Assignment 1: You have received the below mail from your CEO, and you have to respond to that mail.

Hi,

Our portal is live, and it has been quite some time now. Could you please help me in understanding? from where the bulk of our website sessions are coming from?

I want to see specifically breakdown of UTM source, campaign and referring domain.

Cheers!

From CEO,

Date: 12th April 2012

Solution:

```
SELECT
   utm_source,
   utm_campaign,
   http_referer,
   COUNT(DISTINCT website_session_id) AS sessions
FROM
   website_sessions
WHERE
        created_at < '2012-04-12'
GROUP BY utm_source;
```

REPLY:

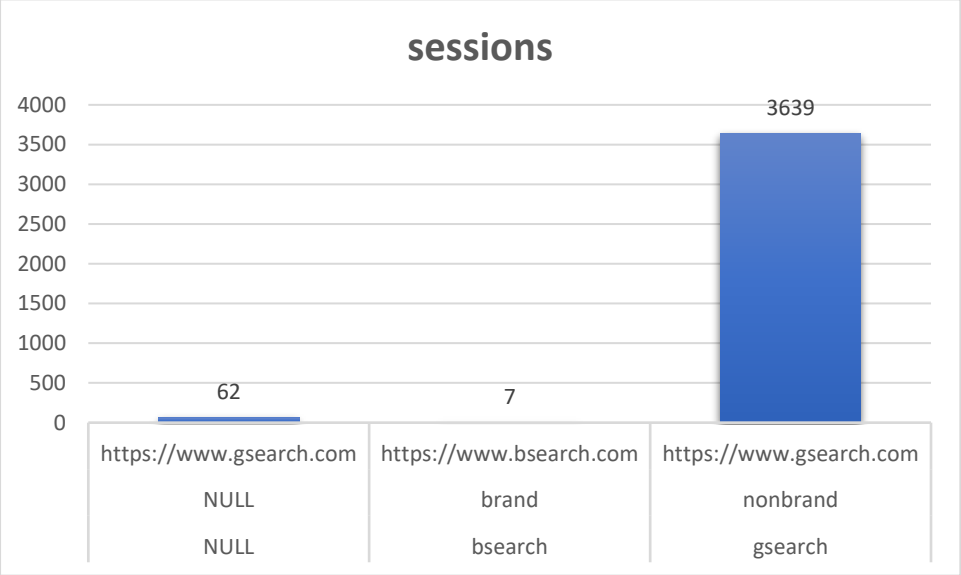
Hi sir,

Good evening as mentioned in the mail I am sending you the details of our website sessions.

On analysing the details g search, non-brand has a greater number of sessions. Below are the details of the sessions.

Thanking you.

utm_source	utm_campaign	http_referer	sessions
NULL	NULL	https://www.gsearch.com	62
bsearch	brand	https://www.bsearch.com	7
gsearch	nonbrand	https://www.gsearch.com	3639



CONCLUSION

Based on the sessions we can say that g search non brand has more traffic with 3639 **sessions.**

Assignment 2:

It looks like gsearch nonbrand is the major traffic source, but we need to understand if we are getting

sales out of it.

Is it possible for you to calculate the conversion rate from session to order?

We will require to manage bids based on CVR

Cheers!

From EA - CEO,

Date: 14th April 2012

Solution:

```
SELECT
   COUNT(DISTINCT website_sessions.website_session_id) AS sessions,
   COUNT(DISTINCT orders.order_id) AS orders,
   YEAR(website_sessions.created_at) as yearly,
   MONTH(website_sessions.created_at) as monthly,
   COUNT(DISTINCT orders.order_id) / COUNT(DISTINCT website_sessions.website_session_id) AS
conversion_rate
FROM
   website_sessions
      LEFT JOIN
   orders ON website_sessions.website_session_id = orders.website_session_id

WHERE
       utm_source = 'gsearch'
          AND utm_campaign = 'nonbrand'
          AND  website_sessions.created_at < '2012-04-14'

GROUP BY  yearly,monthly
ORDER BY yearly,monthly;
```

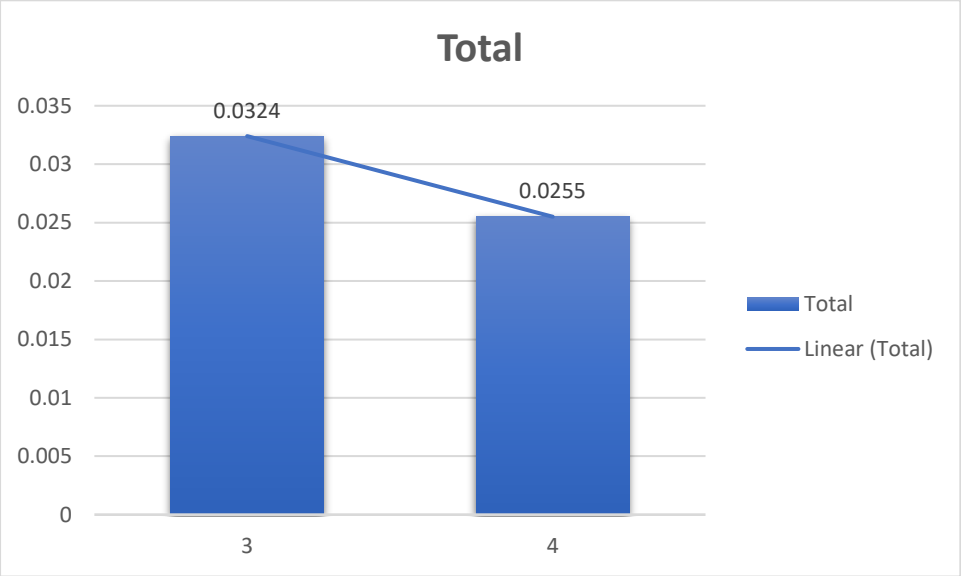
REPLY:

Hi sir,

Good evening as mentioned in the previous mail I have calculated the conversion rate of the sessions please find the details of the conversion rate of the g search nonbrand given below.

Thanking you.

sessions	orders	yearly	monthly	conversion_rate
1852	60	2012	3	0.0324
2043	52	2012	4	0.0255



<u>CONCLUSION</u>

Based on the conversion rate calculated we can say that the conversion rate for g search non brand is decreasing .

Assignment 3:

Hey,

Based on our last conversation where we analysed conversion rate, we bid down gsearch non brand

on 15th April 2012 because we were over bidding for g search non brand.

Now, can you find gsearch non brand trended session, volume by week to see if the bid changes have

caused the volume to drop at all?

From Marketing Director,

Date: 10th May 2012

Solution:

Sessions before 15 april 2012

```
SELECT
   MIN(DATE(created_at)) AS week_start_date,
   COUNT(DISTINCT website_session_id) AS sessions,
   created_at
FROM
   website_sessions
WHERE created_at < '2012-04-15'
         AND utm_source = 'gsearch'
   AND utm_campaign = 'nonbrand'
GROUP BY YEARWEEK(created_at);
```

Session after 15 april 2012

```
SELECT
   MIN(DATE(created_at)) AS week_start_date,
   COUNT(DISTINCT website_session_id) AS sessions,
```

```
   created_at
FROM
   website_sessions
WHERE
   created_at BETWEEN  '2012-04-15' AND '2012-05-10'
      AND utm_source = 'gsearch'
      AND utm_campaign = 'nonbrand'
GROUP BY YEARWEEK(created_at);
```

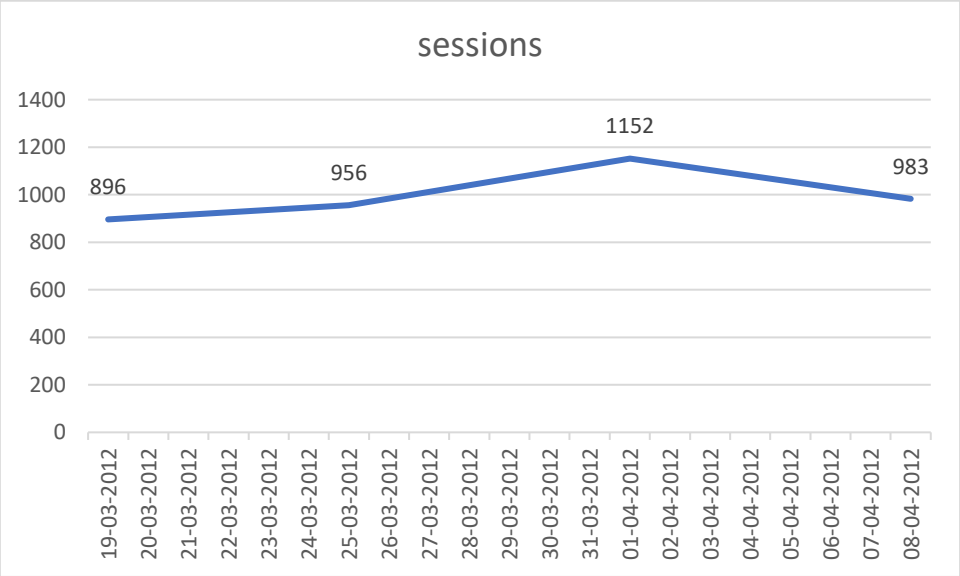
Reply:

Hi Sir,

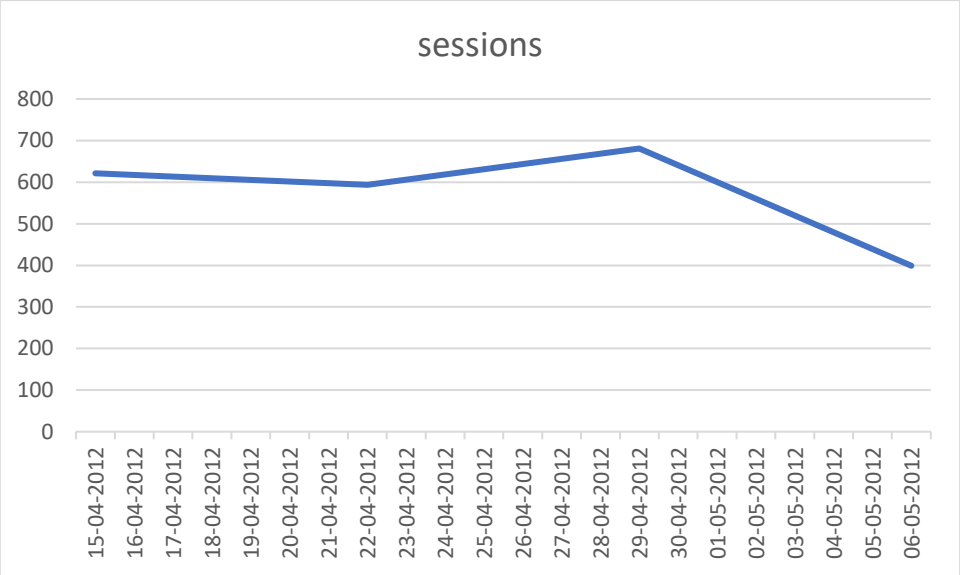
Good evening, I have found the g search non brand traffic weekly, I have attached the details of it please find it below.

Thanking you.

Sessions before 15 April 2012



Session after 15 April 2012



CONCLUSION

Based on the details of the session we can say that the sessions volume for g search non brand is linearly decreasing.

Assignment 4

Hi There,

I was just going through the mobile and realized that the UI is not that great, I did not have the satisfactory experience.

Can you figure out the conversion rates from session to order by device type?

In case the performance is better for desktop then we will bid more for desktop to bring more volume.

From Marketing Director

Date: 11th May 2012

Solution:

```
SELECT
   COUNT(DISTINCT website_sessions.website_session_id) AS sessions,
   COUNT(DISTINCT orders.order_id) AS orders,
        YEAR(website_sessions.created_at) as yearly,
        MONTH(website_sessions.created_at) as monthly,
   COUNT(DISTINCT orders.order_id) / COUNT(DISTINCT website_sessions.website_session_id) AS total_conversion_rate,
   COUNT(DISTINCT CASE WHEN website_sessions.device_type='mobile' THEN website_sessions.website_session_id ELSE NULL END ) AS mobile_sessions,
        COUNT(DISTINCT CASE WHEN website_sessions.device_type='mobile' THEN orders.order_id ELSE NULL END ) AS mobile_orders,
   COUNT(DISTINCT CASE WHEN website_sessions.device_type='mobile' THEN orders.order_id ELSE NULL END )/COUNT(DISTINCT CASE WHEN website_sessions.device_type='mobile' THEN website_sessions.website_session_id ELSE NULL END ) AS CVR_Mobile,
        COUNT(DISTINCT CASE WHEN website_sessions.device_type='desktop' THEN website_sessions.website_session_id ELSE NULL END ) AS desktop_sessions,
        COUNT(DISTINCT CASE WHEN website_sessions.device_type='desktop' THEN orders.order_id ELSE NULL END ) AS desktop_orders,
   COUNT(DISTINCT CASE WHEN website_sessions.device_type='desktop' THEN orders.order_id ELSE NULL END )/COUNT(DISTINCT CASE WHEN website_sessions.device_type='desktop' THEN website_sessions.website_session_id ELSE NULL END ) AS CVR_Deasktop
FROM
   website_sessions
```

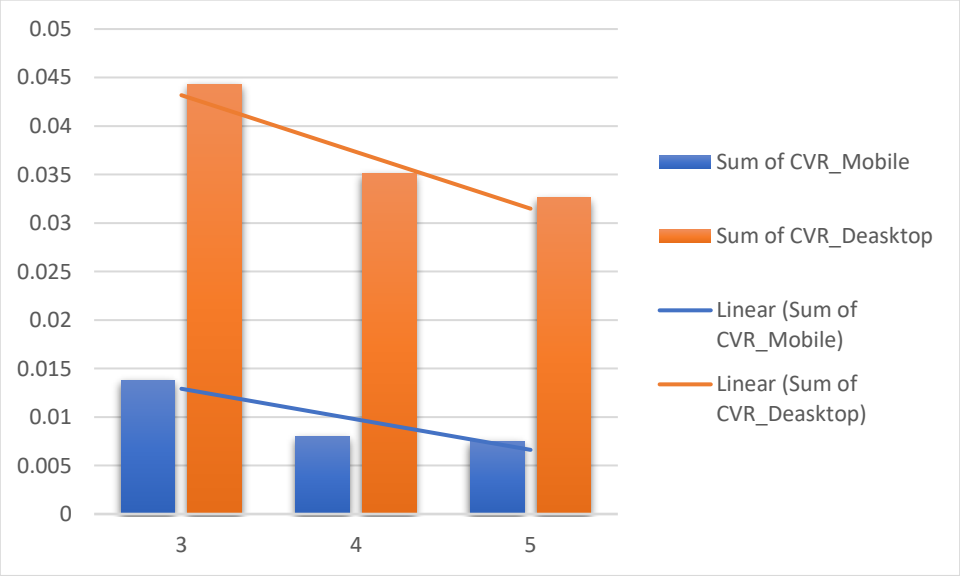
```
    LEFT JOIN
  orders ON website_sessions.website_session_id = orders.website_session_id

WHERE
      utm_source = 'gsearch'
         AND  utm_campaign = 'nonbrand'
  AND   website_sessions.created_at < '2012-05-11'

GROUP BY  yearly,monthly
ORDER BY yearly,monthly;
```

Reply:

Hi Sir,

Good evening, I have calculated the conversion rate based on the device type, I have attached the details of it please find it below.

Thanking you.



<u>CONCLUSION</u>

Based on the conversion rate calculated we can say that the conversion rate for g search non brand of both desktop and mobile is linearly decreasing and the conversion rate of desktop is higher than the mobile.

Assignment 5:

Hi There,

Based on device level analysis of conversion rates, desktop was doing well, so we raised the bid for gsearch nonbrand desktop on 19th

May 2012.

Can you figure out weekly trends by device type to see the impact on volume?

Baseline: 15th April 2012.

From Marketing Director

Date: 9th June 2012

Solution:

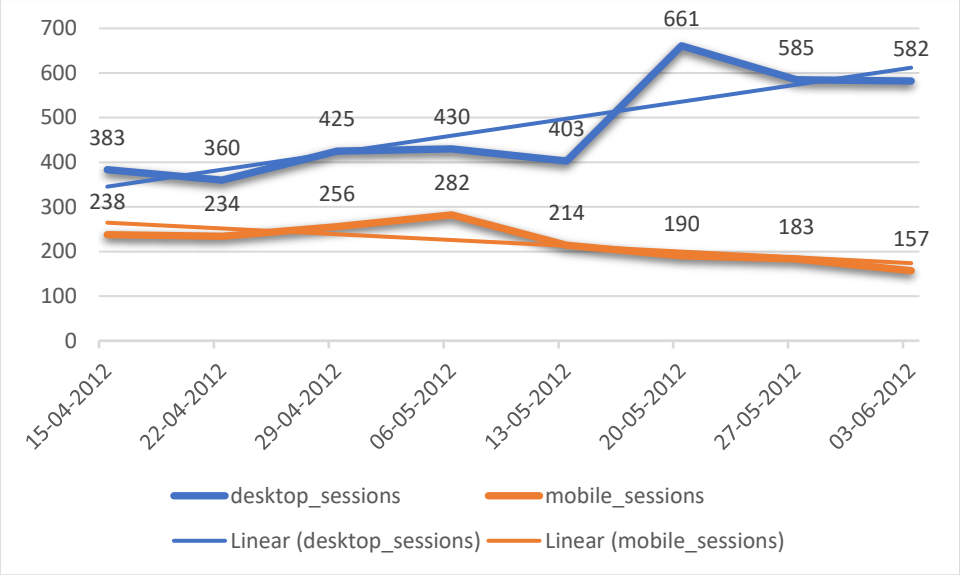
```
SELECT
   MIN(DATE(created_at)) AS week_start_date,
   COUNT(DISTINCT CASE WHEN device_type = 'desktop' THEN website_session_id ELSE NULL END)
AS 'desktop_sessions',
   COUNT(DISTINCT CASE WHEN device_type = 'mobile' THEN website_session_id ELSE NULL END)
AS 'mobile_sessions'
FROM
   website_sessions
WHERE
   website_sessions.created_at BETWEEN '2012-04-15' AND '2012-06-09'
      AND utm_source = 'gsearch'
      AND utm_campaign = 'nonbrand'
GROUP BY YEARWEEK(created_at);
```

Reply:

Hi Sir,

Good evening, I have calculated weekly trends by device type, I have attached the details of it please find it below.

Thanking you.



CONCLUSION

Based on the details of the session we can say that the sessions for g search non brand is linearly increasing on both the device types.