

Web Efficiency: Using XHTML, CSS, and Server-side to Maximize Efficiency

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The Key to Efficiency –

- Reuse
- Caching
- What is not transmitted does not use resources

Agility

- “ability to change quickly”
- $f = m a$
- “Elephants can dance” –
but it takes a lot of energy

Mass – a k a HTML bloat

- expensive
- duplicative
- energy intensive
- capital outlay
- intellectual inertia
- the costs of poor choices lives forever

The goal:

- minimize replication
- maximize efficiency
- use the “pyramid” to maximal advantage
- resulting in minimal cost of operation
- requires fewer servers, watts,
and megabytes/second

Client Device –

- may be workstation or portable device (e.g., iPod, phone, thin client)
- will have CSS compatible browser
- may have cache
- moderate to high bandwidth
- multiple sockets possible

Server –

- support HTTP and/or HTTPS (SSL)
- many simultaneous clients
- moderate to high bandwidth

“Classic” Method –

- serve whole pages
- only images are separate
- large data volume
- not dynamic
- not customizable

“Dynamic” Approach –

- generate pages “on the fly”
- ASP, JSP, SHTML, PERL, PHP, etc.
- server resource intensive
- Do pages always change?

The Semi-Dynamic Alternative

- Gezelter, 2006
- use off-line compilation process to generate otherwise static pages
- uses XSLT or other application to generate pages from data
- very efficient if pages are reused

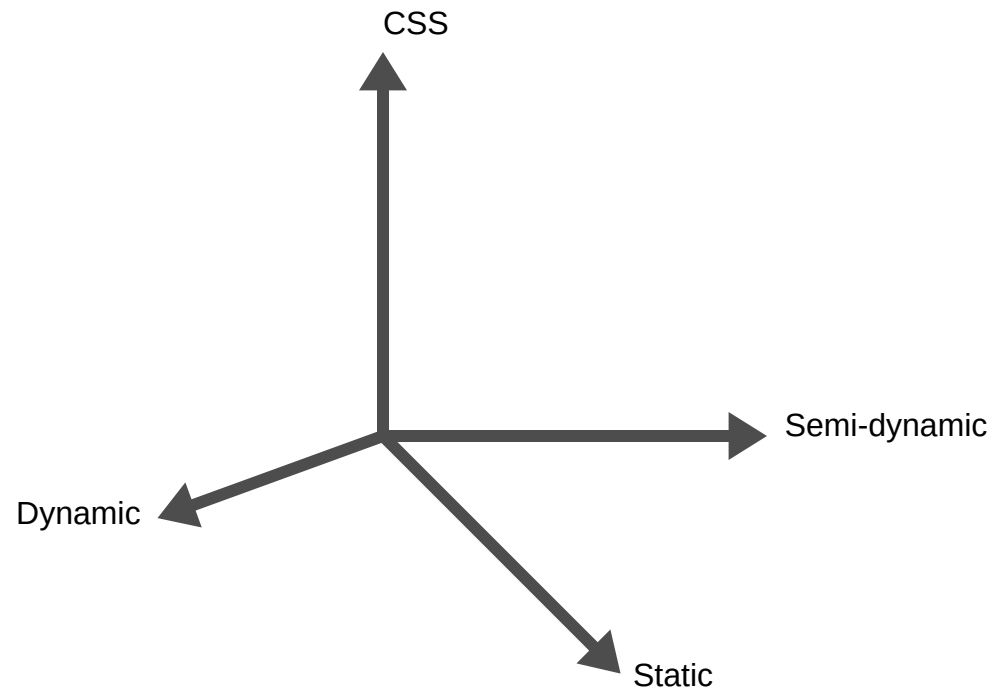
CSS

- Separate layout from data
- see <http://www.csszengarden.com>

Each approach has its strengths and weakness

- Classic – rigid and large pages
- Dynamic – flexible, yet high resource costs
- Semi-dynamic – without CSS, bulky; less flexible than dynamic
- Solution: a combination of CSS, semi-dynamic, and dynamic

Use each tool to best advantage –



- The solution lies not in one or the other but in the synergy of all.
- No single approach is optimal for all problems
- Judicious use can dramatically reduce resources

Questions?

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Session Notes & Materials:

<http://www.rlgsc.com/trentoncomputerfestival/2009/index.html>