

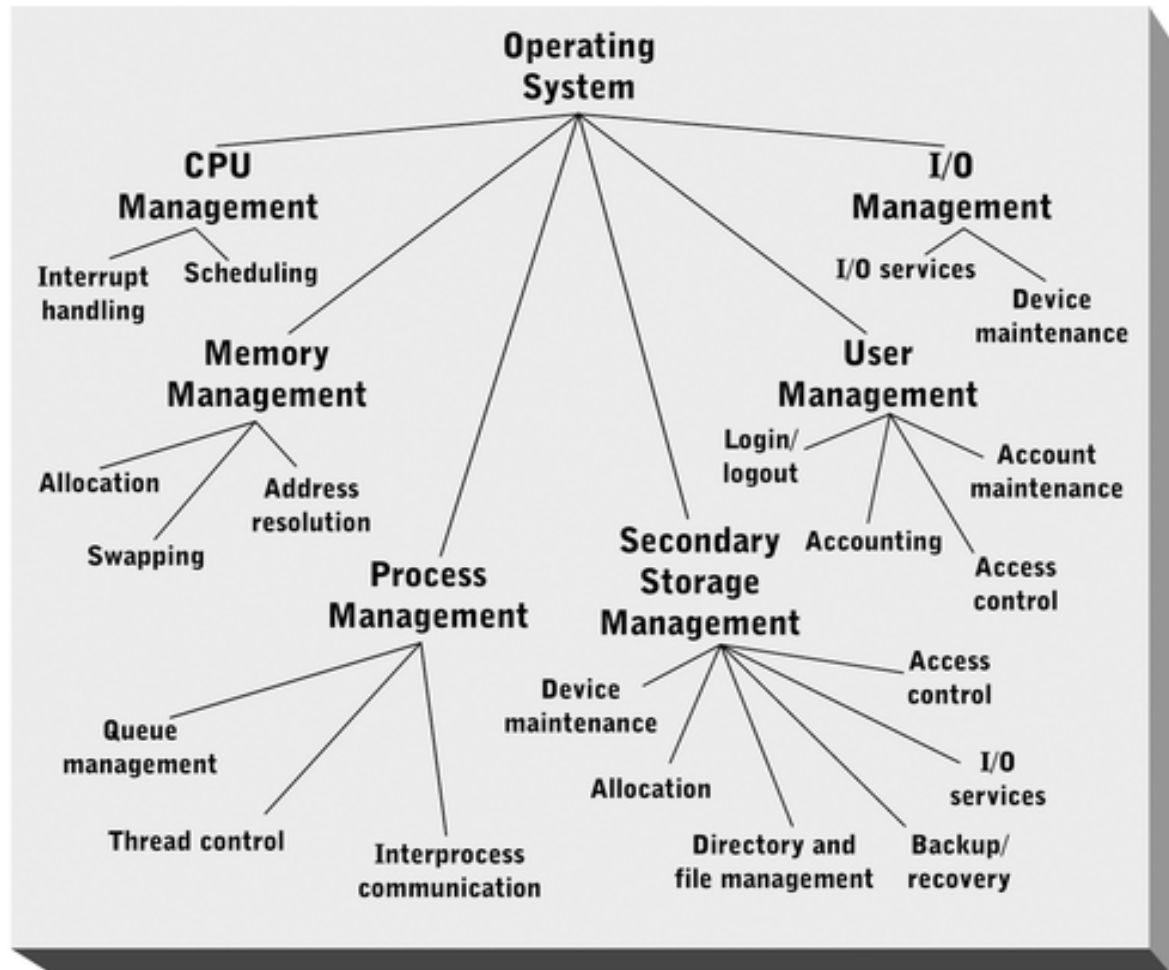
Introduction to Operating Systems

1st topic - Introduction

Operating System Overview

Figure 11-2 ►

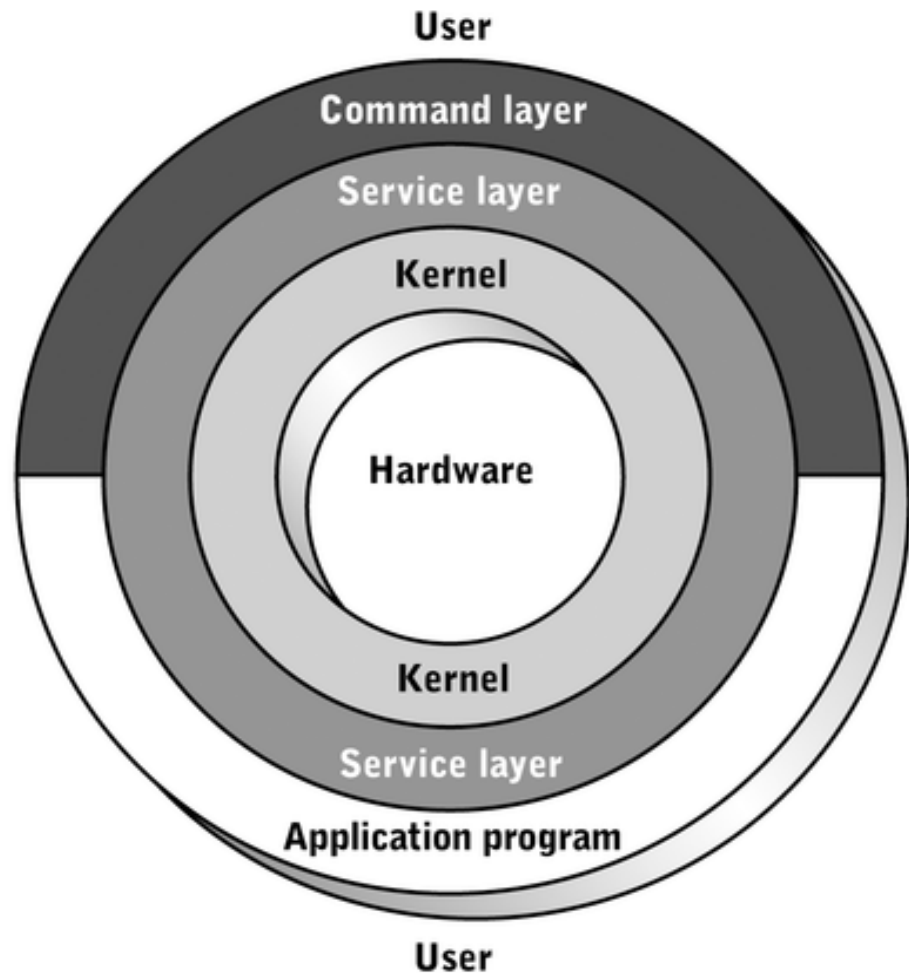
Operating system management functions



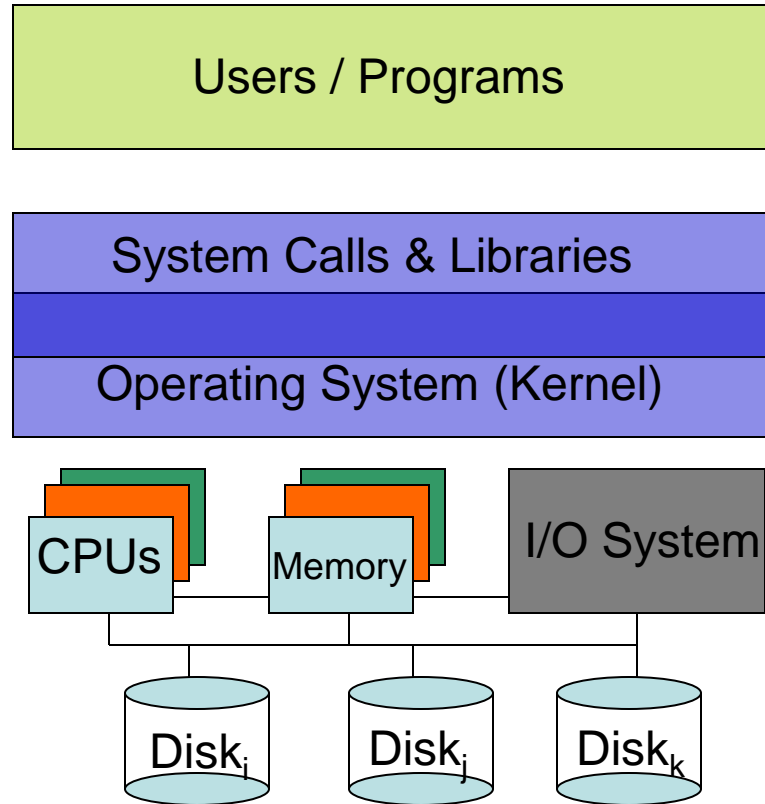
Operating System Overview

Figure 11-3 ►

Operating system layers (shaded)

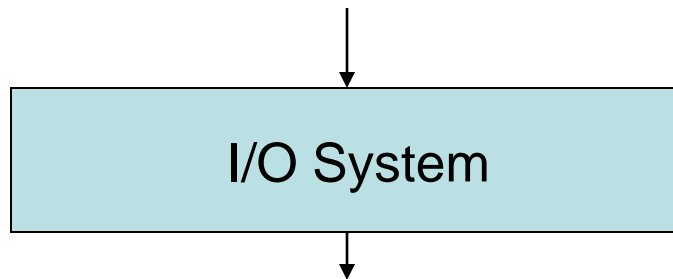


The Principle of Abstraction



The OS as Extended Machine

Read(fl, lblk, mm)



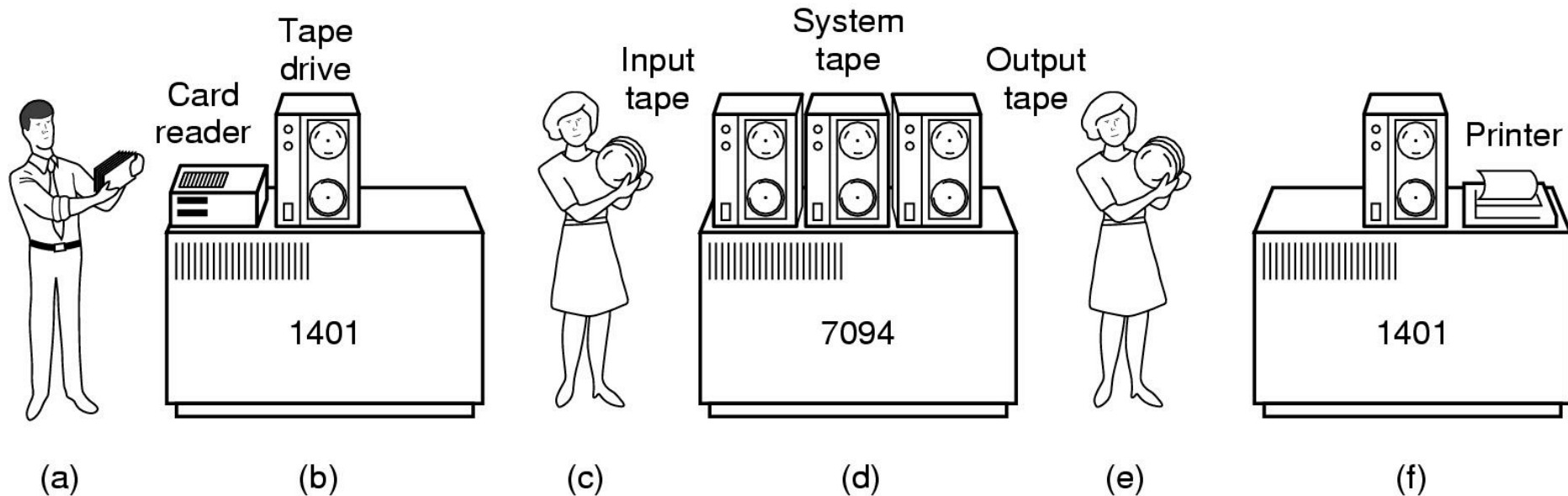
fl: file name

lblk: logical block

mm: Main Memory

- Compute pos. of lblk on disk
- Move R/W head to corresponding track
- Error Check (seek-errors)
- Read physical block
- Check for read errors
- Copy block to mm

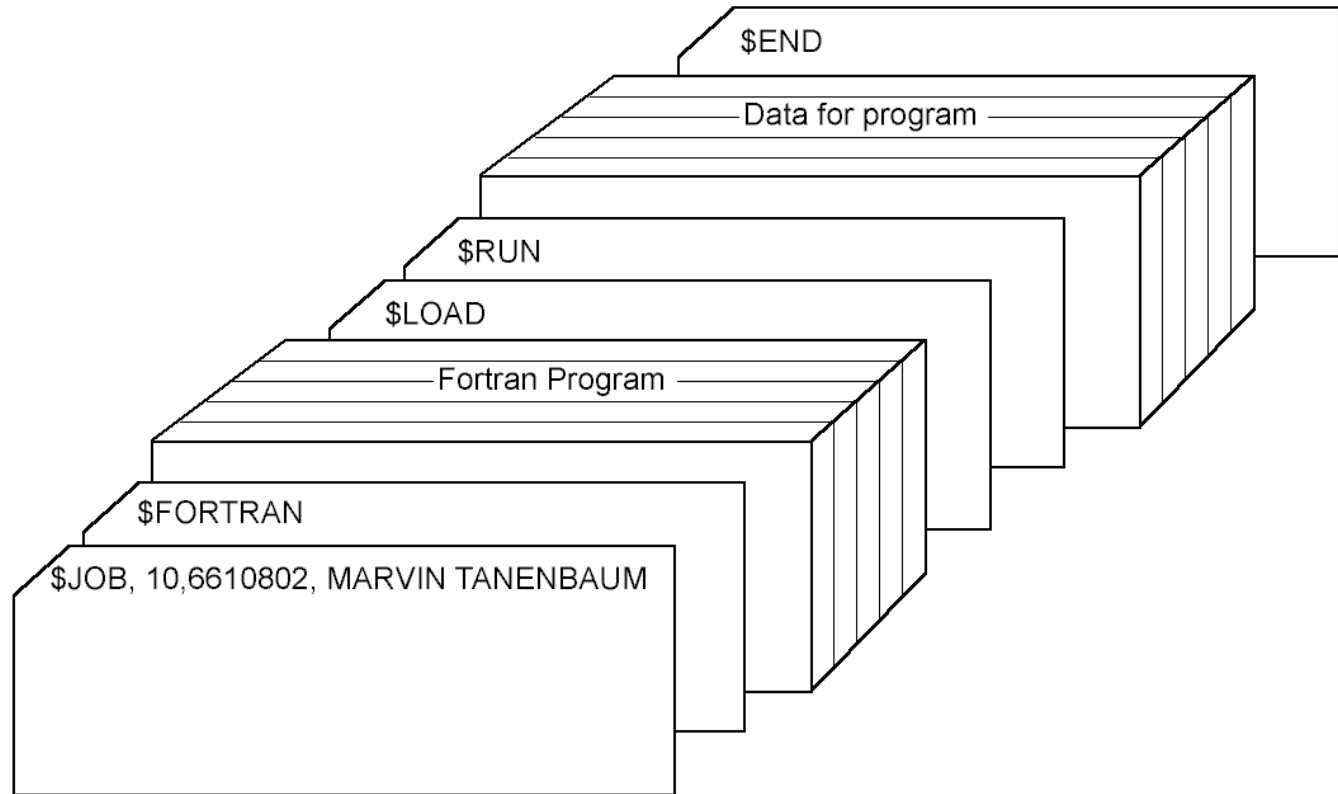
History of Operating Systems



Early batch system

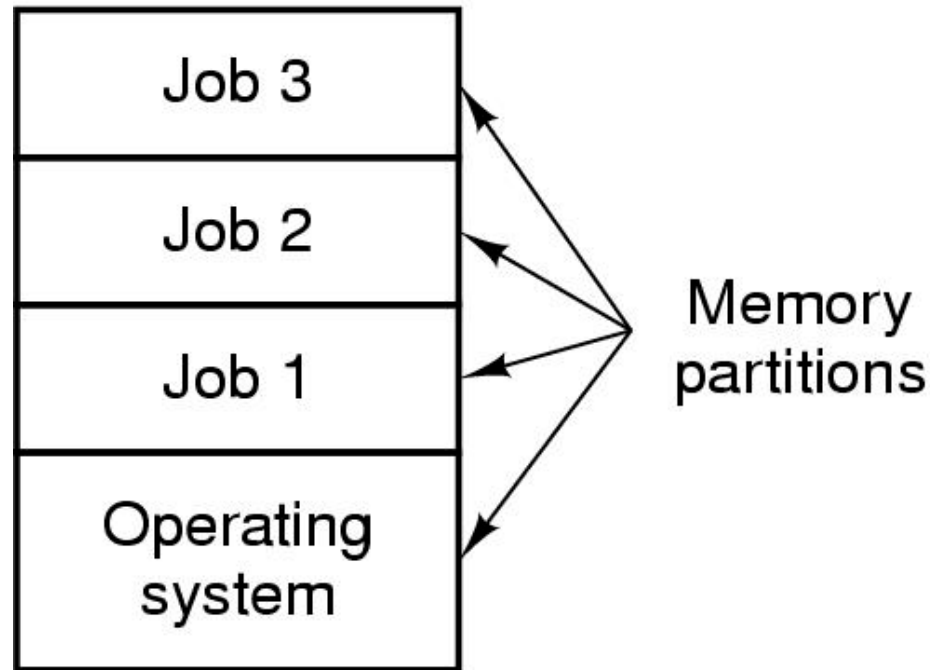
- bring cards to 1401
- read cards to tape
- put tape on 7094 which does computing
- put tape on 1401 which prints output

History of Operating Systems



Structure of a typical FMS (Fortran Monitor System) job

History of Operating Systems

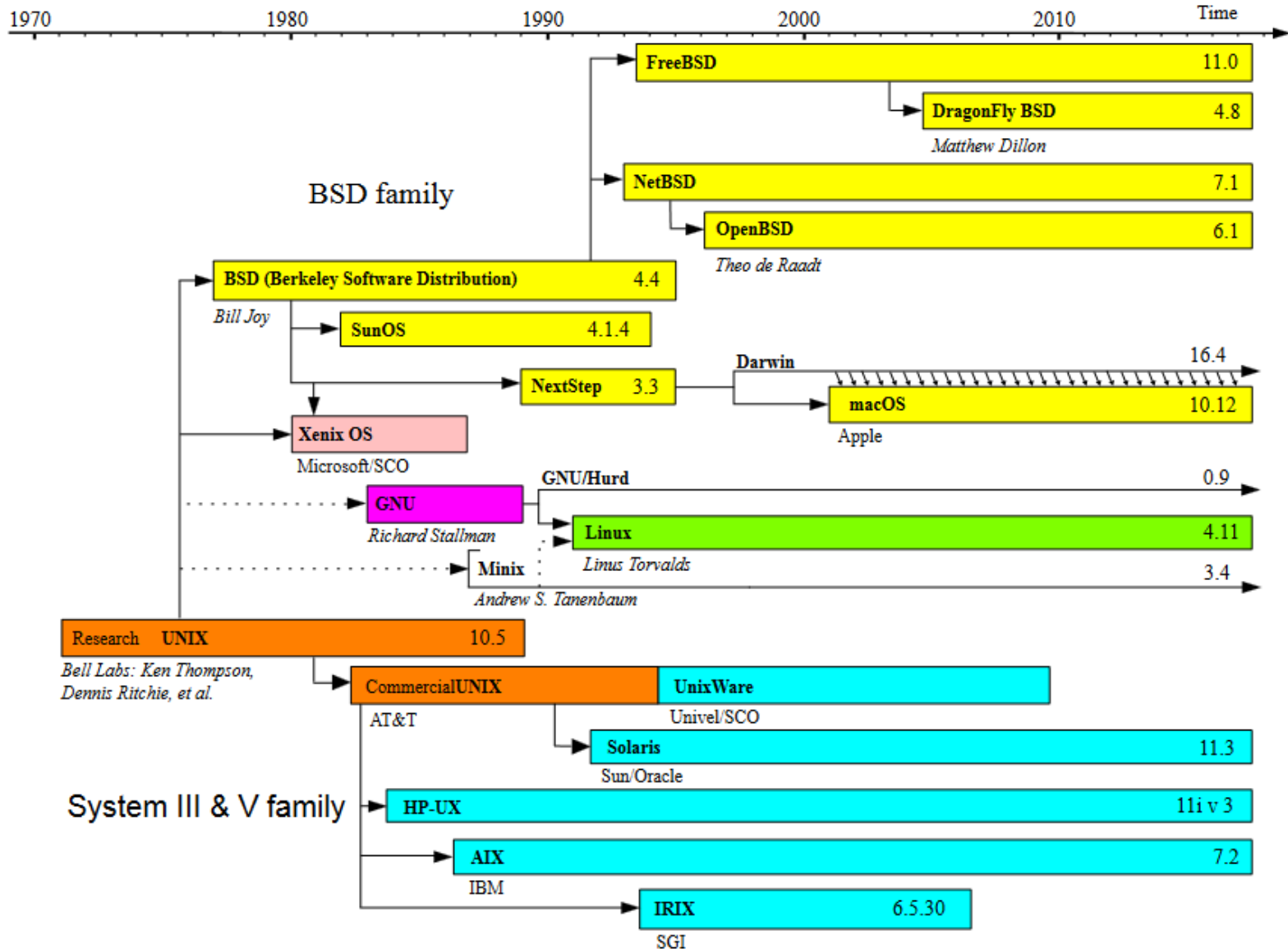


- Multiprogramming system
 - three jobs in memory

Unix Operating System(s)

- AIX (IBM)
- BSD (Berkeley Software Distribution)
- HP-UX (Hewlett-Packard)
- IRIX (Silicon Graphics)
- NeXTSTEP (NeXT)
- SunOS, Solaris (Sun Microsystems)
- ULTRIX, OSF1, Digital Unix (DEC, Compaq)
- SCO Unix (Santa Cruz Operation)
- ...
- Free: FreeBSD, Hurd, Linux, Minix...

Unix Operating System(s)



MS-DOS

Sample MS-DOS Commands

C:\>FORMAT A: Prepares an unformatted diskette on drive A: for use.

C:\>DIR A:DIR Lists the files on the diskette in drive A: (DIR stands for directory)

C:\>COPY MRKTDATA.SUM A: Copies file MRKTDATA.SUM on drive C to Drive A.

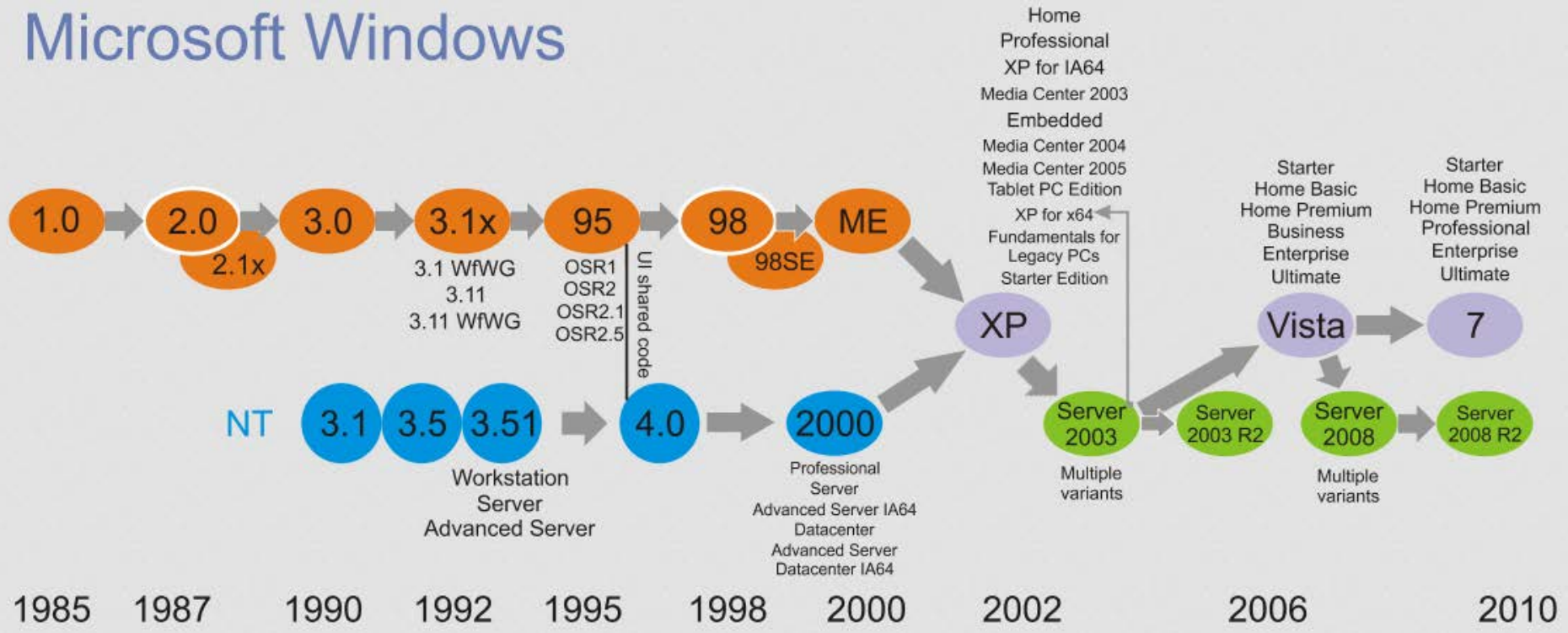
C:\>DEL A:SALESRPT.TXT Deletes file SALESRPT.TXT from drive A:

C:\>RENAME MRKTDATA.SUM SSDATA.CHT Renames the file MRKTDATA.SUM on drive C: to SSDATA.CHT

- Command-line interface
- Prompt – system is waiting for you to do something
- Key a command
- Not user-friendly

Microsoft Windows

Microsoft Windows



Real-time operating systems

- QNX (“Quick Unix”)
- VxWorks
- Windows CE, Windows Embedded
- ...
- Free: FreeRTOS, RTLinux...

Operating Systems for PDA/Smartphones/Tablets

- Palm OS
- Blackberry OS
- Symbian
- Windows Mobile, Windows Phone
- iPad/iPhone OS (iOS)
- Google Android
- ...



Market Share

Operating System

Market Share	13%
Operating System	iPhone OS 3.X
	Closed Source
	Apple
	No Multi-tasking
	Multi-touch Interface
	Safari/WebKit Browser
	Sync/Patch Updates

Market Share	3%
Operating System	Android 2.X
	Open Source
	Google
	Multi-tasking
	Multi-touch Interface
	Chrome/WebKit Browser
	Over the Air Updates

Market Share	9%
Operating System	Windows Phone Series 7
	Closed Source
	Microsoft
	Restricted Multi-tasking
	Multi-touch Interface
	Internet Explorer/Trident
	TBA

Market Share	50%
Operating System	Symbian^3
	Open Source
	Nokia
	Visual Multi-tasking
	Multi-touch
	Mozilla Browser
	Sync/Patch OTA

Market Share	< 3%
Operating System	MeeGo (Maemo) (Moblin)
	Open Source
	Nokia, Intel
	Multi-tasking
	Multi-touch Interface
	Mozilla Browser
	Over the Air Updates

Market Share	< 3%
Operating System	Palm Web OS 1.X
	Closed Source
	Palm
	Multi-tasking
	Multi-touch Interface
	Chrome/WebKit Browser
	Over the Air Updates

Market Share	20%
Operating System	BlackBerry OS 5
	Closed Source
	RIM
	Multi-tasking
	No Multi-touch
	WebKit Browser Announced
	Sync/Patch OTA

Apple
iPhone, iPad



Hardware
Can be used by any hardware manufacturer



Hardware Partners
Yet to be announced



Nokia
Nokia Mobile Devices



Other Manufacturers
Opensource OS can be used by other hardware manufacturers

Palm
Palm Smartphones



RIM
BlackBerry Smartphones



Estimated Total Market Share including previous OS versions based on Q2 2009 data

www.whytheluckymobile.com

Disclaimer: This guide is intended as a quick visual overview. Figures are indicative only.

a quick visual overview February 2010
Mobile Operating Systems