Analyzing Website Traffic Sources using SQL

This project report include analysis of website traffic sources. The analysis was performed on MySQL workbench.

First we analyzed where the bulk of the website sessions were coming from. We breakdown the traffic using UTM sources, UTM campaign and referring domain.

```
1.  SELECT utm_source,
2.         utm_campaign,
3.         http_referer,
4.         COUNT(DISTINCT website_session_id) as sessions
5.  FROM website_sessions
6.  WHERE created_at < '2012-04-12'
7.  GROUP BY
8.          utm_source,
9.          utm_campaign,
10.         http_referer
11. ORDER BY
12.         sessions DESC;
```

utm_source	utm_campaign	http_referer	sessions
gsearch	nonbrand	https://www.gsearch.com	3611
NULL	NULL	NULL	28
NULL	NULL	https://www.gsearch.com	27
gsearch	brand	https://www.gsearch.com	26
NULL	NULL	https://www.bsearch.com	7
bsearch	brand	https://www.bsearch.com	7

The majority of the session are coming from gsearch utm source and nonbrand utm campaign. We look into gsearch nonbrand sources to figure out how many sessions are converting into order. The goal is to have 4% conversion rate.

```
1.  SELECT
2.    COUNT(DISTINCT website_sessions.website_session_id) as sessions,
3.      COUNT(DISTINCT orders.order_id) as orders,
4.      COUNT(DISTINCT orders.order_id)/COUNT(DISTINCT website_sessions.website_session_id) as
    conv_rate
5.  FROM website_sessions
6.    LEFT JOIN orders ON website_sessions.website_session_id = orders.website_session_id
7.  WHERE website_sessions.created_at < '2012-04-14' AND website_sessions.utm_source= 'gsearch'
    AND website_sessions.utm_campaign='nonbrand';
8.
```

sessions	orders	conv_rate
3891	112	0.0288

The conversion rate is less than 4%. We further analyze the gsearch nonbrand sources by looking at weekly session.

```sql
SELECT
  MIN(DATE(created_at)) AS week_start_date,
    COUNT(website_session_id) as sessions
FROM website_sessions
WHERE created_at <'2012-05-10' AND utm_source = 'gsearch' AND utm_campaign ='nonbrand'
GROUP BY WEEK(created_at);

```

week_start_date	sessions
3/19/2012	893
3/25/2012	957
4/1/2012	1147
4/8/2012	988
4/15/2012	622
4/22/2012	592
4/29/2012	681
5/6/2012	401

The weekly session seems to be decreasing. To analyze further, we look into session to order to conversion rate based on device type.

```sql
SELECT
  website_sessions.device_type,
    COUNT(DISTINCT website_sessions.website_session_id) AS sessions,
    COUNT(DISTINCT orders.website_session_id) as orders,
    COUNT(DISTINCT orders.order_id)/ COUNT(DISTINCT website_sessions.website_session_id) as
conv_rate
FROM website_sessions
  LEFT JOIN orders ON website_sessions.website_session_id = orders.website_session_id
WHERE website_sessions.created_at <'2012-05-11'
  AND utm_source = 'gsearch' AND utm_campaign ='nonbrand'
GROUP BY 1;

```

device_type	sessions	orders	conv_rate
desktop	3909	146	0.0373
mobile	2491	24	0.0096

The desktop sessions seems to be higher. We can bid on desktop sessions to make to increase the sales of the product.