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UNDERSTANDING USER ACCESS PATTERNS OF WEBSITE VISITS TO BETTER MARKETING DECISIONS

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ABSTRACT

Analyzing to find how many visitors visited your web site becomes more important, if you are housing business on your web site, to enhance business opportunities and target more potential customers, without disturbing their security and integrity. The graphical results have helped management understand access patterns of the users visiting the web site in a better manner to make marketing decisions, influencing the targeted customers in choosing a good school for their children. After its implementation, some modifications to our business are in pipeline.

INTRODUCTION

The data about the ones who visited the organization's web site stored as web log on the server.[5] Analyzing the weblogs is the process of evaluating the organization's web site, analyzing the data, and making alterations in their businesses depending on the analysis.[21] A number of commercial organizations are benefiting by web analysis and have started maximizing their business performance through their web sites.[10] Without good data the organizations cannot do good analysis as analysis is vital for better performance.

Data Collection and Processing

When a visitor browses a page from the web server hosting your web site, the data about that visit is stored in log files. The web server fulfills the visitor's request by sending the requested page back to the visitor's browser.[3] While the browser is processing the data, the webserver gets in touch with other servers, which might be keeping some portion of the requested page as is shown in figure 1. After the tracking code is received by the browser, the

code starts running though the remaining page is loading.[6] While the code executes, it discovers the characteristics of the visitor and the browsing environment he is using.[9] Then it collects the data such as how many times he visited our website and where he is located, etc. One drawback of this process is that it takes more time for the page to display on the browser.

Once desired data has been gathered by the code, then it locates cookies, written in PHP, that is used for information storage regarding the visitor. Once cookies get written on the visitor's system then tracking code forwards the gathered data to the server.[12] The server saves this received data in a log file. This log file is nothing but a big text file having all the information about visitors visit either first time or updated if it is his second or next visit, depending on the circumstances.[2] The log file contains the information such as at what time and date the page view took place, the visitor either followed referring web sites or search engine etc to reach to our web site. For how many times the visitor has visited our web site.[13] What is the IP address of the visitor and what is the geographic location of the visitor. The data collection process gets finished, once all this data get saved in the log file.[22] Then processing engine processes this data into data elements or fields, such as date and time etc. After generation of fields the filters are applied to the data, which help in formatting of reports, i.e., which fields will appear and how and where those will appear in the report.[7] The processed data then go to the database, from where the management can access the desired report for their use.
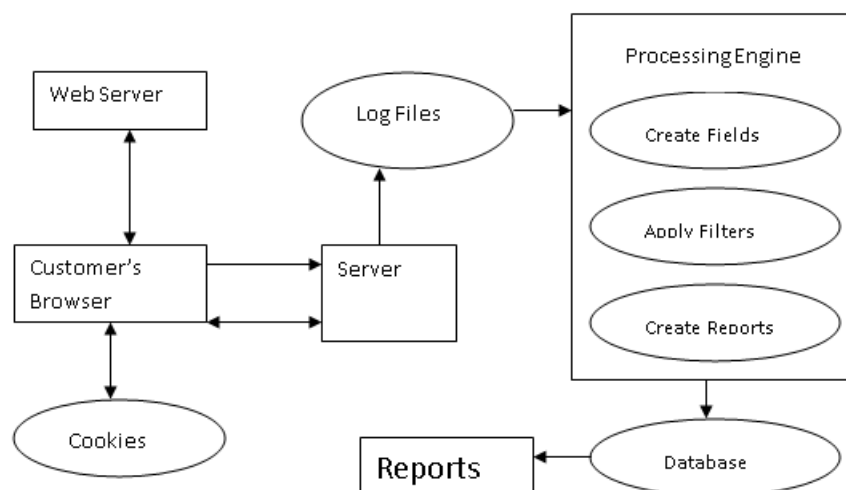

Figure 1: Flow chart of data collection and processing.

This methodology uses the page tagging technique to recognize the customers. Once customer is recognized then it follows their actions to gather the data.[17] Those pages are

tagged using JavaScript that we want to track for customer information. Without the code on the specific page, that page could not be tracked.

The tracker code written in JavaScript collects the customer's information, store that data in cookies written in PHP, and the same is forwarded to server.[19] Whenever this tracker code is run after generating a page view, the data is sent to server. Every page view created is identified with a unique name. The tracker dig outs the data from the visitor's browser.[16] This tracking code could be used for charts and graphs, the on-click attribute of the charts and graphs has been set, and if a user clicks that attribute a page view gets generated.

To track a user for storing his information the server could use to most five first-party cookies.[23] For tracking the user, these cookies are set by the tracking code like for how many times the user visited the site and what is the geographic location of user etc. but these cookies do not store personal data of the user.

RESULTS

The output is a graphical representation of number of visits of different visitors to our web site.

Figure 2 represents the number of visits for one month and one could even see the number of visits on specific date. The dashboard gives brief report about every aspect of data being collected by the server. It shows the bounce rate, which could be defined as the percentage of visitors who stopped surfing our web site when they saw the first page, the page views are how many pages a visitor saw on our website. The dashboard contains the traffic sources, such as whether the visitor visited our website directly or through some search engines, such as Google or yahoo etc. or they visited it as it was referred in some site, where he was surfing.

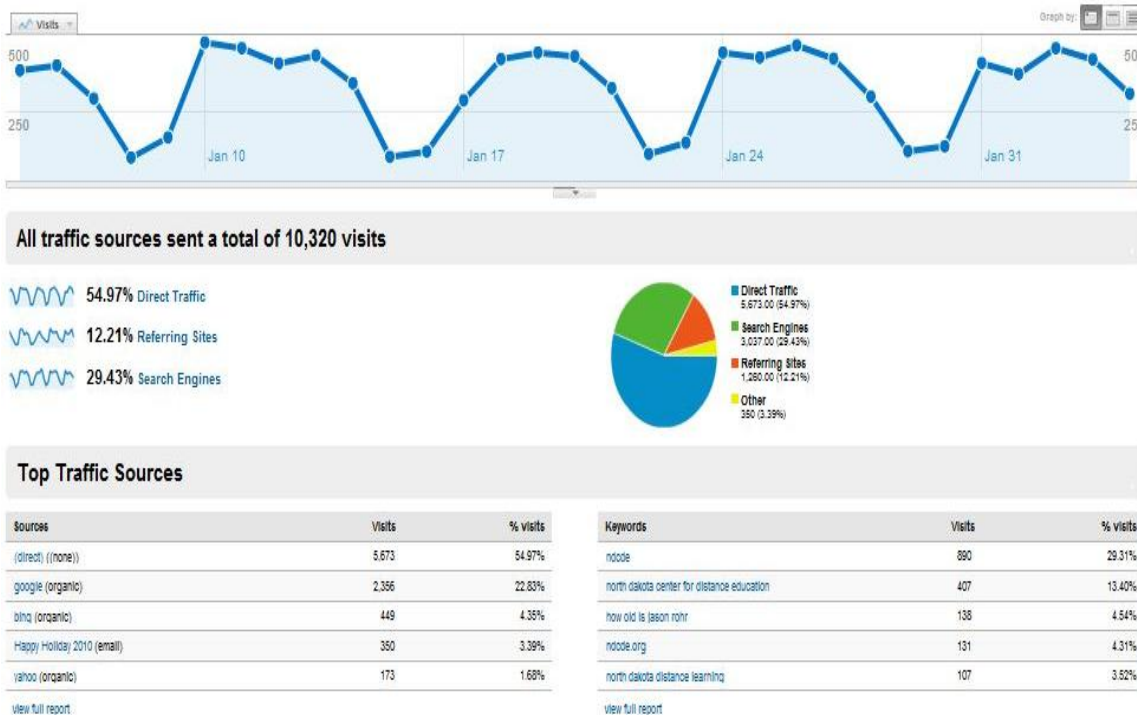**Figure 2: Dashboard.**

Figure 3: All traffic sources (like direct traffic, referring sites, search engines).

Figure 3 shows all the traffic sources, like direct traffic, referring sites and search engines. Direct traffic represents, all the visits made directly to www.example.org pages. Referring sites represent, all the web sites which have hyperlink to our web site. Search Engines represent, all the searches made for our web site through Google, Yahoo, MSN, AOL etc. The maximum traffic is due to direct traffic.

Figure 4 through a line graph shows that all visits made by visitors through referring sites. Referring sites are web pages which have hyperlink to our web site. It also has data displayed in tabular form, describing through which website how many visits to our site have been made. So the management is planning on contacting these websites to accelerate its business.
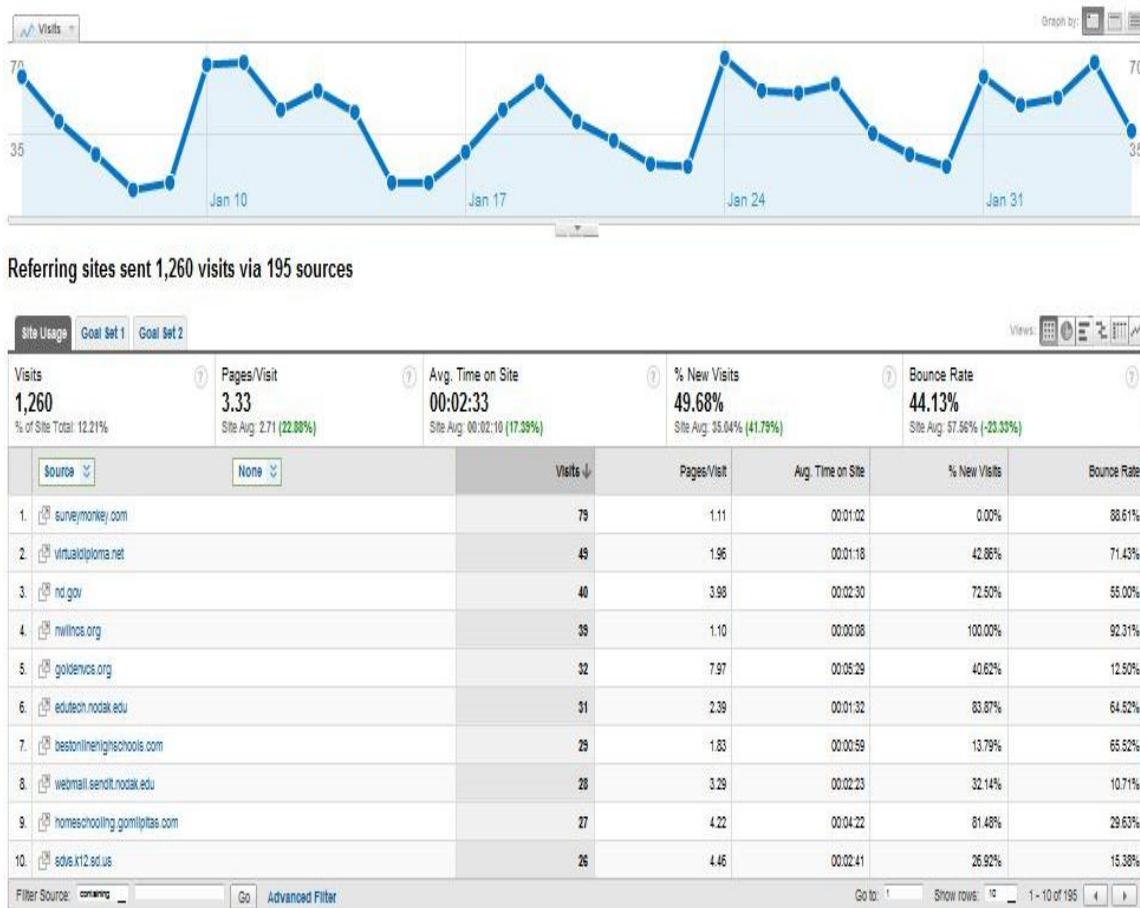

Figure 4: Visits made to the site through Referring site.

Figure 5 through a line graph shows that all visits made by visitors through search engines. Search Engines represent, all the searches made for our web site through Google, Yahoo, MSN, AOL etc. It also has data displayed in tabular form, describing through which search engine how many visits to our site have been made.
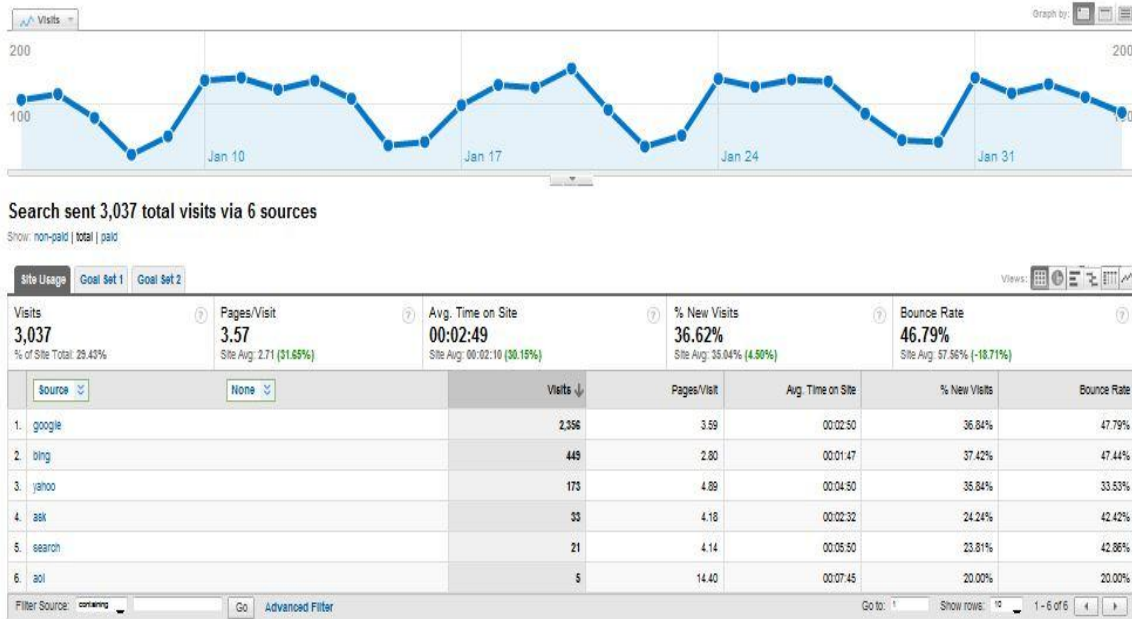
Figure 5: Visits made to our site through Search Engines.

Figure 6 represents the people of different countries who made how many visits to the site. Dark Green shows maximum visits made by that country. As is seen in the figure, USA has the most visits. Light green shows less number of visits. It also has data displayed in tabular form, describing which country made how many visits to our site.
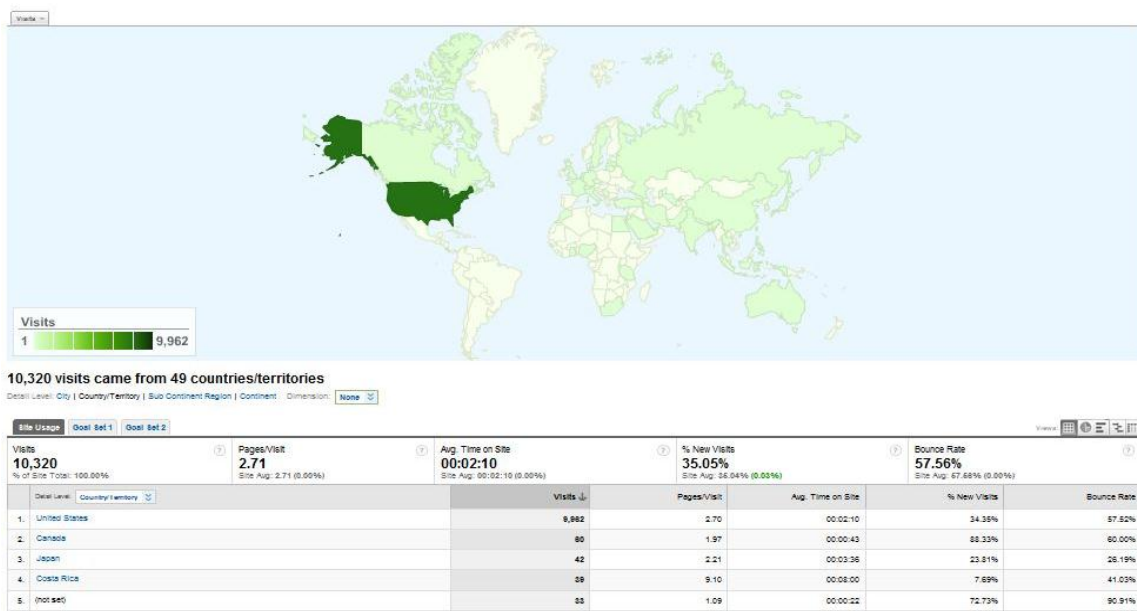

Figure 6: World View of visits.

If we drill down to the USA as is shown in Figure 7, we can further see that which state made maximum visits. Dark Green shows maximum visits made by that state. As is seen in the

figure, North Dakota has the most visits. Then come Minnesota, Alaska and South Dakota respectively. Light green shows less number of visits. How many visits were made by which state has been represented in the table form also.
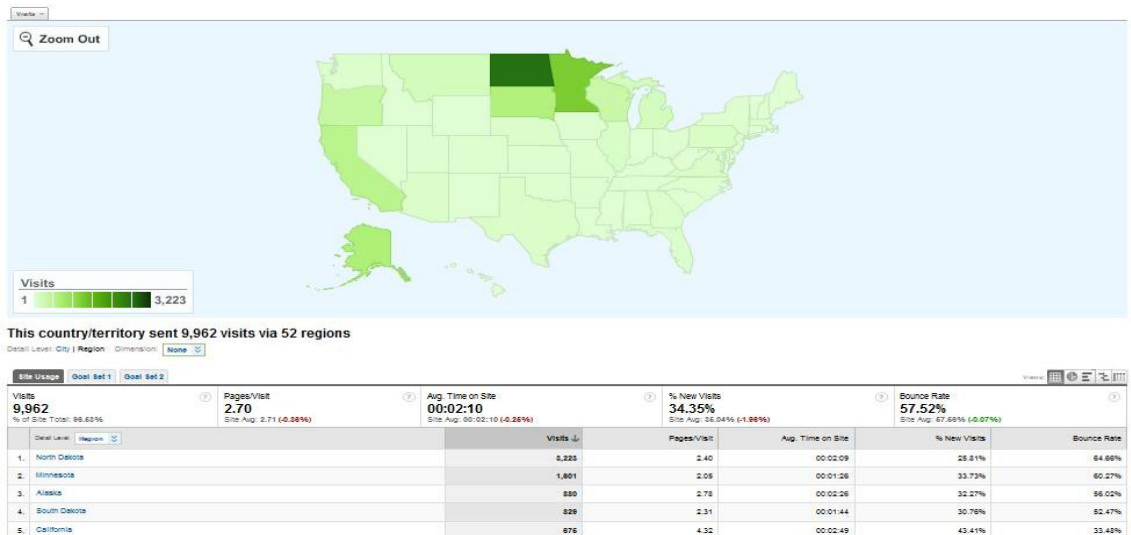

Figure 7: USA Visitors.

If we further drill down to states of USA as is shown in Figure 8, we can further see that which city in the state made maximum visits. A random selection of North Dakota state was made. Bigger circles show maximum visits made by that city. As is seen in the figure, Bismarck has the most visits followed by Fargo. Fargo has one small dot within it showing visits made by the West Fargo region. The visits to Bismarck could be attributed to the fact that it is the state capital and our web site is hosted in Fargo city even if we have filtered out all the IP addresses of the employees of our business.
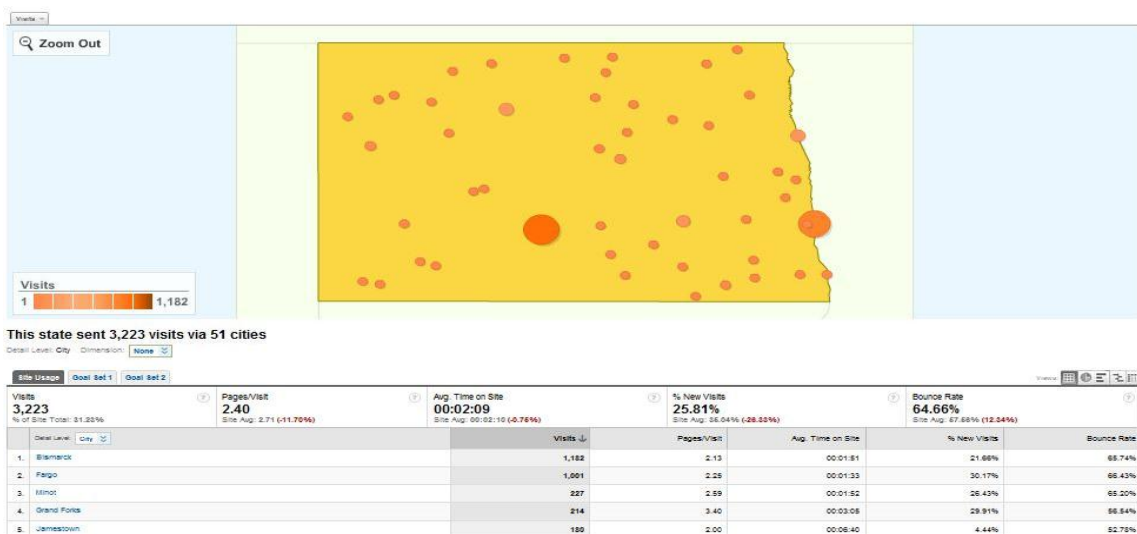

Figure 8: North Dakota state Visitors.

Figure 9 is representing the one-month visit, 1001, of the visitors in the form of a line chart in Fargo city. The maximum visits, 60, took place in one month. The visitors spent about 1 minute and 33 seconds on the web site. Out of total visits about 30.70% visits were made by new customers.

Figure 9: Fargo city Visitors details.

CONCLUSIONS

From the results we found out that during weekdays visits to our web site are more than during weekends. Direct Traffic is because of the enrolled students, but our site is visited through search engines and referred sites too. It is found out that North Dakota has the most visitor, which is our home state, and the neighboring states South Dakota and Minnesota follows the trend.

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