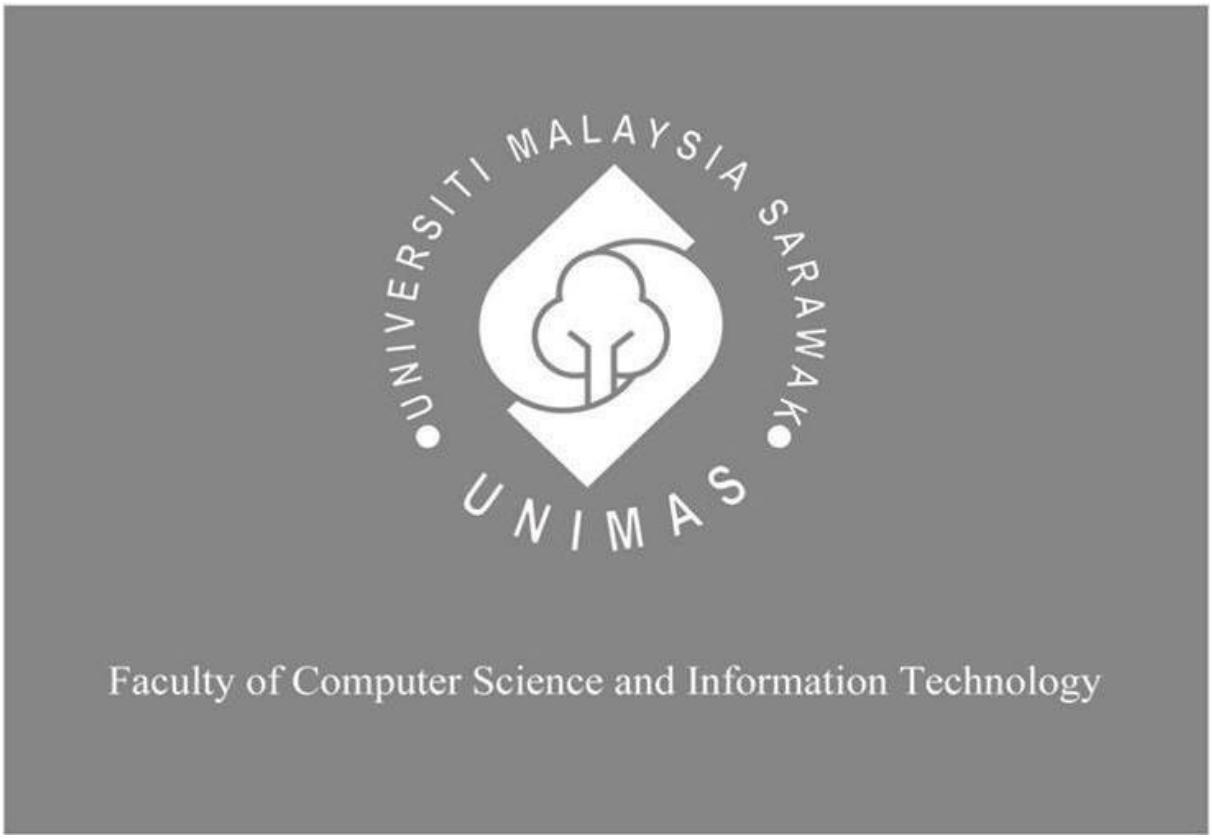

Utilizing Google Analytics Data in Assessing Various Strategies for Increasing Website Traffic

Nur Fathin Harnani Binti Mohd Zainal 57221

Bachelor of Computer Science with Honours
(Computational Science)

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Lecturer
Faculty of Computer Science and Information Technology
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DECLARATION

This is to certify that to the best of my knowledge and the content of this project is my own work. This project has not been submitted for any degree or other purposes. I certify that the intellectual content of this project is the product of my own work and that all the assistance received in preparing this project and sources have been acknowledged.

Nur Fathin Harnani Binti Mohd Zainal

57221

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ABSTRACT

Google Analytics is one of the most preferred digital analytics tools used to analyze in-depth details about the visitors on the company website (Thakur, 2017). It provides valuable insights that can help the company to better understand their visitors' behavior. Google Analytics can also help in assessing various strategies such as SEO (search engine optimization) for increasing website traffic.

ABSTRAK

Google Analytics adalah salah satu alat analitik digital yang paling digemari yang digunakan untuk menganalisis butiran mendalam tentang pelawat di laman web syarikat (Thakur, 2017). Ia memberikan pandangan berharga yang boleh membantu syarikat untuk lebih memahami tingkah laku pengunjung mereka. Google Analytics juga dapat membantu dalam menilai pelbagai strategi seperti SEO (Search Engine Optimization) untuk meningkatkan trafik laman web.

CHAPTER 1: INTRODUCTION

1. 1 BACKGROUND

Living in an advanced world, having an online presence is essential for any business. Business website is one of the ways to create business online identity. A website can help to generate business, promote goodwill among customers, and is an effective platform to showcase the products or services a company have to offer.

Google Analytics is one of the most preferred digital analytics tools used to analyze in-depth details about the visitors on the company website (Thakur, 2017). It provides valuable insights that can help the company to better understand their visitors' behavior. Google Analytics can also help in assessing various strategies such as SEO (search engine optimization) for increasing website traffic. For instance, by knowing the website visitors' demographic and interest, the company can create targeted content and get better visibility on search engines which will increase website traffic.

With so many other website analytics tools, Google Analytics remains a highly relevant free solution to manage the website's analytics (Thakur, 2017). It is easy to set up, customizable, and provides all the basic information about the website (DiSilvestro, 2018).

1.2 PROBLEM STATEMENT

Having a website can help to promote the business to a wider audience. However, without a proper strategy and understanding on the visitors' behavior on the website, it is pointless and not giving any benefit to the business owner. The business owner needs to understand what kind of content they need to deliver to his website visitors and make the right decision to increase website traffic and consequently increase profits.

1.3 OBJECTIVES

The main objectives of this project are:

1. To analyze website visitors' demographics, interests, and browsing behavior.
2. To implement various strategies to increase website traffic.
3. To visualize the Google Analytics data in analyzing the implemented strategies to increase website traffic.

1.4 METHODOLOGY

The following are the methodology that will be applied in this project:

1.4.1 Data Collection

Data will be collected from Google Analytics data. Some useful data that is needed for this project are website visitors' demographics, interest, and browsing behaviors.

1.4.2 Data Analysis

This project will focus on analyzing the data from 4 reports that are available in Google Analytics, namely Audience, Acquisition, Behavior, and Conversions.

- **Audience**

  The Audience report helps to better understand the characteristics of the visitors as it provides reports on specific details of the visitors' demographic such as their age and gender (Akash, 2018).

- **Acquisition**

  The Acquisition report shows where the visitors originated from, such as search engines, social networks, or referrals (Hines,

2014). It determines which online marketing strategies will bring the most visitors to the website.

- **Behavior**

  The Behavior report describes the behavior of website visitors. By using this report, the performance of the website content can be assessed and determine whether the visitors are taking the actions as the website owner want them to (Shivar, 2019).

- **Conversions**

  The Conversions report contains four sections which are goals, eCommerce, multi-channel funnel, and attribution. This report shows the rate of conversion of visitors to customers.

1.4.3 Data Visualization

The collected data will be visualized to make it more delightful by presenting those insights in various meaningful charts. It will also make it easier for the researcher to understand and detect the pattern of the website visitors' behavior.

1.4.4 Statistical Analysis Software

SPSS

1.5 SCOPE

The scope of this project is web analytics. Data trends obtained from the website analysis can provide valuable insights for the business. As such, this project focuses on the analysis of the website traffic of the case company.

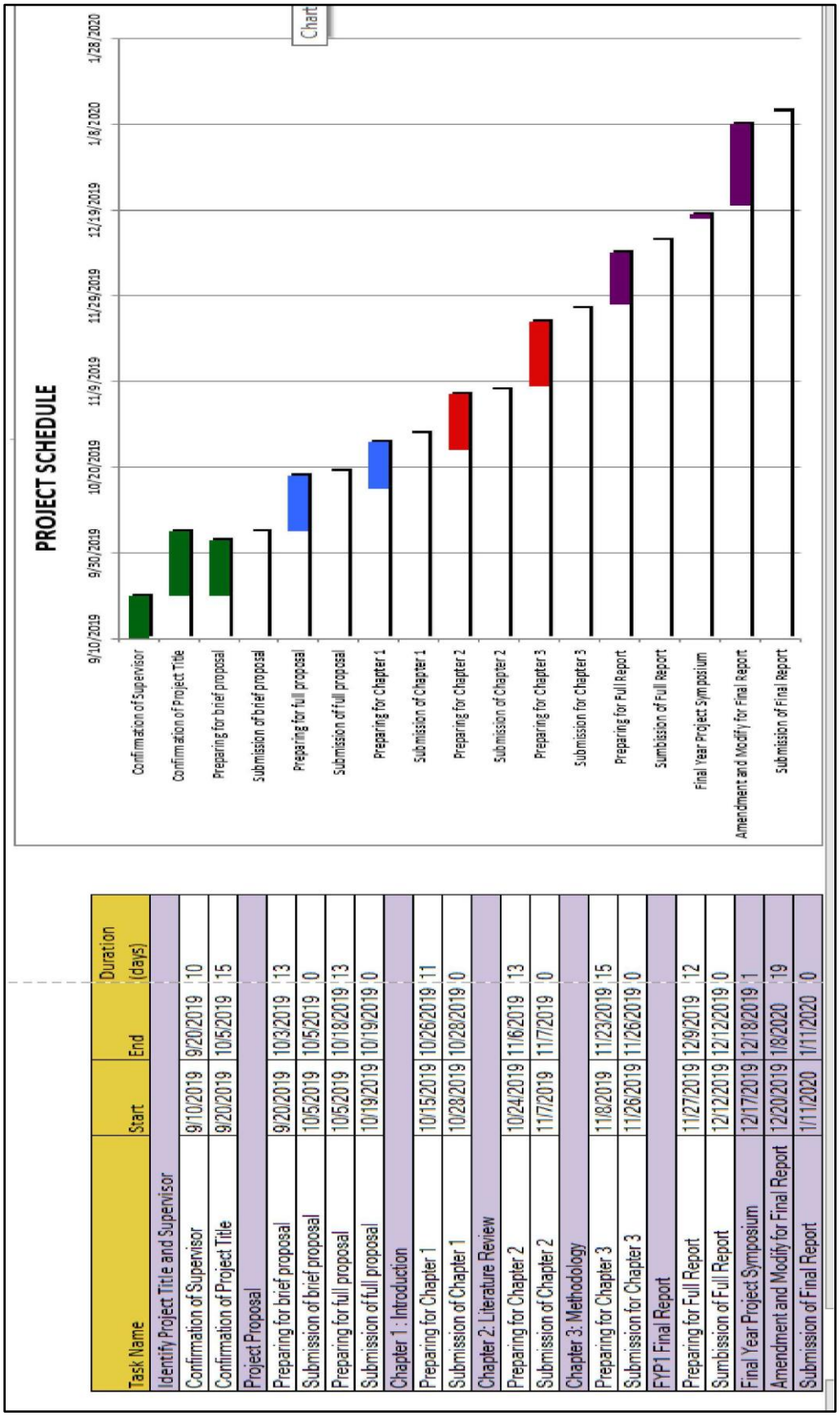
1.6 SIGNIFICANCE OF PROJECT

The research results could benefit the business owner in increasing website traffic. The researcher can study the patterns of website visitors' behavior to provide insights to understand the data obtained from Google Analytics.

1.7 EXPECTED OUTCOME

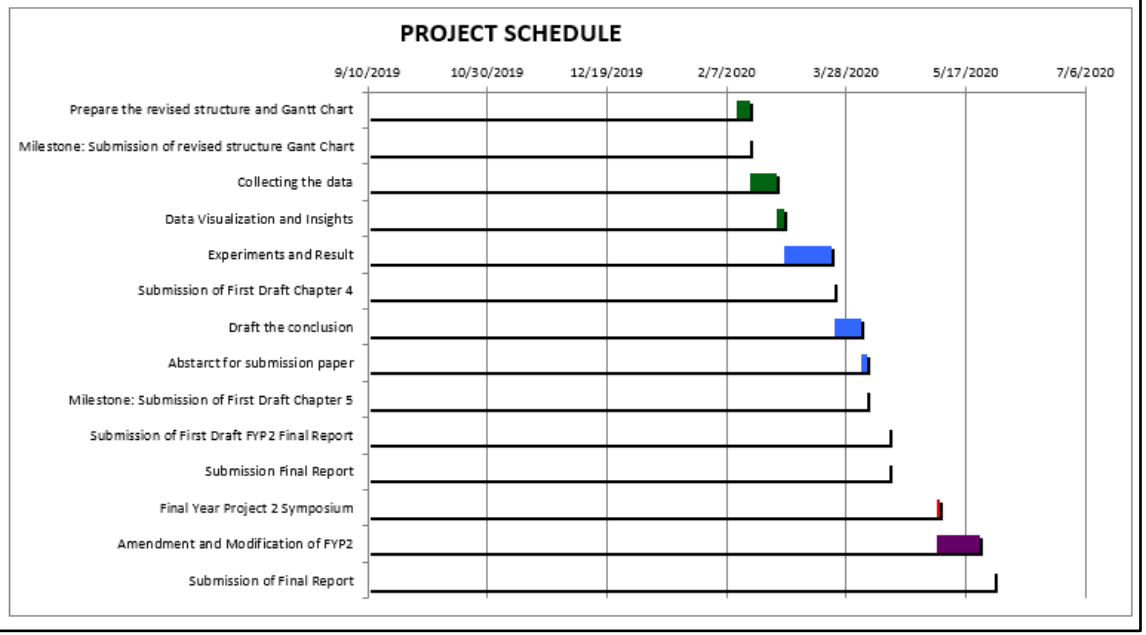
To analyze Google Analytics data on a selected website (as a case study) and determine a better strategy to increase website traffic.

1.8 PROJECT SCHEDULE



Task Name	Start	End	Duration (days)
Identify Project Title and Supervisor			
Confirmation of Supervisor	9/10/2019	9/20/2019	10
Confirmation of Project Title	9/20/2019	10/5/2019	15
Project Proposal			
Preparing for brief proposal	9/20/2019	10/3/2019	13
Submission of brief proposal	10/5/2019	10/5/2019	0
Preparing for full proposal	10/5/2019	10/18/2019	13
Submission of full proposal	10/19/2019	10/19/2019	0
Chapter 1 : Introduction			
Preparing for Chapter 1	10/15/2019	10/26/2019	11
Submission of Chapter 1	10/28/2019	10/28/2019	0
Chapter 2: Literature Review			
Preparing for Chapter 2	10/24/2019	11/6/2019	13
Submission of Chapter 2	11/7/2019	11/7/2019	0
Chapter 3: Methodology			
Preparing for Chapter 3	11/8/2019	11/23/2019	15
Submission for Chapter 3	11/26/2019	11/26/2019	0
FYP1 Final Report			
Preparing for Full Report	11/27/2019	12/9/2019	12
Sumbission of Full Report	12/12/2019	12/12/2019	0
Final Year Project Symposium	12/17/2019	12/18/2019	1
Amendment and Modify for Final Report	12/20/2019	1/8/2020	19
Submission of Final Report	1/11/2020	1/11/2020	0

Task Name	Start	End	Duration (days)
Final Year Project 2			
Prepare the revised structure and Gantt Chart	2/11/2020	2/17/2020	6
Milestone: Submission of revised structure Gant Chart	2/17/2020	2/17/2020	0
Chapter 4: Implemenation and Testing			
Collecting the data	2/17/2020	2/28/2020	11
Data Visualization and Insights	2/28/2020	3/2/2020	3
Experiments and Result	3/2/2020	3/22/2020	20
Submission of First Draft Chapter 4	3/23/2020	3/23/2020	0
Chapter 5: Conclusion and Future Work			
Draft the conclusion	3/23/2020	4/3/2020	11
Abstarct for submission paper	4/3/2020	4/6/2020	3
Milestone: Submission of First Draft Chapter 5	4/6/2020	4/6/2020	0
Submission of First Draft FYP2 Final Report	4/15/2020	4/15/2020	0
Submission Final Report	4/15/2020	4/15/2020	0
Final Year Project 2 Symposium	5/5/2020	5/6/2020	1
Amendment and Modification of FYP2	5/5/2020	5/23/2020	18
Submission of Final Report	5/29/2020	5/29/2020	0



CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

Omidvar, Mirabi, and Shokry (2011) in their study suggest that to gain more profit, web developing should be carried out competently and professionally as the number of internet users, websites, and retail sales are increasing. Website analytics is essential for business growth as it provides in-depth details of the website visitors that can be used to optimize the website contents based on the visitors' interest.

One of the most popular website analytics tools is Google Analytics as it is being used by over 20 million websites around the world. Google Analytics is a free analytics tool offered by Google to help a business owner to track their digital marketing effectiveness (Su, 2017). Google Analytics works by adding a block of JavaScript code on the website's pages ("Tracking Code Overview, n.d."). As the visitors access the website's page, the JavaScript code records various activities of the visitors which then executes the tracking operation for Analytics.

Google Analytics reports consist of two types of data, which are dimensions and metrics (Clifton, 2012). The data are usually present in the form of a table as shown in Figure 2.1. The row represents dimension, while the column represents metrics.

Dimensions describe the attributes of the website visitors. For example, gender, age, city, browser, device category, and operating system. While metrics are the numbers associated with the dimensions such as the number of visitors, number of pageview per visit, bounce rate and goal value (Clifton, 2012). Sharma states that Google Analytics metrics are reported under three categories, namely Acquisition, Behavior, Conversions. The Acquisition report shows where the visitors originate from, whether search engines, social networks or referrals (Hines, 2014). Hines also mentioned that the Acquisition report determines which online marketing strategies will bring the most visitors to the website. Next, the Behavior report. This report

describes the behavior of website visitors. By using this report, the performance of the website content can be assessed and is used to determine whether the visitors are taking the actions as the website owner want them to (Shivar, 2019). Lastly, the Conversion report. This report shows the rate of conversion of visitors to customers (Mazaheri, 2018). Mazaheri states that the conversions can occur through filling out a form, purchasing item, or just simply by showing a high level of engagement with the site.

In this literature review, we will discuss some of the key features of Google Analytics, the architecture of the Google Analytics, and Facebook pixel. These studies are important to better understand the scope of Google Analytics tools for a business website and to compare the difference between Google Analytics and Facebook pixel.

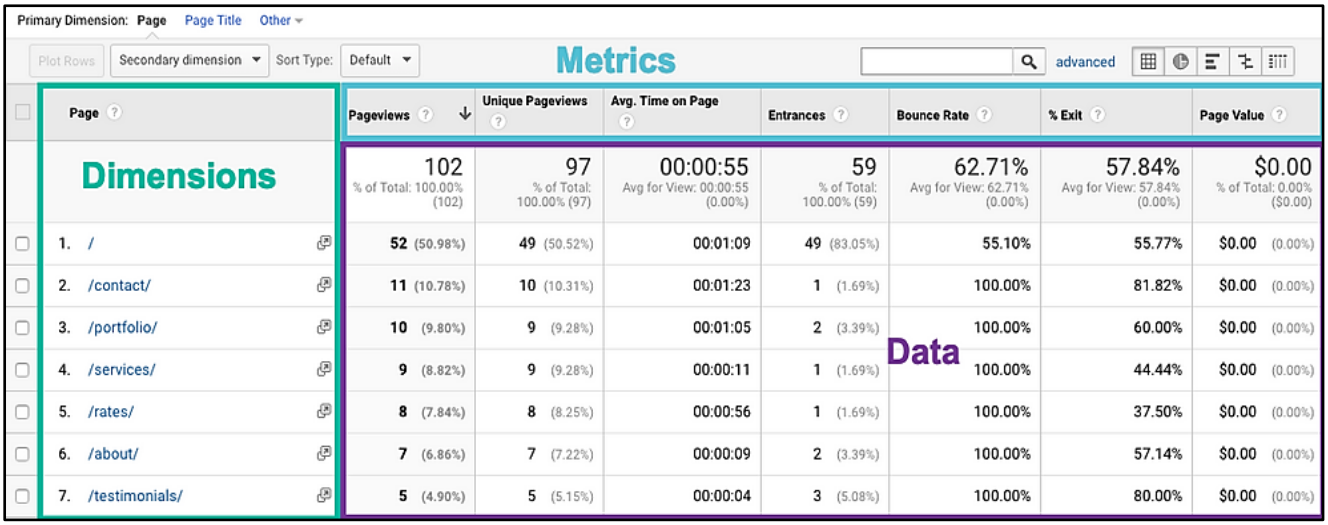


Figure 2.1 Dimensions and metrics. Reprinted from *The 10 Most-Tracked Google Analytics Metrics*, by J. Bonini, 2019.

2.2 KEY FEATURES OF GOOGLE ANALYTICS

To get additional visitors, eCommerce site owner must bid improved excellence site. Google Analytics is a specific illustrative instruments from Google which serves to trace visitors and collect an extensive variety of profitable data concerning them (Gaur, Singh, Paul, & Kumar, 2016). Some of the key features of Google Analytics that has been discussed in this project is describe as follows:

1. **Goal Conversion Rate**

   The conversion rate is the percentage of visitors who take a desired action on the website for example purchasing a product. Figure 2.2 shows the conversion rate of a website which is 2.57%.

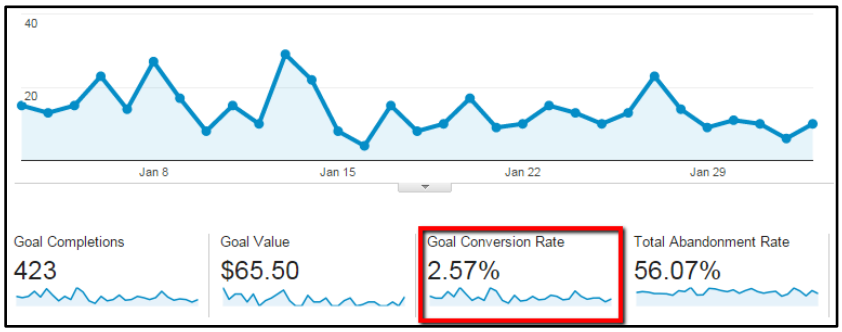


Figure 2.2 Goal Conversion Rate.

2. **Bounce Rate**

   Bounce rate describes the percentage of visitors to a website who then navigate away from the site after viewing only one page. If the bounce rate is high, it means the visitors assume that they are not interested with the webpage. As such, the owner can make decision whether the page need for an improvement or they might as well remove it.

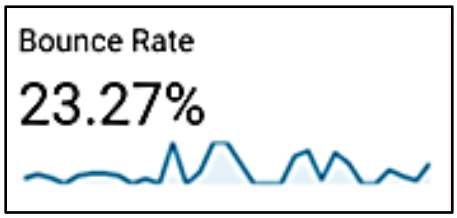


Figure 2.3 Bounce Rate

3. Mobile Tracking

Mobile tracking is used to track what operating system that the visitors use when visiting the website, such as Android, Windows, iOS and others. It is useful for the website owners in making decision of building a mobile apps for their businesses.

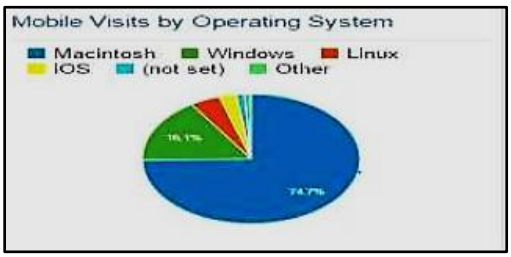
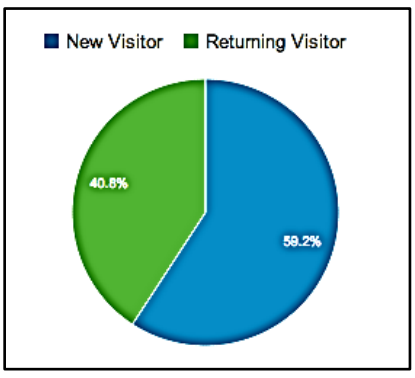


Figure 2.4 Number of Visits Using Different Operating System

4. Advanced Segmentation

Advanced segmentation allows certain types of visitors to accumulate together such as new visitors, returning visitors and paid visitors.



Figures 2.5 Percentage of New Visitors and Returning Visitors

5. Dashboard

Customizable dashboard gives an opportunity to user for incorporating report trough drag and drop functionality. Users can run custom dashboard as an interactive web application on intranets, website, blogs and others.

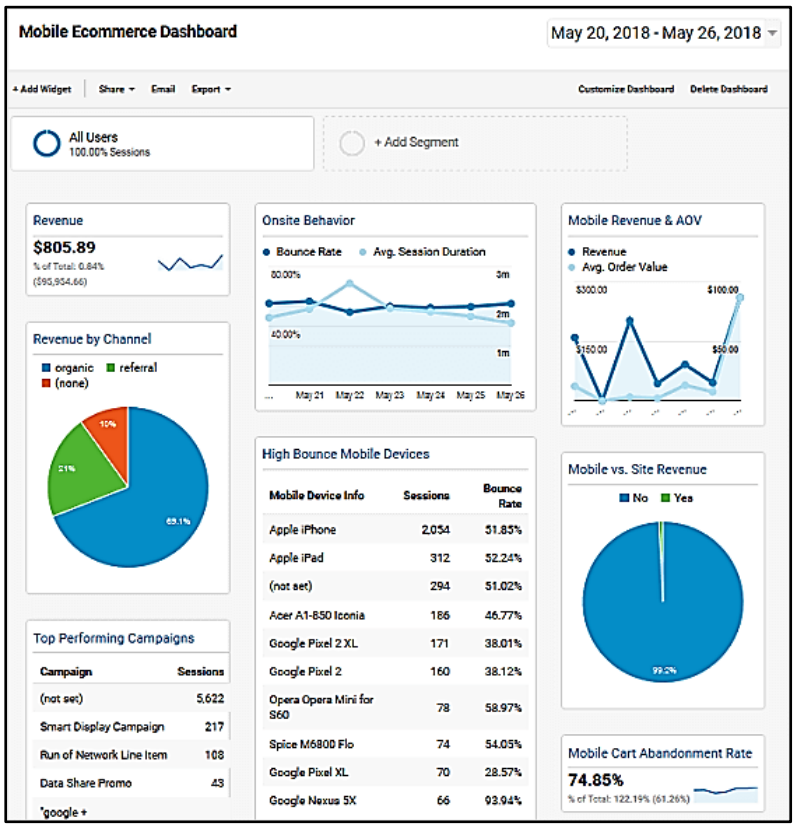


Figure 2.6 Google Analytics Dashboard

6. Analytics Intelligence

This tool creates custom alerts, for major changes in website behavior. It automatically notifies the site owner, when threshold reaches the target.

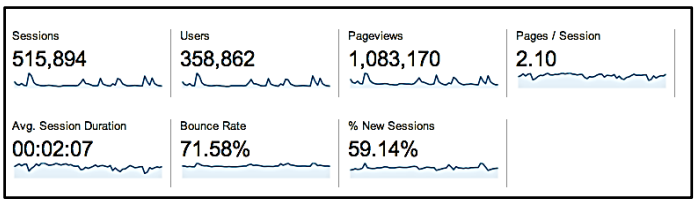


Figure 2.7 An Overview of Analytics Intelligence

In this project, the authors also described the benefits of Google Analytics. Firstly, they mentioned that Google Analytics is unrestricted as it is free compared to its competitor such as

W3Counter. Secondly, Google Analytics is user friendly as it does not require any programming skills and to analyze the data gained is much easier and can be done by experts and non-experts. Next, Google Analytics is easy to learn as one can easily access and learn about Google Analytics through any online tutorial available. They also stated that Google Analytics is easy to setup as it can be easily installed by anyone who have the basic knowledge of computer. Lastly, Google Analytics provides a detailed visitors profile such as the duration they stay in the website, where are they navigated from, which country and region they come from and much more. In conclusion, the metrics that can be obtained in Google Analytics reports is simple and easy for users to understand. If a business owner fully utilizes the use of Google Analytics, they are guaranteed to be able to increase their website traffic which may lead to increasing of profits.

2.3 ARCHITECTURE OF THE GOOGLE ANALYTICS TOOL

In Thushara and Ramesh's (2016) research paper, they discussed how Google Analytics helps in analyzing an eCommerce website to know what appears interesting to the visitors to purchase a product. According to Thushara and Ramesh, Google Analytics lets a website's owner to measure their advertising ROI (Return on Investment) as well as tracking the social networking sites and applications. Google Analytics tool also offers Geo-Targeting that helps to target visitors in a specific geographic area, executive dashboard, site overlay, traffic conversion funnels, eCommerce reports and visitor segmentation analysis. The reports allow a website's owner to learn how visitors reach the website, on which page they exit, what they purchase, how long they stay on each page and some other metrics that are provided by Google Analytics. By analyzing the reports, the website's owner can tailor the pages to suit their visitors' interests.

In this project, they also described how Google Analytics JavaScript code works on the webpage as below and the architecture of the Google Analytics is show in Figure 2.8: