

CAP785:WEB PERFORMANCE OPTIMIZATION

Course Outcomes: Through this course students should be able to

CO1 :: plan websites for higher conversions.

CO2 :: construct websites for better user engagement.

CO3 :: develop website for better user retention.

CO4 :: measure the performance of web resources.

Unit I

Introduction to Web Performance Optimization : inside http, support for virtual hosting, caching, rendering, persistent Vs keep- alive connections, parallel downloading

Utilizing Client Side Caching : types of caching, controlling caching, dealing with intermediate caches, caching http responses, dns caching and prefetching

Unit II

Content Compression : compression methods, transfer encoding, compressing PHP-generated pages, compressing other resources

Reducing Size with Minification : javascript minification, css minification, html magnification

Unit III

Jscript, DOM and Ajax : javascript,jscript, and ecmaScript, the document object model, getting the most from javascript, ajax

Optimizing PHP : extensions and compiling, opcode caching, compiling PHP, sessions, profiling with xhprof

Unit IV

Working with Web Servers : apache, looking beyond apache, multiserver setups with nginx and apache, load balancers

Tuning MySQL : looking inside mysql, understanding the storage engines, tuning mysql, tuning myisam, tuning innodb, working with the query cache, optimizing sql

Unit V

MySQL in the Network : using replication, partitioning, sharding, complementing mysql, alternatives to mysql

Utilizing NoSQL Solutions : nosql flavors, memcache, mongodb, other nosql technologies

Unit VI

Optimizing Web Graphics and CSS : various image formats, optimizing images, css sprites, css performance

Working with SSL : ssl caching, ssl termination and endpoints, sending intermediate certificates, determining key sizes, selecting cipher suites, investing in hardware acceleration, the future of ssl

Text Books:

1. HIGH PERFORMANCE WEB SITES by STEVE SOUDERS, O'REILLY

References:

1. WEB PERFORMANCE DAYBOOK by STOYAN STEFANOV, O'REILLY