

Virtual Memory

Chapter 8

Process Execution

- The OS brings into main memory only a few pieces of the program (including its starting point)
- Each page/segment table entry has a **present bit** that is set only if the corresponding piece is in main memory
- The **resident set** is the portion of the process that is in main memory
- An interrupt (memory fault) is generated when the memory reference is on a piece not present in main memory

Locality and Virtual Memory

- Principle of locality of references: memory references within a process tend to cluster
- Hence: only a few pieces of a process will be needed over a short period of time
- Possible to make intelligent guesses about which pieces will be needed in the future
- This suggests that virtual memory may work efficiently (ie: trashing should not occur too often)