MAC OS X I/O MANAGEMENT AND DISK SCHEDULING

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OUTLINE

* Introduction
*   I/o management
* Memory management
* File management.
* Disk scheduling
* Example for disk scheduling
* Advantages of Mac os x.

Mac OS (Mac OS X, then OS X) is the current series of Unix-based graphical operating systems developed and marketed by Apple Inc. designed to run on Apple's Macintosh computers ("Macs"), having been preinstalled on all Macs since 2002. Within the market of desktop, laptop and home computers, and by web usage, it is the second most widely used desktop OS after Microsoft Windows

I/O MANAGEMENT IN MAC OS X

The I/O is a collection of system frameworks, libraries, tools, and other resources for creating device drivers in OS X. It is based on an object-oriented programming model implemented in a restricted form of C++ that omits features unsuitable for use within a multithreaded kernel. By modeling the hardware connected to an OS X system and abstracting

MEMORY MANAGEMENT IN MAC OS X

Organization of Memory in Mac OS

When the Macintosh Operating System starts up, it divides the available RAM into two sections.

* It reserves for itself a zone or partition of memory known as the system

* The system partition always begins at the lowest addressable byte of memory
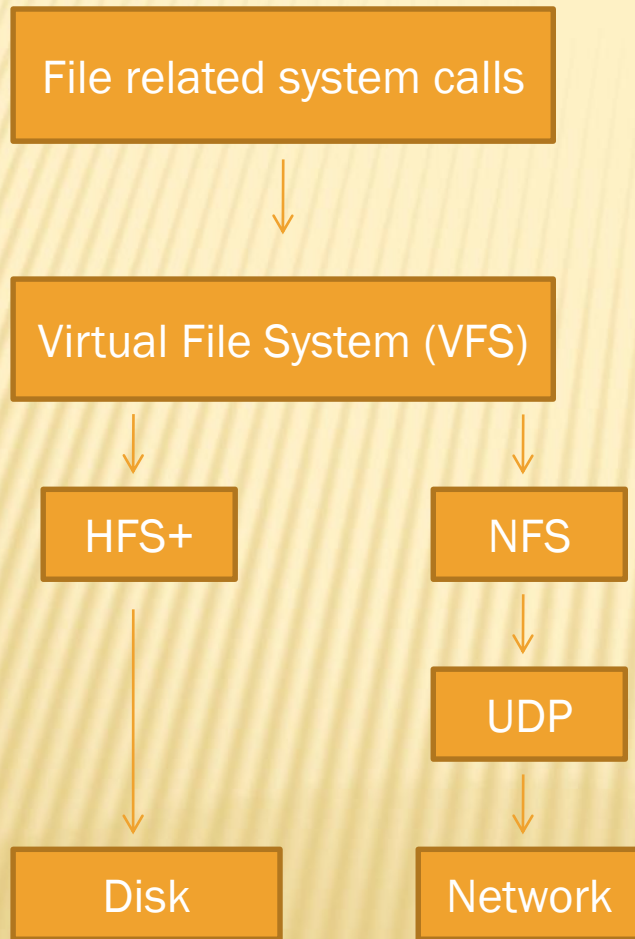
MAC OS X
MEMORY MANAGEMENT

5 Basic Mac Abstractions

- Task
- Thread
- Port
- Message
- Memory Object

MAC OS X
FILE MANAGEMENT

```
┌─────────────────────────────┐
│  File related system calls  │
└─────────────────────────────┘
               │
               ▼
┌─────────────────────────────┐
│  Virtual File System (VFS)  │
└─────────────────────────────┘
        │              │
        ▼              ▼
    ┌───────┐      ┌───────┐
    │ HFS+  │      │  NFS  │
    └───────┘      └───────┘
        │              │
        │              ▼
        │          ┌───────┐
        │          │  UDP  │
        │          └───────┘
        │              │
        ▼              ▼
    ┌───────┐      ┌─────────┐
    │ Disk  │      │ Network │
    └───────┘      └─────────┘
```

The Darwin kernel implements a Virtual File System (VFS) that translates a file-related system call into the matching call for the appropriate file system.

MAC OS X

DISK SCHEDULING

The Scheduling is used for Divide the Total Time of the CPU between the Number or Processes So that the Processes can execute Concurrently at a Single Time. For Sharing the Time or For Dividing the Total Time of the CPU, the CPU uses the following the Scheduling Techniques.

1/ First Come First Serve (FCFS) :

In this Operating System Creates a Queue which contains the Sequence Order in which they are to be Executed and the Sequence in which the CPU will Execute the Process. In this all the Jobs are performed according to their Sequence Order as they have entered. In this the Job which had Requested first will firstly performed by the CPU. And the Jobs those are entered Later will be Executed in to
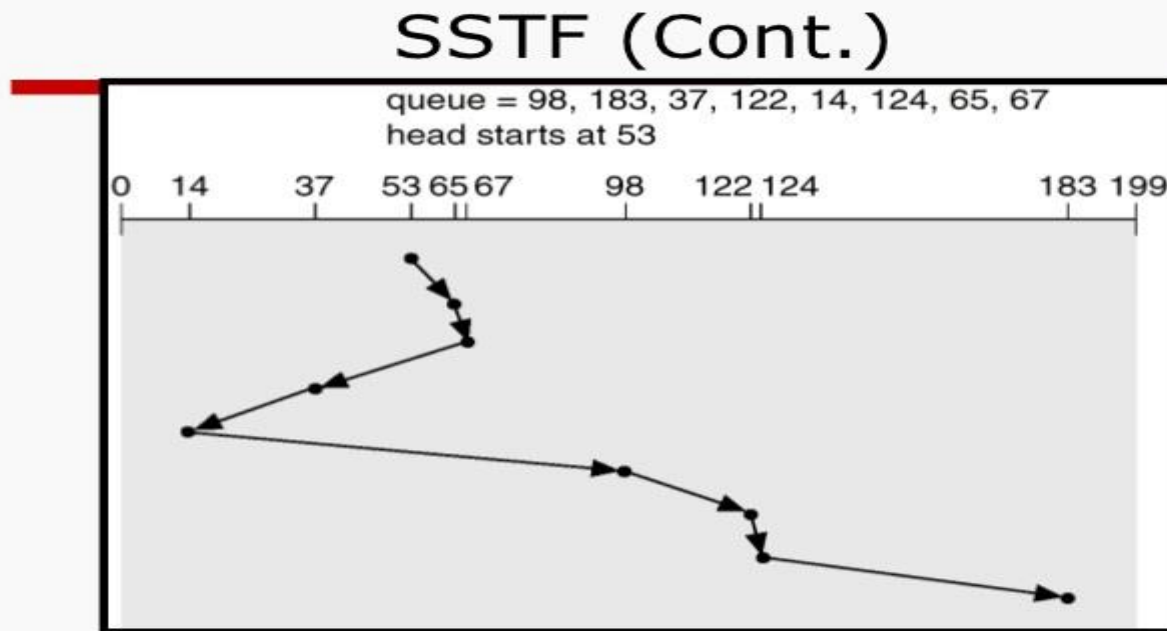
EXAMPLE (FCFS) //

queue = 98,183,37,122,14,124,65,67
head starts at 53

FCFS disk scheduling
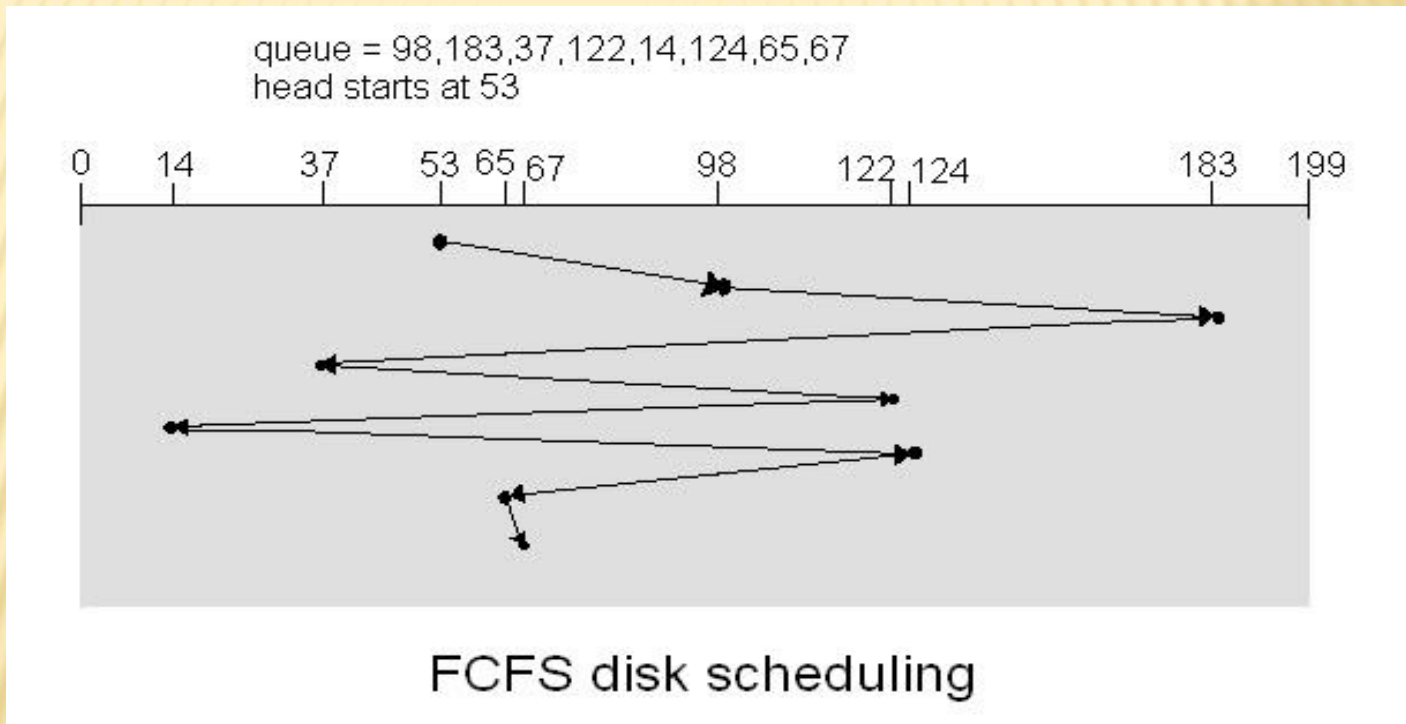
2/ Shortest Seek Time First (SSTF) :

In this Technique The Operating System will Search for the Shortest time means this will search which job will takes a Less Time of CPU for Running. And After Ex

Or

SSTF (Cont.)

queue = 98, 183, 37, 122, 14, 124, 65, 67
head starts at 53

| 0 | 14 | 37 | 53 65 67 | 98 | 122 124 | 183 199 |

DISK SCHEDULING

 3/ Scan Scheduling: This approach works like an elevator . It scans down towards the nearest end and then when it hits the bottom it scans up servicing the requests that it didn't get going down.

4/ Circular Scan (C-SCAN)
Circular scanning works just like the elevator to some extent. It begins its scan toward the nearest end and works it way all the way to the end of the system.

5/ *Look Scheduling* :- In the Look Scheduling the CPU Scans the List from Starting to End of the Disk in which the various Processes are Running and in the Look Scheduling the CPU will Scan the Entire Disk from one End to the Second end.

ADVANTAGES OF MAC OS X

RELIABILITY

   Mac OS is incredibly stable. Apple controls production from   start to finish, so every part of a Mac is designed and tested to work together.

DESIGN

   It's designed to deliver the most intuitive and integrated   computer experience in