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1. Get familiar with CoolTShirts

1.1 Get familiar with CoolTShirts

Marketing snapshot	
# of ad campaigns *CoolTShirts used different types of ad campaigns to drive traffic to its website, including email blasts, blog posts, newsletters and re targeting ads.*	8
# of sources *CoolTShirts created user touchpoints using sources such as Google, Facebook and Buzzfeed.*	6
Pages *CoolTShirts' website can be broken down into four pages.*	1 – Landing page 2 – Shopping cart 3 – Checkout 4 – Purchase

```
test.sqlite

1    SELECT COUNT (DISTINCT utm_campaign)
2    FROM page_visits;
3
4    SELECT COUNT (DISTINCT utm_source)
5    FROM page_visits;
6
7    SELECT utm_campaign, utm_source
8    FROM page_visits
9    GROUP BY utm_campaign;
10
11   SELECT DISTINCT page_name
12   FROM page_visits;
13
14
15
16
17
```

Save

Query Results

COUNT (DISTINCT utm_campaign)	
8	

COUNT (DISTINCT utm_source)	
6	

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

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

Database Schema

2. What is the user journey?

2.1 User journey

1. The journey starts when users are introduced to CoolTShirts through a marketing campaign.
2. Interested users begin their initial visit on the *landing page.*
3. Some users proceed to add items to their *shopping cart*, a smaller number *checkout* and a fraction go on to *purchase*.
4. Some users who do not buy during their first visit will go on to *purchase* in response to a retargeting ad.

Usage funnel — # distinct visitors

Page	# distinct visitors
1 - Landing page	1979
2 - Shopping cart	1881
3 - Checkout	1431
4 - Purchase	361

```
SELECT page_name,
       COUNT (DISTINCT user_id)
FROM page_visits
GROUP BY page_name;
```
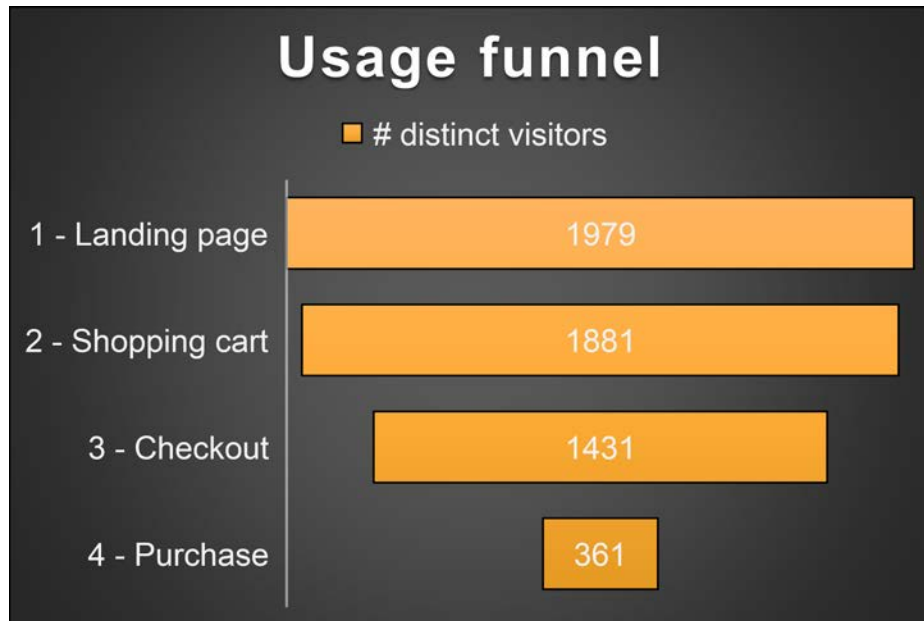
2.2 First touches

CoolTShirts' ran eight ad campaigns but all first touches were attributable to just four campaigns:

Rank	Campaign	Source	Attributable first touches
1	Interview with founder	Medium	622
2	Getting to know CoolTShirts	Nytimes	612
3	Ten crazy CoolTShirts facts	Buzzfeed	576
4	CoolTShirts search	Google	169

```sql
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,
           ft_attr.utm_campaign,
           COUNT(*)
    FROM ft_attr
    GROUP BY 1, 2
    ORDER BY 3 DESC;
```

2.3 Last touches

All eight ad campaigns were responsible for last touches:

Rank	Source	Campaign	Attributable last touches
1	Email	Weekly newsletter	447
2	Facebook	Retargeting ad	443
3	Email	Retargeting campaign	245
4	Nytimes	Getting to know CoolTShirts	232
5	Buzzfeed	Ten crazy CoolTShirts facts	190
6	Medium	Interview with CoolTShirts founder	184
7	Google	Paid search	178
8	Google	CoolTShirts search	60

```sql
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,
       lt_attr.utm_campaign,
       COUNT(*)
FROM lt_attr
GROUP BY 1, 2
ORDER BY 3 DESC;
```

2.4 Purchases

- 361 unique users made a purchase.
- The top 3 most successful ad campaigns – ranked by number of last touches generated on the purchase page – were:

    1. Weekly newsletter

    2. Retargeting ad

    3. Retargeting campaign

For purchases related queries and results, see appendix 4.1

Rank	Source	Campaign	Attributable last touches on purchase page
1	Email	Weekly newsletter	115
2	Facebook	Retargeting ad	113
3	Email	Retargeting campaign	54
4	Google	Paid search	52
5	Buzzfeed	Ten crazy CoolTShirts facts	9
6	Nytimes	Getting to know CoolTShirts	9
7	Medium	Interview with CoolTShirts founder	7
8	Google	CoolTShirts search	2

3. Optimize the campaign budget

3.1 Campaign budget optimization

- Using *total touches* as a key performance indicator (KPI), CoolTShirts should re-invest in the below five campaigns. These campaigns drive the most traffic to CoolTShirts' website.
- Another KPI to consider is *# of last touches on purchase page attributable to this campaign.* Using this KPI, the list of recommended campaigns to reinvest in would be different.
- For the purpose of this exercise, a judgement was made to prioritize *total touches* and use it as the sole KPI for determining which ad campaigns to reinvest in.

Top ad campaigns (ranked by total touches)						
Rank	Campaign name	Source	First touches	Last touches	Total touches	# of last touches on purchase page attributable to this campaign
1	Getting to know CoolTShirts	NY Times	612	232	844	9
2	Interview with CoolTShirts founder	Medium	622	184	806	7
3	Ten crazy CoolTShirts facts	Buzzfeed	576	190	766	9
4	Weekly newsletter	Email	0	447	447	115
5	Retargeting-ad	Facebook	0	443	443	113

4. Appendices

4.1 Purchases: Queries & results

How many visitors made a purchase?

page_name	COUNT (DISTINCT user_id)
1 - landing_page	1979
2 - shopping_cart	1881
3 - checkout	1431
4 - purchase	361

```sql
SELECT page_name,
       COUNT (DISTINCT user_id)
FROM page_visits
GROUP BY page_name;
```

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

lt_attr.utm_source	lt_attr.utm_campaign	COUNT(*)
email	weekly-newsletter	115
facebook	retargetting-ad	113
email	retargetting-campaign	54
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
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,
           lt_attr.utm_campaign,
           COUNT(*)
    FROM lt_attr
    GROUP BY 1, 2
    ORDER BY 3 DESC;
```