Outline for March 28, 2022

Reading: *text*, §2

1. Greetings and felicitations!

    (a) Review course management

2. Evolution of operating systems

3. First generation (vacuum tubes): hardware only, open shop

4. Second generation (transistors)

    (a) Separation of programmers and operators

    (b) Batching, satellite systems, buffering

    (c) Device independence, resident loaders, first operating system, JCL

    (d) Atlas system: extracodes, interrupts, virtual memory

5. Third generation (integrated circuits)

    (a) Spooling, job scheduling, multiprogramming

    (b) Protection, traps, fence registers, privileges, system calls, time sharing

    (c) Virtual machines: levels of abstraction; example: THE system

        i. Level 0: hardware

        ii. Level 1: segment controller process

        iii. Level 2: operator console (message interpreter)

        iv. Level 3: I/O handlers

        v. Level 4: user processes

    (d) Customer service, compatibility

6. Fourth generation (VLSI)

    (a) Minicomputers: rise of the UNIX operating system

    (b) Microcomputers: workstations, personal computers, open operating systems