CS736 Quiz #2

- When a page fault occurs, what are the sources that a kernel might fetch the page from?
- VAX/VMS delays the write of modified pages using a “dirty page list”. Why is this a good idea?
- List one benefit and one drawback of the local page replacement policy, and one benefit and one drawback of the global page replacement policy.
- The early BSD UNIX uses swapping to control the multiprogramming load. Describe by what criteria the kernel decides to swap out a process, and how it choose the victim process.

CS736 Project Suggestions

- General Operating Systems:
  - Port lmbench to Windows NT and/or Java JVM
  - More “Fuzz” --- “Fuzz” on Windows NT (from Prof. Bart Miller)
  - Web Interface for Performance Monitoring (from Prof. Bart Miller)
  - Page Management Mechanism for Large-Scale Shared-Memory Multiprocessors (from Prof. David Wood and Prof. Mark Hill)

CS736 Project Suggestions

- File Systems
  - LFS for FreeBSD or Linux
  - Improving WinNT file I/O for better space shuttles
  - Disk access characteristics of journaling file systems
  - Directory design and disk layout for HTTP object caches

CS736 Project Suggestions

- Operating Systems for Internet
  - Hierarchy design of Web caches
  - Auto-mirroring support in Apache
  - Replacement algorithms for memory/disk cache of HTTP objects
  - Wisconsin Proxy Benchmark 2.0

CS736 Project Suggestion

- Tackling World Wide Wait
  - Proxy-based mirror site selection
  - Session-oriented differentiated quality of service in Web hosting
  - Caching continuous media on the Internet