

# Monitoring the popularity of websites

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## Contents

<b>1</b>	<b>Definitions</b>	<b>2</b>
<b>2</b>	<b>Popularity analysis of web sites</b>	<b>2</b>
2.1	Web traffic analysis . . . . .	3
2.1.1	Open source tools . . . . .	3
2.1.2	Flag counter . . . . .	4
<b>3</b>	<b>About Algologic</b>	<b>5</b>
<b>4</b>	<b>Closing remarks</b>	<b>5</b>

### Abstract

Web designers are always concerned about the popularity of their website. They would like to assess the impact of design changes they make. This article examines a simple, inexpensive way to quantify the effect of changes to a web site. Citation details of this article are given in [1] . Text shown in wine-red color are clickable hyperlinks.

# 1 Definitions

This part of the article may sound redundant, but it is necessary, to avoid ambiguities. These terms are often misunderstood or used in often conflicting contexts.

Web site : (also written as website) According to wikipedia, a website is a collection of interconnected web pages, including text and multimedia content, typically identified with a common domain name, and published on at least one web server

Domain name : is an identification string that defines a realm of administrative autonomy, authority or control within the Internet.

Web page : (also written as webpage) is a machine readable document that is suitable for the World Wide Web and web browsers. A web browser displays a web page on a monitor or mobile device.

Search engine : is a software system that is designed to search for information on the World Wide Web, based on user-chosen keywords. The search results are generally presented in a line of results often referred to as search engine results pages (SERPs). The information may be a mix of web pages, images, and other types of files.

# 2 Popularity analysis of web sites

Popularity can be evaluated on a global scale, or on a local scale. Search engines use a concept of “page ranking”, to decide the sequence in which pages are reported in a SERP. The page ranking algorithm is specific to search engines. In this article, we look at local popularity evaluation i.e. relative popularity of a webpage within a website.

The reasons why we may like to assess the local popularity of a webpage would be:

- Decide which would be the best page, where we can add hyperlinks to other pages
- Decide which would be the best page, to which we can add hyperlinks from other pages
- Given a modification we wish to make in several pages, in what order should we make the modification

- If we wish to add a “feedback” or a “ guest book” link, decide the best page where it should be placed

Some important points must be considered when assessing popularity of web sites.

1. It is not easy/possible to give a stand-alone, absolute metric for measuring popularity. It can at best be made on a relative scale, by comparison only.
2. Popularity is a function of the website itself, as well as the reaction of the world to it.
3. A website designer has very limited scope on how he/she can influence the reaction/response of the audience.
4. It takes about a day or two or more for the audience to react, and the response to a website to stabilise. Such responses should be measured after a gap of at least a week from making changes to the web design.
5. The comparison can be limited to pages within a website, or may be across websites (page ranking).
6. The effort involved in measuring popularity should be within reasonable limits.

The popularity of a webpage (within a given website) can be measured, or at least estimated, in two different ways:

1. Popularity of a specific webpage, measured over a period of time
2. Relative popularity of a set of webpages (within a given website)

## **2.1 Web traffic analysis**

### **2.1.1 Open source tools**

To be able to evaluate a webpage, we must use tools for monitoring the visits to that webpage. Web servers systematically record the traffic passing through the website, in what is called as log files. Web traffic analysis, also called as web analytics is the process of examining the raw server log files, and displaying information in a suitably formatted and tabulated style. Two of the common open source tools used for web analytics are:

AWStats [5] is an open source Web analytics reporting tool, suitable for analyzing data from Internet services such as web, streaming media, mail, and FTP servers. AWStats parses and analyzes server log files, producing HTML reports.

GoAccess [6] is an open source real-time web log analyzer and interactive viewer that runs in a terminal in \*nix systems or through your browser.

The above two tools may be an overkill for simple web popularity estimations, and may not always be supported by your web server. We study a simple and inexpensive tool in the next paragraphs.

### 2.1.2 Flag counter

Flag counter is a simple tool available for free on the web [2]. It generates a two line HTML and a configurable graphic image. You add the HTML code to your web page, at any convenient place. It shows: a flag and a two-letter code for each country where visitors came from, the number of visitors from each country, and the total number of views made for the webpage where this code is located. We get this data, without meddling with the server logs, and without acquiring any privacy-threatening information. No personal identification data is collected, stored or displayed. Of course, the image displayed will be different on each webpage, depending upon the response of the visitors to that page.



Although this tool gives very little visitor info, in comparison to awstats or goaccess, it is enough to make a crude estimate of the popularity of webpages. This tool is simple, non-intrusive, and free. You can analyse the information displayed, in a number of interesting ways.

You can use this analysis, to guide you while you make changes to the content and design of your website.

We take two pages from the author's own website <http://drpartha.org.in> as a case study. The table shown below was created by observing the corresponding flag counter images on successive dates. We use the following mnemonics for the table which follows:

N	No.
FN	File name
Vs	Total Page Views
Cs	Total Countries
Vr	Total Visitors

N	FN	Date 2018-	Vs	Cs	Vr	Vs/Cs	Vs/Vr	Vr/Cs	Remarks
1	index.htm	08-26	374	6	52	62.33	7.19	8.67	Started flags
		08-26	383	7	54	54.71	7.09	7.71	
		08-27	399	8	58	49.88	6.88	7.25	
2	linux1.htm	08-26	132	2	20	66.00	6.60	10.00	Started flags
		08-27	150	4	37.50	6.00	6.25		

Interpreting these results, and correlating them to the actual design changes made in the webpages, is a matter of personal choice/experience of the web designer. Now the designer has some quantifiable measures to guide his design options.

The above method allows :

- Monitoring the evolution of the popularity of a specific webpage over a period of time.
- Comparing the popularity of several webpages over any desired duration.

Regular monitoring of all the webpages in a website, combined with a consolidated analysis, can help find design strategies which can significantly improve the popularity and effectiveness of your website.

### 3 About Algologic

Algologic Research and Solutions [3], an enterprise created by the author, offers various services related to web creation and management, under the name of “web gardening” [4].

### 4 Closing remarks

This article was created by the author, using L<sup>A</sup>T<sub>E</sub>X . The L<sup>A</sup>T<sub>E</sub>X source of this article can be obtained by sending a request to : [drpartha@gmail.com](mailto:drpartha@gmail.com). Please mention the Ref. No., and the Vers. code mentioned at the top of this article. As always, your constructive suggestions and remarks are always welcome.

## References

- [1] S. Parthasarathy, Monitoring the popularity of websites, <http://drpartha.org.in/publications/monitoring.pdf>
- [2] Flag counter, <https://flagcounter.com/>
- [3] Algologic, Algologic Research and Solutions, <https://drpartha.org.in/algologic/algologic.htm>
- [4] Algologic, Web gardening, <https://drpartha.org.in/algologic/webgarden.htm>
- [5] AWSTATS, Official website, <https://www.awstats.org/>
- [6] GoAccess, Official website, <https://goaccess.io/>

### About the author



Fig. 1: Dr. Partha

**S. Parthasarathy** (aka Dr. Partha) brings with him, a very rich experience (since 1980) in the software industry, both as an employee of a large company, and as an independent entrepreneur. He holds an Engineering Doctorate (Docteur Ingenieur) from Grenoble, France, and was also a Post-Doctoral Scientist in Paris, France. He has visited and taught at several institutions worldwide (France, China, Thailand, Indonesia, Germany, Spain, UK, Poland, Nepal, India). He is the author of several research publications, popular articles, and educational CDROMs. He is an Editor of the international journal "Engineering Applications of Artificial Intelligence", published from the UK by Pergamon/Elsevier Press. He is an aggressive supporter of the Free and Open Source Software (FOSS) movement, and is a regular contributor to the international effort on Linux. His contributions are part of all major Linux distributions worldwide. One of his contributions has been translated (from English) into seven different languages !

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## Index

About the author, 7

Algologic, 5

awstats, 4

Bibliography, 6

conclusions, 5

goaccess, 4

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