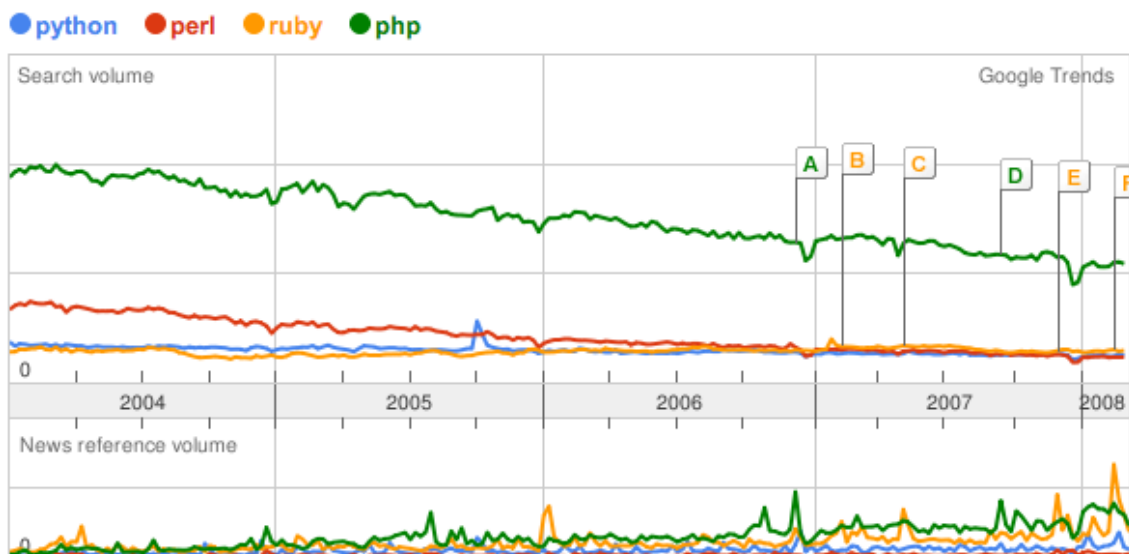# Brief Overview on Web Scripting Languages

A. Web Scripting Languages

This document will review popular web scripting languages[1,2,12] by evaluating its history and current trends. Scripting languages to be reviewed is as the following:

1. Scripting languages running at client side
   - Javascript
   - CSS
   - XSL[1]
2. Scripting languages running at server side
   - Python
   - Perl
   - Ruby
   - PHP

Google trends for server-side scripting languages:

1. Client Side Web Scripting Languages

a. Javascript

Originally built by Netscape and later standardized by ECMA under ECMA-262 specification[3]. This language is also known by several nicknames[4]. Javascript is

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1) Although XSL is not mentioned in the reference, this language is important as stylesheet language for XML-based documents.

running at client side and is interpreted by browser.

These days, Javascript is popular with its AJAX implementation which handles asynchronous request between server and client (browser). This enables more interactivity with less page loads thus a more responsive web application since only partial content is updated upon the invocation of the request. Data exchange between client and server can vary with several formats, for e.g: XML, JSON, plain text[5].

A common problem with Javascript implementation is when browser has no Javascript support, incomplete or varying Javascript compliance, or Javascript is disabled. Hence, another design approach (e.g: degradable ajax[6]) needs to be considered. Another problem is different level of DOM support by different browsers. Consequently, some workaround needs to be done in order to make javascript work properly among browsers.

Some Javascript frameworks are also created to address cross-browser compatibility and more effective Javascript coding. The popular ones include Dojo,Yahoo UI (YUI), Prototype and Scriptaculous, and Jquery[2].

b. CSS

Cascading Style Sheets (CSS) is a stylesheet language used to describe the presentation of document written in a markup language[7].

CSS is interpreted by browser and its specification is recommended by W3C[8]. Level of implementation varies among browser. It's also noticed that some browsers bring up their own CSS rules. Common workarounds in addressing different CSS interpretations are by adding CSS hacks or writing different CSS for different browsers.

c. XSL

XSL (Extensible Stylesheet Language) is a language used to format document written in XML. A subset of this language called XSLT (XSL Transformations) is used to convert or transform XML document into XHTML document for webpage.

Just as CSS, the standard for XSL is defined by W3C[9]. Support for this language is

2) In some documents, Jquery is not mentioned as popular (or class A javascript framework), but I add it to the list due to its adoption in industrial and commercial sites.

provided by web browsers. However, someone can also use parser at the server side to process the XML file and its XSL stylesheet to render a valid XHTML page.

2. Server Side Web Scripting Languages

a. Python

Python was designed by Guido van Rossum who now is working for Google[10]. Python is characterized by its minimalist syntax and semantics while the standard library is large and comprehensive[11].

According to TIOBE index, Python ranks 7th in term of programming language popularity[12] and it gets more widely used by academician and researchers and also businesses[13].

b. Perl

Perl is popular as a language used for system management in *NIX based OSes. This language was created by Larry Wall, a UNIX hacker.

Perl has evolved from a language originally developed for text manipulation into a general purpose language used in system administration, web development, network programming, GUI, and more[14].

c. Ruby

Ruby was built by Yukihiro Matsumoto following the principle of good user interface design. He stresses that systems design needs to emphasize human, rather than computer needs[15].

Ruby is an object-oriented language, every data type is an object.

For handling web development, a web framework called Ruby on Rails[19] is written in Ruby. This web framework gets more exposure and popularity due to its capability in RAD (Rapid Application Development) [16,17].

d. PHP

PHP is a web scripting language popular for open source web developers and some companies who want quick development process. This language was developed by Rasmus Lerdorf and nowadays has been enhanced from a language used to produce dynamic web pages into further support in CLI (Command Line Interface) and graphical applications[18].

Although this language is popular for open source and individual developers, it usually doesn't come as first choice at enterprise level. The lack of good coding practice is often questioned by enterprise architect. To address this, some companies have developed PHP based frameworks for more corporate usage.

Server side web scripting languages in comparison

	Python	Perl	Ruby	PHP
Main purpose	general purpose	general purpose	general purpose	web
Website	python.org	perl.org	ruby-lang.org	php.net
First appeared	1991	1987	1995	1995
Latest version (as of 2008-03-14)	2.5.2	5.10.0	1.8.6	5.2.5, 4.4.8
License	Python Software Foundation License	GNU GPL	Ruby License, GNU GPL	PHP License
OS support	cross platform	cross platform	cross platform	cross platform
OO support	yes	yes	yes	yes
Type hinting	static and dynamic	dynamic	dynamic	dynamic
Popular web frameworks	Django, Pylons	Maypole, Catalyst	Ruby on Rails	Cake, Symfony, Zend Framework

B. Web True Languages

Besides web script languages, some true languages which serve as general purpose languages are also popular for web deployment. Java with JSP and .NET framework (using C#, VB.net) are two popular choices for web deployment using true languages. However, because this summary is narrowed into scripting languages, the aforementioned true languages are not reviewed .

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