

## Click-log Analysis & Visualization

Please finish the below coding assignment preferably in Python. The ideal time to complete should be within 3-4 days of starting the exercise.  
Please use any one of R, Matplotlib, sns or Pandas modules for visualization exercise.

The objective of this exercise is to programmatically analyze the click logs as mentioned below & plot the visuals.

You can provide us your script via email or host it on Github.

### **Part 1:**

Consider you have a file containing millions of rows, where each row represents a click log.

Use this sample file for your reference:

<https://drive.google.com/open?id=0Bw55Xs1JG3x0cWNZeXlvWkRLa00>

First, read the above csv into a DataFrame.

1.a) For every affiliate\_id(Col B), calculate the unique ios\_ifa(Col K) & google\_aid(Col L) present in the data.

1.b) Calculate how many valid google\_aid & ios\_ifa exist in the dataset.

google\_aid = Google play advertising identifier, also usually termed as AAID

More info on google\_aid can be read here:

<https://developers.google.com/android/reference/com/google/android/gms/ads/identifier/AdvertisingIdClient>

<https://support.google.com/googleplay/android-developer/answer/6048248?hl=en>

A google\_aid value always exists in this format: nnnnnnnnn-nnnn-nnnn-nnnn-nnnnnnnnnnn

Where all characters are alphanumeric, and in *lower case*, overall length is 36 characters.

ios\_ifa = Apple advertising identifier.

More info on ios\_ifa can be read here:

[https://developer.apple.com/library/ios/documentation/AdSupport/Reference/ASIdentifierManager\\_Ref/](https://developer.apple.com/library/ios/documentation/AdSupport/Reference/ASIdentifierManager_Ref/)

Similar to google\_aid, an ios\_ifa identifier also exists in the same format: NNNNNNNN-NNNN-NNNN-NNNNNNNNNNNN

Where all the characters are alphanumeric, and in *upper case*, overall length is 36 characters.

Your code should be able to properly validate both google\_aid & ios\_ifa device ID's & ignore invalid values.

**PS:** You should use UUID validation regex here & apply them for validating both these identifiers.

## Part 2:

2.1) Plot a histogram from the data obtained from exercise 1.a)

2.2) Plot a histogram of the no. of clicks v/s affiliate\_id in the dataset.

