirts-facts	587	interview-with-cool-tshirts-founder	515	retargetting-campaign	246	retargetting-campaign	54
cool-tshirts-search	171	cool-tshirts-search	133	paid-search	179	paid-search	52
				getting-to-know-cool-tshirts	41	getting-to-know-cool-tshirts	9
				ten-crazy-cool-tshirts-facts	32	ten-crazy-cool-tshirts-facts	9
				interview-with-cool-tshirts-founder	31	interview-with-cool-tshirts-founder	7
				cool-tshirts-search	7	cool-tshirts-search	2

1.1 Example Slide, type 3

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column1	column2