

- operating system -

① Introduction to operating system

1.1 operating system overview -

system overview & functions of operating system

1.2 what does an os do?

1.3 operating system operation

1.4 operating system structure

1.5 Protection & security

1.6 Computing environment - traditional, distributed, client & server, ~~peer to peer~~ pair to pair computing

1.7 open source os

1.8 Booting

1.9 operating system services

system calls - Types of system calls & their working.

② process and threads.

- Process Concept - the process, process state, process control block
- Process scheduling - scheduling queue, operations on process - process creation with program using `fork()`, process termination
- Thread scheduling - threads, benefits, multi thread model, thread libraries

③ process scheduling - basic concept

- CPU & I/O, scheduling criteria
- CPU scheduler
- Dispatcher
- scheduling Algorithms
- FCFS, SPTF, STF, priority scheduling, round scheduling, multiple queue scheduling, multiple feedback queue scheduling

④ Memory management

- Background - basic hardware, address binding, logical verses physical address space, dynamic loading, dynamic linking and shared libraries

- swapping
- continuous memory allocation - memory mapping & protection, memory allocation, fragmentation:
- paging - basic method, hardware support, Protection, shared pages
- segmentation - Basic concept, hardware / virtual memory management - Background demand paging, tail

Performance of demand paging

- LRU, MFU

00000000 01111111 10000000 11111111
10100000 01010001 10110000 11100001

Assessment

- 1. List the services provided by a protocol
- 2. What is process communication
- 3. What is the window size of a segment
- 4. List the protocols used in transport layer
- 5. What is sliding window control & buffer management
- 6. List the services of transport layer
- 7. Explain multiplexing & demultiplexing in transport layer
- 8. Explain congestion control in transport layer
- 9. Explain flow control in transport layer
- 10. Explain error control in transport layer