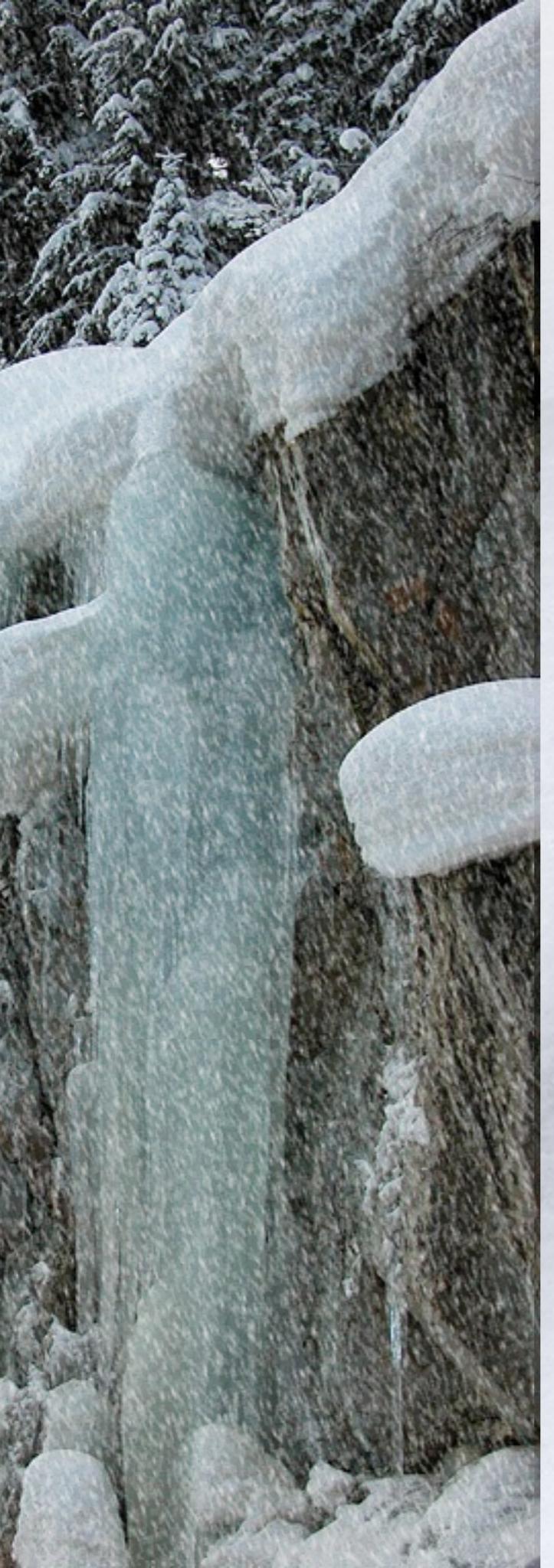


Programming the World Wide Web

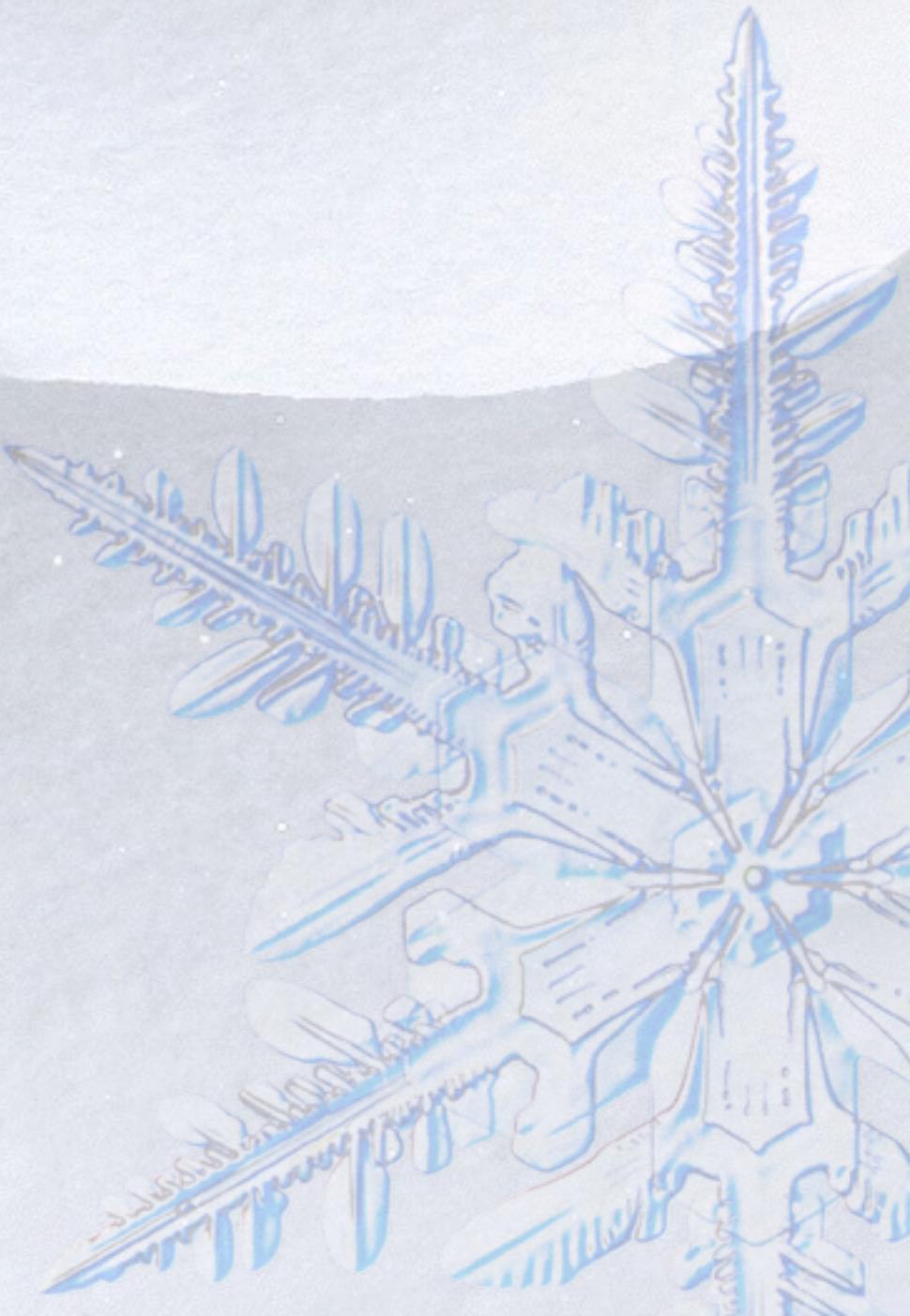


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Outline

- ❖ **Introduction**
 - ❖ **LAMP**
 - ❖ **References**
- 

Course Goals

- ❖ A general understanding of the fundamentals of the Internet and WWW
- ❖ Knowledge and experience with the major web technologies
- ❖ Introduction to terms and acronyms
- ❖ Insight into what constitutes a well designed, usable web application

Course Contents

Full Stack Web Development

- * HyperText Markup Language (HTML) for authoring web pages
- * Cascading Style Sheets (CSS) for supplying stylistic information to web pages
- * JavaScript for creating interactive web pages
- * Asynchronous JavaScript and XML (Ajax) for enhanced web interaction and applications
- * PHP Hypertext Processor for generating dynamic pages on a web server
 - Structured Query Language (SQL) for interacting with databases

Optimization

- * http
- * web server

Course Arrangement

 3*12 weeks

- * Teaching
- * Experiments
- * Homeworks
- * Bonus

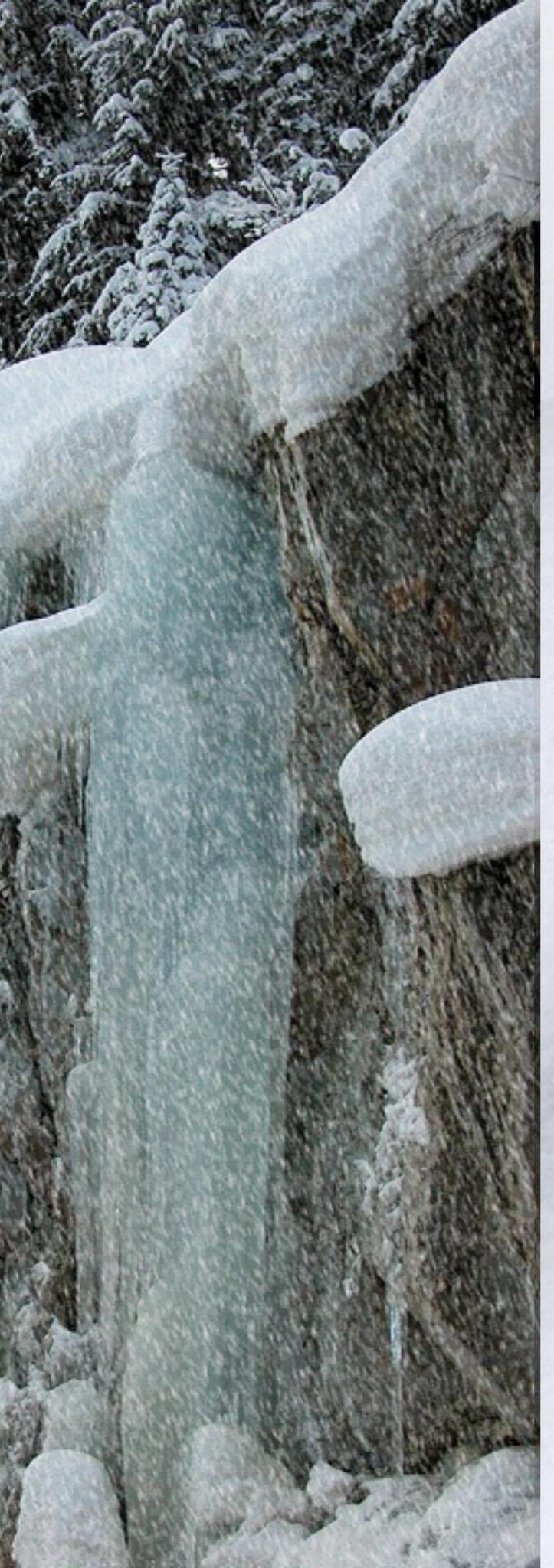
Assessment

Coursework - 40%

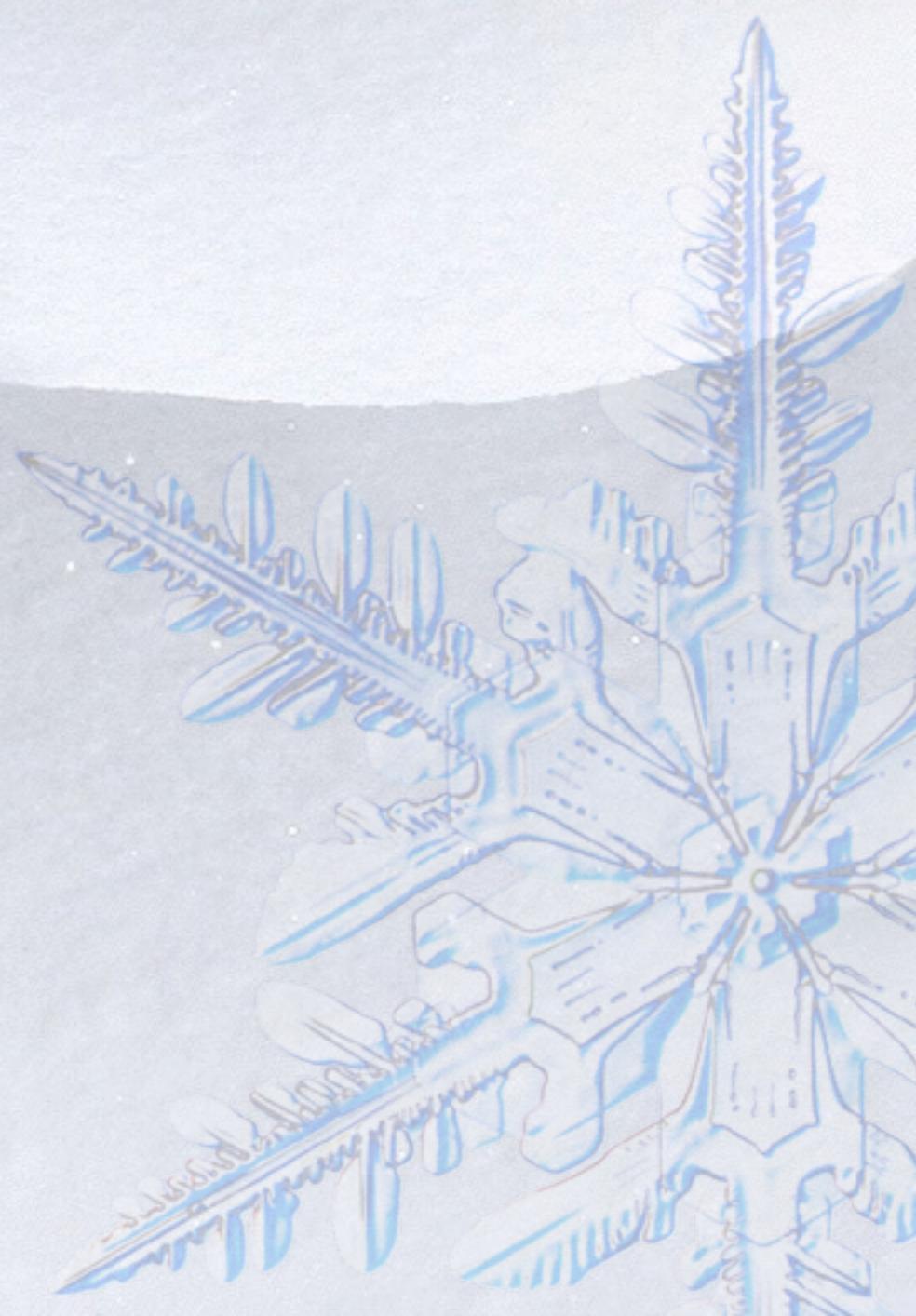
- * Experiments + Homeworks
- * Web application programming + report
- * Mark + feedback

Exam - 60%

- * Two hour written examination



Outline

- ❖ Introduction
 - ❖ LAMP
 - ❖ References
- 

LAMP

- ❖ LAMP stands for Linux-Apache-MySQL-PHP.
- ❖ Instead of PHP, Perl and Python are also used.
- ❖ This is a free and lightweight alternative to “WISA,” Windows-IIS-SQL Server-ASP (and now, ASP.Net).

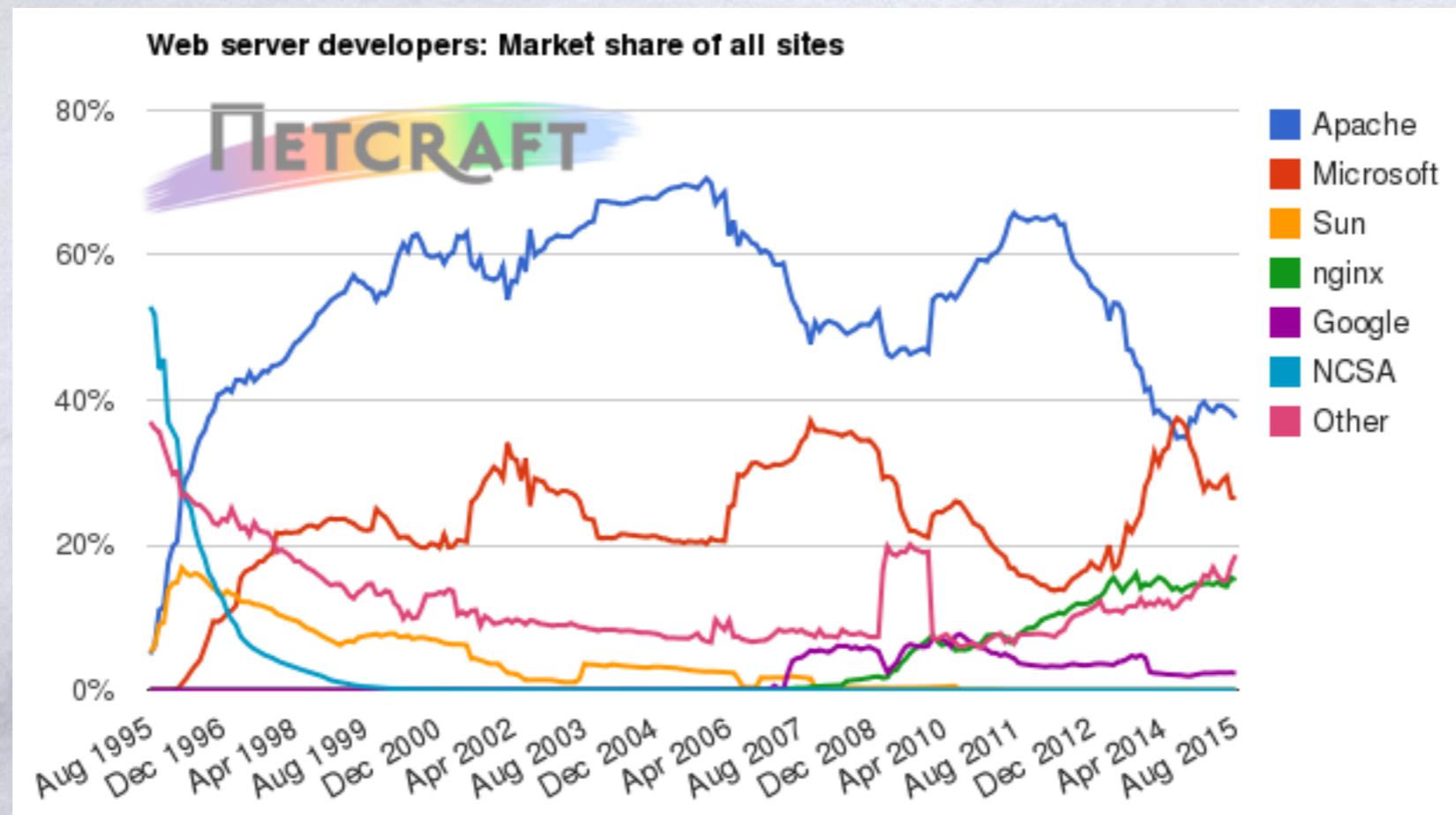
LAMP: System

Linux/Unix

- * Red Hat Enterprise Linux
- * Suse
- * Debian
- * FreeBSD
- * Ubuntu
- * Yellow Dog Linux(PS3)
- * Mac OS

LAMP: Server

Apache



Source: <http://news.netcraft.com/archives/category/web-server-survey/>

LAMP - MySQL

- ❖ Fast, free, stable database
- ❖ Syntax is similar to Oracle
- ❖ Many of the same features as Oracle
- ❖ Production version still missing subqueries, stored procedures, and triggers
- ❖ Frequently used in conjunction with Linux, Apache, and PHP

LAMP: Script

Programming Language	2015	2010	2005	2000	1995	1990	1985
C	1	2	1	1	2	1	1
Java	2	1	2	3	-	-	-
C++	3	4	3	2	1	2	9
Objective-C	4	11	42	-	-	-	-
C#	5	5	9	9	-	-	-
PHP	6	3	5	23	-	-	-
Python	7	6	6	24	20	-	-
JavaScript	8	8	10	6	-	-	-
Visual Basic .NET	9	-	-	-	-	-	-
Perl	10	7	4	4	8	17	-
Pascal	17	14	28	14	3	10	6
Lisp	26	16	14	8	6	4	2
Fortran	27	24	15	18	4	3	5
Ada	31	25	17	16	5	6	3

Source: <http://www.tiobe.com/index.php/content/paperinfo/tpci/index.html>

Samples

	System	Server	Storage	Script
Yahoo	FreeBSD + Linux	Apache	MySQL	PHP
Facebook	FreeBSD	Apache	MySQL + Memcached	PHP
Wikimedia	Linux	Apache + Lighttpd	MySQL + Memcached	PHP
Flickr	Redhat Linux	Apache	MySQL + Memcached	PHP + Perl
Sina	FreeBSD + Solaris	Apache + Nginx	MySQL + Memcachedb	PHP
Audiogalaxy	Linux	Apache	MySQL	PHP
Friendster	Linux	Apache	MySQL	PHP + Perl
YouTube	Suse Linux	Apache + Lighttpd	MySQL	Python
Mixi.jp	Linux	Apache	MySQL + Memcached	Perl
TypePad	Linux	Apache	MySQL + Memcached	Perl
liveJournal	Linux	Apache	MySQL + Memcached	Perl

Comparision – 1

Criteria	LAMP	ASP.NET	J2EE
Licensing cost	No licensing cost	Expensive licensing cost	No licensing cost
Platform(s)	Multiple	Only Windows	Multiples
Hardware cost	Runs on very inexpensive servers	Requires slightly more expensive servers	Requires expensive Servers
Staffing	Somewhat difficult to find qualified people in this domain	Very easy to find qualified people in this domain	We can find qualified people reasonably
Security	Good	improved	Good
Performance	Very good	Often requires more expensive hardware to perform well	Often requires substantial configuration and expensive hardware

Comparision – 2

Criteria	LAMP	ASP.NET	J2EE
Scalability	Scales very well	Difficult to scale	Scales well when configured properly
Administration	Difficult: Often requires reading documentation and editing text files	Easy: Often can be done through point and click interface	Moderate: Sometimes can be done visually
Configuration flexibility	Can be difficult to configure properly	Easy to configure	Moderately difficult to configure
Frameworks	Many available often difficult to choose	One standardized framework	One standardized frame work
Components	Widely available	Widely available	Widely available
Compatibility	Very good: New versions usually backwards compatible	Moderate: New versions often break functionality	Bad: Many problems between old and new versions

Recommendations

- ❄ If the project has short budget, then use LAMP platform.
- ❄ If security of application is most important, then use LAMP or J2EE platform.
- ❄ If the project has to be in more compatible mode, then use LAMP platform.
- ❄ If the project is large, then use ASP.NET platform.
- ❄ If clients want configuration flexibility, then use ASP.NET platform.
- ❄ If the project has more time and high budget, then use J2EE.

* Asha Mandava and Solomon Antony. A review and analysis of technologies for developing web applications

Outline

- 

Introduction



LAMP



References

Text books and notes

 Slides available from:

* TSS

 Recommended Text:

* Web程序设计 (Programming the World Wide Web) , 5rd edition, Robert W. Sebesta, 2009,
清华大学出版社

* Others: 参见各章

Additional Resources

- * **Web Style Guide, 2nd Edition**
* <http://www.webstyleguide.com/index.html>
- * **W3C Documentation**
* <http://www.w3.org/>
- * <http://www.w3schools.com/>
- * **More.....**

Software

❄️ PhpStorm/Zend Studio/NetBeans/eclipse for php

❄️ Notepad ++

❄️ Chrome

- * 开发者工具，便于调试，与标准兼容性好，Web开发的首选浏览器。

❄️ XAMPP

- * XAMPP是一个免费和开源的跨平台web服务器解决方案，主要包括Apache HTTP服务器、MySQL数据库、PHP和Perl编写的脚本解释器。

* <http://www.apachefriends.org/en/xampp.html>

❄️ Others.....

Thanks!!!

