 Due by 3:00pm, 25^{th} September 2020

CMPSC 301
Data Analytics
Fall 2020

Lab 2: Google Analytics
and Response to Marketing Analytics
11^{th} September 2020

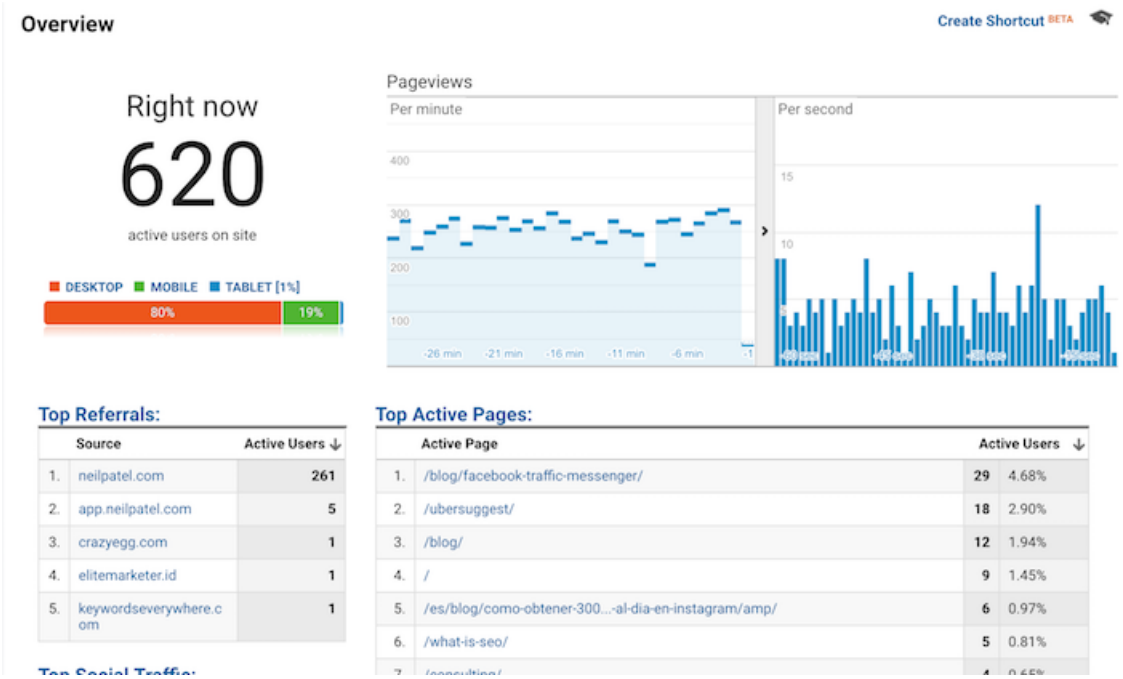

Figure 1: Google Analytics allows admins to study the traffic and activities on webpages. Information includes the number of viewers online, and the number of documents that they are viewing currently, as shown.

Objectives

Google Analytics, shown in Figure 1, is one of the most popular enterprise web analytics platforms providing rich insights into website traffic and marketing effectiveness. In the first part of the lab you are invited to investigate the available tools on Google Analytics and to summarize your understanding of the function of these tools. You are then asked to further develop your website by adding two reflection pieces which center on ethical premises. You are also asked to attach your own analytics functionality to your website because you and your colleagues will be visiting the websites of others in the class later on to respond to the ethical reflection pieces. During this website research, your Google Analytics will be tracking traffic for you to use for the last part of the lab.

Handed out: 11^{th} Sept 2020

Reading Assignment

Please review class slides and your class notes. You can also find useful information in the Google Analytics Community by performing online research. Please take some time to gain experience with using Markdown to write your work. See *Mastering Markdown* `https://guides.github.com/features/mastering-markdown/` for more details about Markdown.

GitHub Starter Link

https://classroom.github.com/a/2fwo2UqL

To use this link, please follow the steps below.

- Click on the link and accept the assignment.
- Once the importing task has completed, click on the created assignment link which will take you to your newly created GitHub repository for this lab.
- Clone this repository (bearing your name) and work on the lab locally.
- As you are working on your lab, you are to commit and push regularly. You can use the following commands to add a single file, you must be in the directory where the file is located (or add the path to the file in the command):
  - `git commit <nameOfFile> -m ‘‘Your notes about commit here’’`
  - `git push`

  Alternatively, you can use the following commands to add multiple files from your repository:
  - `git add -A`
  - `git commit -m ‘‘Your notes about commit here’’`
  - `git push`

Google Analytics

Asking visitors to a website to complete a survey to gain insights of their experience on a website has become an unusually onerous request, and internauts typically avoid such surveys with an air of annoyance. Developers of websites are still eager to know the users' impressions of their website and so analytical tools have arisen to allow the actions of users to be studied without their interruption on the website.

The Google Analytics (GA) framework provides convenient metrics to be used to study data concerning the Web traffic on a web site. For a user-defined time-frame, trends of visits and site usage may be tracked, studied and plotted to gain some understanding of how the website is behaving for its visitors. The study of plots such as, histograms, charts, tables and similar graphics, allows one to conveniently track website activities and to make decisions without having to delve into massive amounts of raw numbers from click-based data.

Part 1: Visualization Techniques

In this lab, you are asked to, first, explore some of the visualizing techniques that GA provides. Please answer the following questions-in-blueusing **clear and meaningful** language. Your responses should be well thought-out and be about four or five sentences in length.

1. **Business**: For e-commerce web site such as `https://www.amazon.com`, which **one** (1) metric (plot, statistic or other) would the most important in determining the amount of business performed daily by the site? Why?
2. **Social media**: For a web site such as www.facebook.com, which **one** (1) metric (plot, statistic or other) is the most important to be able to determine how much time is spent on the site. Why?
3. **Weather**: For a weather web site such as www.accuweather.com, which **one** (1) metric (plot, statistic or other) is the most important to be able to determine how much time is spent on the site. Why?
4. What metric would you suggest is often included in a report but may be interpreted differently depending on the goals of the web site? Argue why this metric has such different meanings for particular sites?
5. **Hypothetical Question**: Imagine that you are an admin of a banking website that allows people to check their balance and to complete other major banking tasks at your bank. You have noticed that no-one has actually checked their savings balance in spite of the fact that over one hundred people have logged into the site during the last few days. You suspect that something is wrong with the website.

   Using at least three different metrics available to you from Google Analytics (monitoring your banking website), describe plots and or statistical evidence that you could show to the website developers to help them locate where problem(s) in the website are likely to be found.

Part 2: Website Reflection Piece

In class, you were to build a website to be connected to GA in order to learn more about the functionality of this analysis suite. In order to complete this part of the lab, your website must be configured correctly with your GA Tracking ID. If you want, you can create a separate website for the purpose of this lab. Please consider being creative when designing your website; you could always repurpose your site later for beginning your professional /career life.

A *reflection piece* is an essay that takes up about half a page of text in which you provide an informed argument, or a response which is for-or-against some premise. On your website, you are to add a link to two different pages for each of the ethical reflection questions-in-blue, listed below.

Ethical Reflection Pieces

The responses to the following questions will be added to your website pages. Please have one question per page. In addition, to help the instructor with grading, please add these same responses to your reflection markdown file that you submit at the end of the lab.

Do you own your "Personal Data"?

Data privacy, or the notion that one is able to control how one's data is collected and used, has become hot topic in our information age. This topic concerns the rights of the individual in light of how one's data is collected and then reapplied toward some purpose which is likely to be unknown to the individual. The inherent issue concerns the *ownership* of the data which is collected by the website from its visitors. For instance, visitors come to a website and interact with code and media on a website. The website tracks each users actions and records data. We note that the visitors may behave similarly on the site even if their actions were not being tracked. Argue for or against who do you suppose actually *owns* the data taken from the visitors.

Victims of Breach?

Imagine using a website for a long time and having little idea what types of information was actually being collected about you and your actions on the site. You have used this site to buy merchandize using your credit card several times. One day, you read an article in popular journalism that discusses a breach of the website's data (i.e., data was stolen from its servers by unknown malicious individuals). You quickly check your email to determine whether the website administration has tried to contact you to warn you or provide instructions on what to do about any incurred damages. You find no communications to you on this topic from the website. Discuss issues of responsibility and liability for the breach. Ultimately, who is responsible for any potential damages caused by the breach?

Part 3: Next Week's Lab; Slack-Out and Response

By this time, your website **must** be completed with two additional pages of the reflection questions-in-blue from above. The design of the site is left to you to create. On the day of lab, you are to place the link to your website in the course' Slack channel to allow your colleagues to visit your site and read your work. **In return, you are to visit three (3) websites from the Slack channel to read the reflection pieces of your colleagues.** You are to comment on one or both of the reflection pieces on each website. Your deliverable for this task is below in blue.

Please do not forget to add your own web link to the course slack channel to announce your site to your colleagues. Please use the General channel.

1. Give the name and link of the three (3) websites where you read one or both of the reflection pieces. Briefly state the premise of the reflection piece by the author and respond to how you agree or disagree with the author's premise. **Please be respectful of the work of your colleagues in your critical assessment.**

2. Check the website analysis of your own page. Write a brief piece (one or two paragraphs) about the traffic to your website and the metrics to measure activity. For instance, which plots were most useful to you in determining your website's traffic? Was there any particular metrics in the analysis suite that you found especially helpful concerning the your traffic analysis?

Summary of Deliverables

Below are the required deliverables for your work.

1. Submit all written work using Markdown. You will be editing supplied files in your GitHub Classroom repository.
2. File `writing/reflection.md`: Your reflection document containing your responses to the questions-in-blue from Part 1 (general questions) and Part 2 (ethical reflection pieces), described above.
3. File `writing/responses.md`: Your website responses to the reflection pieces from Part 3 will go in the responses.md file. In this file, you are also to add your own website address and comment on Google Analytics.