codecademy

Learn SQL from Scratch
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1. Get Familiar with Cool T-shirts

1.1 Get Familiar with the Company

- The utm_source is the type of communication that directed the user to the site (i.e. where the user was when they clicked on the ad)
    - A single utm_source might be used to run multiple campaigns
    - For example, the utm_campaign "paid-search" and "weekly-newsletter" were both sent via the utm_source newsletter
- The utm_campaign is the name of the campaign (i.e. ad or email blast) that lead the user to the website
    - A single campaign can be run across multiple sources, but this is not represented in this data set.

```
SELECT COUNT (DISTINCT utm_campaign) AS 'Number of Campaigns'
FROM page_visits;
SELECT COUNT (DISTINCT utm_source) AS 'Number of Sources'
FROM page_visits;
SELECT utm_source,
    utm_campaign
FROM page_visits
GROUP BY utm_campaign;
```

Query Results
Number of Campaigns
8
Number of Sources
6

1.2 Get Familiar with the Company

- To find the names of each unique page on the CoolTShirts website, use the SELECT DISTINCT function

```
SELECT DISTINCT page_name AS 'Page Names'
FROM page_visits;
```

Query Results
Page Names
1 - landing_page
2 - shopping_cart
3 - checkout
4 - purchase

2. What is the User Journey?

2.1 What is the User Journey?

- They Query results below how how many **first** touches each campaign is responsible for
    - We are able to find the **first** touch for each user by using the **MIN()** function to identify the first time they were directed to the CoolTShirts
    - Out of the 8 active campaigns, only 4 resulted in first touches website

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

Query Results

```
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 'Campaign',
      COUNT(*)
FROM ft_attr
GROUP BY 1, 2
ORDER BY 3 DESC;
```

2.2 What is the User Journey?

- They Query results below how how many **last** touches each campaign is responsible for
  - We are able to find the **last** touch for each user by using the **MAX()** function to identify the last time they were directed to the CoolTShirts
  - All 8 of the active campaigns resulted in last touches
  - 69% of last touches are attributed, however, to the first 4 campaigns listed in the Query Results

```
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,
                pv.page_name
    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 'Campaign',
        COUNT(*)
FROM lt_attr
GROUP BY 1, 2
ORDER BY 3 DESC;
```

Query Results

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

2.3 & 2.4 What is the User Journey?

- 18% of visitors (361 out of 1,979) made a purchase on the CoolTshirts website
- A last touch is the last campaign a user clicked on before going to the CoolTShirts website and making a purchase.
  - We accomplish this by isolating the MAX function where the page visited was '4 - purchase'. This is important because these people are who generate revenue for the company.

Query Results		
COUNT(*)		
361		
Source	**Campaign**	**COUNT(*)**
email	weekly-newsletter	114
facebook	retargetting-ad	112
email	retargetting-campaign	53
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

```sql
SELECT COUNT(*)
FROM page_visits
WHERE page_name = '4 - purchase';
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,
            pv.page_name
  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 'Campaign',
        COUNT(*)
FROM lt_attr
WHERE page_name = '4 - purchase'
GROUP BY 1, 2
ORDER BY 3 DESC;
```

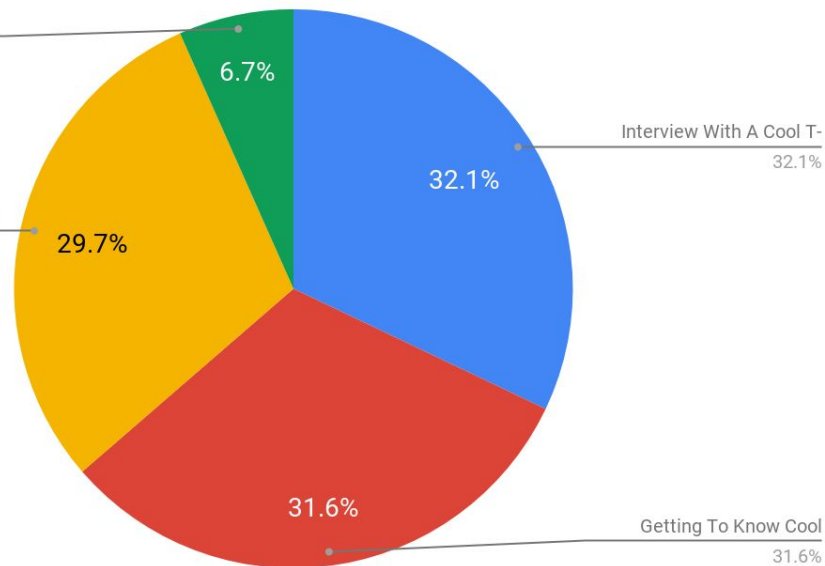# 2.5 What is the Typical User Journey

94% of Users Come to the Site from "Feel Good" Campaigns

- **Interview With A Cool T-Shirts Founder 32%**
- **Getting To Know Cool TShirts 32%**
- **Ten Crazy Cool TShirt Facts 30%**
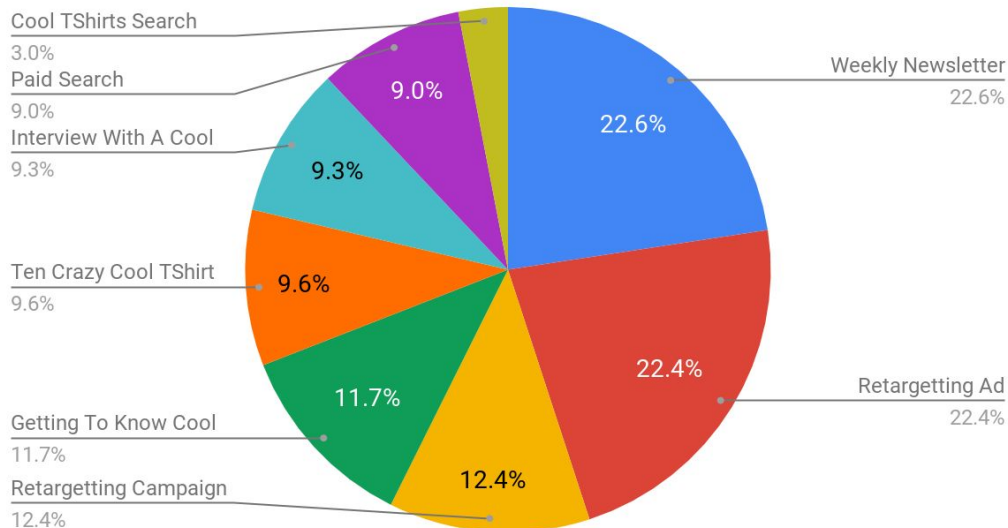- Cool TShirts Search 6%

First Touches

2.5 What is the Typical User Journey

They are brought <u>back</u> to the site when they see a "Re-Engagement" campaign
- This is usually a DIFFERENT, campaign than the "Feel Good" one they saw the first time
- 57% return due to a "Re-Engagement" Campaigns
  - Weekly Newsletter 23%
  - Retargetting Ad 22%
  - Retargetting Campaign 12%

Re-Engagement

Cool TShirts Search 3.0%
Paid Search 9.0%
Interview With A Cool 9.3%
Ten Crazy Cool TShirt 9.6%
Getting To Know Cool 11.7%
Retargetting Campaign 12.4%

9.0%
9.3%
22.6%
22.4%
11.7%
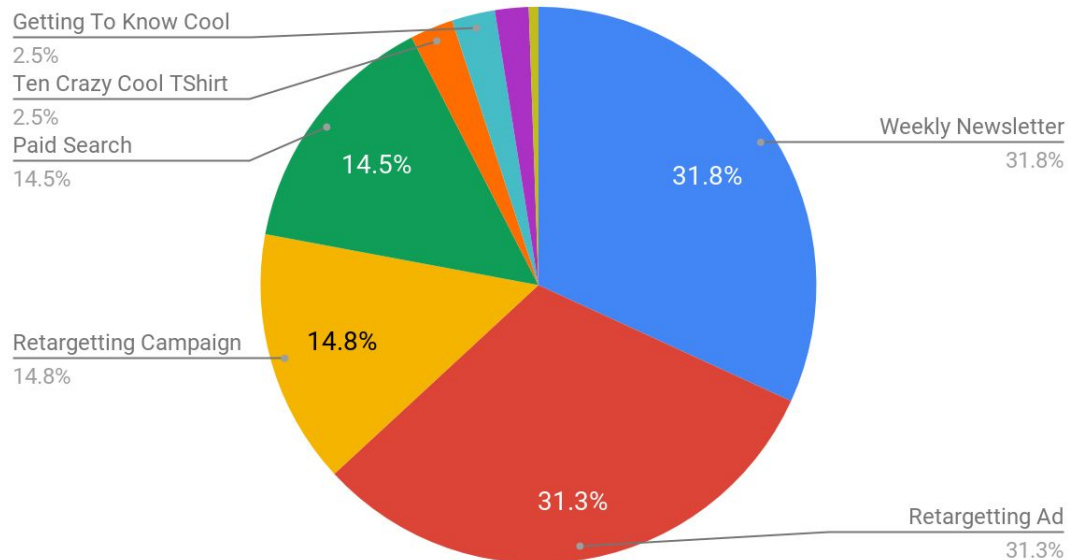12.4%
9.6%

Weekly Newsletter 22.6%
Retargetting Ad 22.4%

2.5 What is the Typical User Journey

The "Re-Engagement" campaigns lead to user purchases
- 93% of purchases came from "Re-Engagement" campaigns or Paid searches
  - **Weekly Newsletter 32%**
  - **Retargetting Ad 31%**
  - **Retargetting Campaign 15%**
  - **Paid Search 15%**

Purchases

Getting To Know Cool
2.5%
Ten Crazy Cool TShirt
2.5%
Paid Search
14.5%

14.5%

14.8%

Retargetting Campaign
14.8%

31.3%

Weekly Newsletter
31.8%

31.8%

Retargetting Ad
31.3%

2.5 What is the User Journey?

- A typical user is introduced to the website by a "Feel Good" Campaign
- Then, they receive a reminder to come back to the website from a "Re-Engagement" Campaign
- These "Re-Engagement campaigns", and some paid Google searches are what are ultimately driving revenue

3. Optimize the Campaign Budget

3.1 Optimize the Campaign Budget

Campaign	Source	1st Touches	% 1st Touches	Last Touches	% Last Touches	Purchases	% Purchases
Interview With A Cool T-Shirts Founder	Medium	622	32%	184	9%	7	2%
Getting To Know Cool TShirts	New York Times	612	32%	232	12%	9	3%
Ten Crazy Cool TShirt Facts	BuzzFeed	576	30%	190	10%	9	3%
Cool TShirts Search	Google	129	6%	60	3%	2	<1%
Weekly Newsletter	email	0	0%	447	23%	114	32%
Retargetting Ad	Facebook	0	0%	443	22%	112	31%
Retargetting Campaign	Email	0	0%	245	12%	53	15%
Paid Search	Google	0	0%	178	9%	52	15%

3.1 Optimize the Campaign Budget

- CoolTShirts should re-invest in these 5 campaigns
  - **Interview-with-cool-tshirts-founder** medium
  - **getting-to-know-cool-tshirts** nytimes
  - **ten-crazy-tshirts-facts** buzzfeed
  - **weekly-newsletter** email campaign
  - **retargeting-ad** Facebook
- Three campaigns introduced the majority of users to the CoolTShirts website
  - **91%** of first touches came from three campaigns:
    - **Interview-with-cool-tshirts-founder**
    - **getting-to-know-cool-tshirts** nytimes
    - **ten-crazy-tshirts-facts** buzzfeed
- Two campaigns were succesful in both brining users back to the site and generating purchses :
  - **88%** of all last touches that resulted in a purchase came from
    - **weekly-newsletter** email campaign
    - **retargeting-ad** Facebook
  - **63%** of last touches from re-targeting came from the following campaigns:
    - **weekly-newsletter** email campaign
    - **retargeting-ad** Facebook