

第一章 《绪论》 第一部分的作业

- 作业：
 - 阅读至少2本操作系统相关书籍，给出这些书中关于操作系统的定义，要列出出处。
 - 阅读至少2本操作系统相关书籍，阐明操作系统的公共设计目标和某些操作系统特有的设计目标，要列出出处。
 - 阅读至少2本操作系统相关书籍，阐明操作系统的作用，要列出出处。
 - 操作系统的基本类型是哪三种？他们的关键技术有哪些？
 - 多道程序设计的主要有点是什么？

第一章《绪论》第二部分（CS）的作业

- 请给出冯·诺依曼体系结构的系统上，一个典型的指令执行周期的执行过程。
- 作为一个基本的系统保护（安全）形式，系统模式和用户模式之间有什么不同？
- 1.10 What is the purpose of interrupts? What are the differences between a trap and an interrupt? Can traps be generated intentionally by a user program? If so, for what purpose?
- 1.13 Give two reasons why caches are useful. What problems do they solve? What problems do they cause? If a cache can be made as large as the device for which it is caching (for instance, a cache as large as a disk), why not make it that large and eliminate the device?
- 1.8 Which of the following instructions should be privileged?
 - a. Set value of timer.
 - b. Read the clock.
 - c. Clear memory.
 - d. Issue a trap instruction.
 - e. Turn off interrupts.
 - f. Modify entries in device-status table.
 - g. Switch from user to kernel mode.
 - h. Access I/O device.
- 1.11 Direct memory access is used for high-speed I/O devices in order to avoid increasing the CPU's execution load.
 - a. How does the CPU interface with the device to coordinate the transfer?
 - b. How does the CPU know when the memory operations are complete?
 - c. The CPU is allowed to execute other programs while the DMA controller is transferring data. Does this process interfere with the execution of the user programs? If so, describe what forms of interference are caused.