CMSI 587

OPERATING SYSTEMS (GRADUATE LEVEL)

Spring 2006

Assignment 0117, 0124

This assignment aims to have you look at some real-world device from a computer system organization + operating system perspective, using the terms and concepts from SGG Chapters 1 and 2. For added entertainment, we'll have each of you tackle a different device.

Not for Submission

1. Read Chapters 1 and 2 in SGG.
2. Get LaTeX up and running on whatever system(s) you will use to work on your paper.

For Submission 0117

Please submit all assignments on hardcopy; this is what I will count as proof-of-assignment.

- Type, customize, and print *paper.tex* and *prospectus.tex*, and submit them to me (no problem, because you did #2 above, right?).

For Submission 0124

Select one of the listed real-world devices and gather information about that device from a computer system organization + operating system point of view. As much as possible, choose a device to which you have actual hands-on access, so you can explore it firsthand.

1. Submit the results of your research by answering the following questions on hardcopy. Use diagrams, screenshots, or sample code to illustrate your answers.
   a. What is the overall organization of the device? Specifically, how does the device's hardware map to the "classic" organization of processors, storage hierarchy, and devices on a shared bus?
   b. Provide some facts about the device's operating system. Is it a product in its own right? Does it have its own name? How general/specialized is it? Are other developers encouraged to write for this operating system, or is it a closed platform?
   c. Discuss the device's operating system in terms of process management (Is the system multiprogrammed? Is it dual-mode?), memory management (Is there memory protection? Virtual memory?), storage management (What storage is available? What is the file system abstraction?), and I/O subsystem (What peripherals are supported? How are they connected?).
2. Report to the class on January 24 — since everyone is looking into a different device, it will be helpful to hear from each other. Even bring the device, if possible.

Device	Student
Linux PC	
Windows 2000/XP PC	
Windows 95/98/ME PC	
Mac OS X Mac	
Pre-Mac OS X Mac	
Recent cell phone model	
Palm handheld	
PocketPC handheld	
PlayStation 2	
PlayStation Portable	
Xbox	
Gamecube	
DVD player	
TiVo	
Recent iPod model	
Linux-based iPod	