Process Abstraction

- Instruction Set
- Registers
- Physical Memory
- MMU
- I/O Devices
- Virtual Memory
- System Calls

Hardware

System Calls

Operating System
Process Abstraction

- Instruction Set
- Registers
- Physical Memory
- MMU
- I/O Devices

Virtual Memory
System Calls

Operating System

Hardware

Process
Process Abstraction

- Instruction Set
- Registers
- Physical Memory
- MMU
- I/O Devices

Virtual Machine

- Virtual Memory
- System Calls

Process

Hardware

Operating System

CS 140 Lecture Notes: Virtual Machines
Virtualizing Virtual Memory

- Guest Virtual AS
- Guest MMU (Virtual)
- Guest Page Maps
- Virtual Machine
- Guest “Physical” AS
- Machine MMU

Hardware
- Machine Page Maps
- Host “Machine” AS