**Data Analyst - Assignment**

DeltaX is the most comprehensive Cross-Channel Ad Platform for new-age media buying.

**Job Description**

<http://bit.ly/dx-dataana-2021>

**Resources**

The required data dumps for the assignment can be found here

| **Filename** | **Comments** | **Link** |
| --- | --- | --- |
| data.csv | Raw metrics from 01-Aug-2020 to 28th Feb-2021. | <https://s3.amazonaws.com/backup.deltax.com/dump/data.csv> |

**About the Data**

The sample data dump shared above is the ad performance for the dates between 1st August 2020 and 28th Feb 2021.



Notes:

* One Campaign can have one or more Ad Groups. One Ad group can have one or more ads. In the given dataset - we have only 1 campaign; 4 Ad Groups and multiple ads.
* Assume Adgroup 1, 2, 3 & 4 are targeting different audiences
* Think of Ad1 & Ad2 as two concepts being tried across 4 Adgroups (audiences)
* **Important Note: When you are performing EDA (exploratory data analysis) / building dashboards please primarily focus on the Efficiency Metrics and use the Raw Metrics as indicative.**

Here is a brief description of all performance columns in the data set:

Raw metrics:

Impressions - Number of times the ad was shown

Clicks - Number of times the ad clicked shown

Cost - Amount spent to show ad

Conversions - Number of transactions received (higher the better)

Revenue - Total value of transactions received (higher the better)

Efficiency metrics:

Needs to be calculated and are based on raw metrics

CTR - Clicks / Impression (higher the better - used to evaluate if the users find the ad relevant)

CPC - Cost / Click (lower the better - used to evaluate if the cost for getting a click)

CPA - Cost / Conversion (lower the better - used to evaluate if the cost for getting a conversion)

ROI - Revenue/Cost (higher the better - used to evaluate the effectiveness of the advertising budget spent)

Important Note: When you are comparing the efficiency metrics and trying to come up with insights there are a couple of things you might want to keep in mind  
1. Typically most advertising spends follow the law of diminishing returns. It’s expected that the more you spend, the efficiency metrics will dip. In case it doesn’t, it means it’s not yet reached a point of saturation. If it dips a lot, means you are overspending.

2. You ideally want to compare similar spending ad/adgroups.

**Problem Statement**

An advertiser would like to analyze the performance of his campaign.

For the given data, please perform exploratory data analysis and try to address the below questions:

1. Interesting findings with respect to any trends across different audiences (Adgroups) or creatives concepts (Ads).
2. Identify any correlation in performance of the ads with respect to - day of the week, day, month
3. Identify any remarkable performance (good / bad) across Campaigns / Adgroups / Ads
4. Identify audiences & creative concepts which have the best potential for giving good ROI at meaningful spends

**Submission**

Summarize your findings as a Google Slide presentation.

As part of this presentation include:

1. Dashboard Screenshot  
   Use excel / any other tool to build a dashboard for showcasing the campaign performance and trends of the overall campaign
2. Other findings from your exploratory analysis should be added as subsequent slides
   1. Try to summarise your findings visually
   2. Please use appropriate charts/graphs.
3. Workings: Share your supportings in Excel / Jupyter notebooks

**How to Submit Assignment**

Keep the subject line of your email as “YOUR NAME - Assignment” eg: “Ram N - Assignment”. (Don’t add double quotes)

**Note**:

Being able to summarise your findings visually is important for us.

* Please use appropriate charts/graphs.
* Please write your thought process as speaker notes/comments

We are expecting the following attachments in your submissions:

1. Resume
2. Google Slides Presentation (ensure its share settings are - ‘Anyone with the link’)
3. Google Sheets / Excel file / Juypter notebook with any additional workings

Email your submissions to [hireme.engg+data@deltax.com](mailto:hireme.engg+data@deltax.com).