Active Web Technology

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user view

• what changes?
  – media stream, presentation, content
• by whom?
  – automatic, site author, user
  – other users - feedthrough
• how often?
  – pace of change: days, months, seconds

computation

where does it happen

client
• applets, JavaScript, Shockwave, DHTML

server
• CGI scripts, active server pages, servlets, etc.
other machine
• authoring machine, database server, proxy
people
• socio-technical solutions

security

• for computation
  – code and data at same place!
• problem
  – data - needs to be secure
  – web-server - least secure machine
  – client machine even worse
  … and networks!

architectural design

• what happens where
• affects:
  – complexity of implementation and maintenance
  – feedback
    • seeing results of one’s own actions
  – feedthrough
    • seeing effects of other people’s actions

client side dynamism

animation
Java and JavaScript
DHTML
animated gif or movie

- pros: simple
- cons: predetermined sequence also ... streaming audio/video

Java applet or JavaScript running locally

- pros: rapid feedback
- cons: only local, no feedthrough

server side dynamism

CGI scripts
searches

- create indices off-line
- fast lookup when needed

see http://www.hcibook.com/

database access

client-side - JDBC
server side - CGI etc.

Java applet accesses database using JDBC

- pros: interactive DB access
- cons: bandwidth, security
The web is changing, its pages are no longer static.

CGI script accesses database

- **Pros:** up-to-date, use existing DB
- **Cons:** not proxy/index friendly

n-tier architectures

- one or more intermediate layers
- ‘business logic’ in layers
- web standard components and protocols

socio-technical solutions

- off-line generation
- people in the process

batch pre-generation of web pages

- **Pros:** indexable, secure
- **Cons:** slower turnaround