Operating Systems: Configuration & Use

CIS345

Macintosh OS X V10.5 (Leopard)

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Introducing Apple and the Macintosh Operating System

• A Colorful Contribution to the World of Computing
  – Apple founded on April 1, 1976 by Steven Wozniak and Steven Jobs
  – First product, Apple I received a lukewarm reception
  – In 1977 Apple introduced the Apple II computer and caused more excitement
  – In 1983 Apple introduced the first GUI computer for the consumer market, the Lisa
  – In 1984 Apple launched the Macintosh 128k, the first affordable GUI-based personal computer
Introducing Apple and the Macintosh Operating System

• Macintosh characteristics
  – Proprietary hardware and operating system
  – Close bond between Apple computers and OS
  – Small overall market share, but larger presence in certain markets
  – OS X is UNIX-based
    • Increased stability, networking, and security features
    • Quickly adopted by those who could make the change
    • Some users stayed with OS 9
Introducing Apple and the Macintosh Operating System

- Macintosh characteristics (continued)
  - Built-in Multimedia Hardware and Software in the Mac OS
    - Standard configurations sufficient for managing images, music and home video editing
    - New system include the ability to burn CDs and DVDs
    - Multimedia devices have long been a part of standard Macs
  - Ease of Use of the Mac OS
    - The OS is kept as simple as possible
    - User intervention is kept as minimal as possible
Installing and Configuring Mac OS X

• Minimum Requirements
  – Software Requirements When Upgrading
    • To use OS 9 apps from within OS X, upgrade from OS 9.1
    • Mac OS 10.5 CD included with OS X for upgrade
    • Verify the version of Mac OS before installing
      – Apple menu | About This Computer (or About This Mac)
Installing and Configuring Mac OS X

• Minimum Requirements (continued)
  – Hardware Requirements
    • Mac computer with an Intel processor
    • 1GB of memory
    • 5GB of available disk space
    • DVD drive for installation
Installing and Configuring Mac OS X

Step-by-Step 12.01

Installing Mac OS X (Tiger)

Note: Installing OS X (Leopard) should follow similar steps

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Features of the Mac OS X Desktop

• Startup
  – Startup display consists solely of the Mac icon and a progress bar

• Login
  – On a multi-user system the user will be prompted to select a user name from a list and then enter a password
  – Passwords are encrypted and saved in a database known as the system keychain
Features of the Mac OS X Desktop

• The Desktop
  – The Mac desktop contains some of the familiar metaphors from other GUI OSs including a trash can, a menu similar to the Windows Start menu, and an application launcher.
Features of the Mac OS X Desktop

• The Finder
  – Finder is the foundation of the Mac OS
  – In Mac OS 9 the finder visibly loads various system extensions
  – In Mac OS X these extensions load invisibly
  – The default GUI/desktop view before an application is launched, analogous to Windows Explorer
  – Finder offers several menus including File, Edit, View, Windows, Special, and Help
  – The Go menu can be used to access storage locations through Apple’s .Mac service
Features of the Mac OS X Desktop

• The Apple Menu
  – Click a tiny Apple logo on the top left of the desktop
  – It does not offer the same options as it did in OS 9
  – In OS X it is a startup and shutdown menu, with recent items and a shortcut to system preferences
  – It is not customizable
  – Old OS 9 functions moved to the Dock
  – Third-party utilities can be used to restore some of the functionality of the OS 9 Apple menu to OS X
Features of the Mac OS X Desktop

• The Dock
  – New in OS X
  – A floating bar on the desktop that replaces the OS 9 Control Strip
  – Gives access to a variety of system preferences
  – An improvement over Control Strip
  – By default the Dock includes several shortcuts
  – Drag items on to add them
  – Drag items off to remove them
  – Change position, size, and behavior of Dock
Features of the Mac OS X Desktop

• Under-the-Hood Features of Mac OS X
  – Improved on the best aspect of earlier Mac OSs— the GUI
  – Plus a stable UNIX core
    • A rock solid platform
    • Complies with International networking standards
    • Includes open standard security protocols
    • Better designed to multitask and fulfill a server role
    • Allows familiar root-level access to administrators
Features of the Mac OS X Desktop

• Under-the-Hood Features of Mac OS X (continued)
  – GUI known as Aqua due to its blue, fluid appearance
  – Almost-yearly new major releases of OS X
    • 10.0 (initial release) March 2001
    • 10.2 Jaguar August 2002
    • 10.3 Panther October 2003
    • 10.4 Tiger First half 2005
    • 10.5 Leopard October 2007
    • 10.6 Snow Leopard August 2009
Features of the Mac OS X Desktop

• Under-the-Hood Features of Mac OS X (continued)
  – Built-in Networking Hardware and Software
    • Consumer-level iBooks and iMacs
    • Prosumer- and professional-level PowerBooks and G5s
  – Standard on these systems
    – Ethernet
    – FireWire (IEEE 1394)
    – USB ports
    – AirPort or AirPort Extreme ready
Features of the Mac OS X Desktop

• Under-the-Hood Features of Mac OS X (continued)
  – Built-in Networking Hardware and Software (continued)
    • Can connect to wide variety of peripherals
    • No longer depend on 3rd party network solutions to connect to non-Apple networks
    • Supports PPTP-based VPN
    • Personal File Services for Windows
    • Client for Windows domains
Features of the Mac OS X Desktop

• Under-the-Hood Features of Mac OS X (continued)
  – OS X is Less Vulnerable to Crashes
    • OS X is built on a core operating system known as Darwin
    • Darwin includes a Mack 3.0 kernel, BSD UNIX OS services, high-performance networking facilities, and support for multiple integrated file systems
  – Security
    • Because OS X is based on the UNIX OS security issues are addressed swiftly and transparently
    • Apple contributes to and benefits from community effort

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Features of the Mac OS X Desktop

• Under-the-Hood Features of Mac OS X (continued)
  – Advanced User System Access
    • Terminal access to the system
    • Open-source GCC3.1 compiler and standard UNIX math libraries optimized for latest PowerPC chips
  – Strong Multi-User Support
  – Choose the Hardware Type for the User Level
Features of the Mac OS X Desktop

• Under-the-Hood Features of Mac OS X (continued)
  – True Plug and Play
  – Viruses
  – Mac OS not a major target of viruses
    • Requires an administrator password for software installation
Getting to Know the Mac OS X Workspace

• Changing the System Preferences
  • Personal Preferences
  • Appearance
  • Desktop & Screen Saver
  • Dock
  • Exposé
  • International
  • Security

• Hardware
• Keyboard & Mouse
• Print & Fax
• Sound
• Internet & Network
• Sharing
• System
Managing Files in OS X

• Different Ways of Viewing Files and Folders
  – Icon View
  – List View
  – Column View
  – The Toolbar

• Introduction to Searching with Spotlight
  – A selection-based search system designed to allow the user to quickly locate a wide variety of items on the computer, including documents, pictures, music, applications, System Preferences, as well as specific words in documents and in web pages in a web browser's history or bookmarks. It also allows the user to narrow down searches with creation dates, modification dates, sizes, types and other attributes.
Managing Files in OS X

• Dashboards
  – used for hosting mini-applications known as widgets

• Creating Folders in the Finder
  – File | New Folder
  or
  – Right-click the contents pane and select New Folder
Managing Files in OS X

• Copying, Pasting, and Deleting Files and Folders
  – Copying
    • Select item | Edit | Copy, or
    • Select item and press COMMAND-C
  – Cutting
    • Select item and press COMMAND-X
  – Pasting a copied or cut file
    • In destination folder select Edit | Paste, or
    • In destination folder press COMMAND-V
Managing Files in OS X

• Copying, Pasting, and Deleting Files and Folders (continued)

  – Deleting
    • Select item | Edit | Delete, or
    • Select item and press COMMAND-DELETE
    • Deleting moves file to Trash
      – Select Empty Trash from the Finder menu, or
      – Press COMMAND-SHIFT-DELETE
Managing Files in OS X

• Moving and Renaming Files
  – Move with drag and drop
  – Rename Method 1
    • Select item
    • Click <pause> click
    • Type new name and click outside item or press Return
  – Rename Method 2
    • Select item
    • Finder | File | Get Info
    • Replace name in information window
Managing Files in OS X

Step-by-Step 12.02

Creating a New Folder to Organize Files

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Printing in Mac OS X

• Installing a Printer
  – Select File | Print in any OS X application
  – OS X automatically detects printers and installs drivers
  – Many different printers supported
  – Add printers to Library | Printers and activate
  – Print Center appears during printing
Printing in Mac OS X

Step-by-Step 12.03

Adding a Printer

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Printing in Mac OS X

• Setting Printer Options
  • Copies and Pages
  • Layout
  • Output Options
  • Scheduler
  • Paper Handling
  • ColorSync
  • Cover Page
  • Error Handling
  • Paper Feed
  • HP Image Quality
  • Summary
Printing in Mac OS X

• Where to Find the Print Queue
  – Apple menu | System Preferences | Print & Fax | Setup Printers
    • Double-click on a printer in the Printer List
  – Print Center launches queue during printing
    • Open queue from Printer Setup icon on Dock

• Where to Find Page Setup
  – In application select File | Page Setup
Working with User Accounts and Privileges

• Types of Users and Privileges
  – Administrator Account
    • Appropriate for advanced users and the person who will administer the computer
    • Required to change system preference settings and install software in the main application and library folders
    • Required to create, modify, and delete user accounts
    • Can access the main Library folder
Working with User Accounts and Privileges

• Types of Users and Privileges (continued)
  – Standard Account
    • For ordinary users
    • File access is limited to only the user’s Home folder and the shared folder (/users/shared/)
    • Access is denied to higher-level system preferences:
      – Network settings
      – Sharing
      – Software update settings
      – User setup
      – Date and time settings
Working with User Accounts and Privileges

• Types of Users and Privileges (continued)
  – Super User Account
    • Only appropriate for users familiar with the inner workings of UNIX
    • Complete control over all folders and files
    • Seldom needed and not appropriate for normal software installation or other normal use
Working with User Accounts and Privileges

• Creating User Accounts
  – The first account created during installation has administrator access
  – After installation, that account can create additional accounts
Working with User Accounts and Privileges

Step-by-Step 12.04

Adding a New User

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Troubleshooting Common Mac OS Problems

• Where to Find Help
  – Help with the OS
    • Access Mac Help from the Finder’s Help menu
    • Visit Apple’s support center at www.info.apple.com/support
  – Help Within Applications
    • Help menu within the application
Troubleshooting Common Mac OS Problems

- Useful System Utilities
  - Disk Utility
    - Applications/Utilities/Disk Utility
    - Summary and usage statistics for all volumes attached to the computer
    - Includes Disk First Aid for verifying and repairing a variety of disks
    - Use to erase and partition volumes
Troubleshooting Common Mac OS Problems

• Useful System Utilities (continued)
  – Network Utility
    • Applications/Utilities/Network Utility
    • Identifies the user’s hardware and IP address
    • Provides transfer and other network statistics
    • Performs scans, lookups, and directory searches, including ping, lookup, traceroute, whois, finger, and port scan
# Troubleshooting Common Mac OS Problems

## Keyboard Shortcuts for Troubleshooting

<table>
<thead>
<tr>
<th>Shortcut Function</th>
<th>Shortcut Keys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turn computer ON/OFF</td>
<td>Power key</td>
</tr>
<tr>
<td>Stop a process/cancel</td>
<td>COMMAND-. (period)</td>
</tr>
<tr>
<td>Force an application to quit</td>
<td>COMMAND-OPTION-ESC</td>
</tr>
<tr>
<td>Start computer from CD</td>
<td>Press C during startup</td>
</tr>
</tbody>
</table>
Troubleshooting Common Mac OS Problems

• Issues Caused by Large Files
  – Working with large files on a system with insufficient RAM can lead to massive fragmentation of the hard drive, which can lead to eventual drive failure
  – Take steps to prevent this problem
    • Get enough RAM
    • Purchase a backup solution
    • Make regular backups of all data
    • Optimize hard disk
Troubleshooting Common Mac OS Problems

• Other Backup Options
  – Burn data to a DVD-R disk
  – Purchase and use an external FireWire drive or, on desktop systems, a second internal hard disk
  – Back up files to a workplace LAN
  – Make use of online storage options such as Apple’s iDisk
Troubleshooting Common Mac OS Problems

• Useful System Diagnostic/Repair and Backup Utilities
  – System Works at www.norton.com
  – Drive 10 and TechTool Pro at www.micromat.com
  – Synchronize! Pro X at www.qdea.com
  – Hard Disk Toolkit & Backup Toolkit at www.fwb.com
Chapter Summary

Introducing Apple and the Macintosh Operating System

– Apple sold the first affordable personal computer with a graphical user interface.
– Apple has never licensed its operating system (except briefly and experimentally) to any other company, meaning that the hardware and software of the Mac are a proprietary combination.
– Apple accounts for only a small percentage of personal computer sales in the United States.
Chapter Summary

Introducing Apple and the Macintosh Operating System

– Macs have traditionally been popular with creative professionals, particularly those needing strong graphical and multimedia performance, and the publishing industry.

– Apple computers are well known for ease of use and an attractive graphical user interface.

– There are two distinct Mac operating systems in wide use: Mac OS 9 and Mac OS X. The GUIs are basically comparable and will not be entirely unfamiliar to Windows users.
Chapter Summary

Introducing Apple and the Macintosh Operating System

– Loaded Apple computers these days ship with the software and hardware that allow you to perform a variety of multimedia tasks, including video editing and CD and DVD burning.

– OS 9 software can run on OS X from within a compatibility layer known as Classic.

– OS X is based on a UNIX core and so enjoys greater stability, complies with networking and security standards, and appeals more to system administrators and developers.
Chapter Summary

Introducing Apple and the Macintosh Operating System

– OS X’s graphical user interface is known as Aqua.
– All Macs these days ship with Ethernet, FireWire, and USB ports and are AirPort or AirPort Extreme ready.
– Jaguar, the codename for OS X’s 10.2 build, has vastly improved connectivity support for Windows and other non-Apple servers.
– Panther, the codename for OS X’s 10.3 build was released in October 2003.
Chapter Summary

Introducing Apple and the Macintosh Operating System

– Tiger is the codename for OS X’s 10.4 build, which should be released mid-2005.
– Apple’s UNIX core is known as Darwin and is a product of the open-source development community, with all the advantages that brings.
– OS X offers strong multi-user support.
Chapter Summary

Introducing Apple and the Macintosh Operating System

– OS X comes ready for many common peripherals such as Canon, Epson, and Hewlett-Packard printers.

– Macs tend to be less likely to be affected by computer viruses than Windows computers.
Chapter Summary

Installing and Configuring Mac OS X

– You will need to determine which version of the Mac OS is currently installed. OS 9.1 is the minimum required for an installation of OS X. You may need to upgrade your software.

– Even though Apple's software runs on Apple's proprietary hardware, some hardware configurations will not be sufficient to run OS 9 or OS X. Check to see that your hardware meets the minimum requirements. You may need to upgrade your firmware.
Chapter Summary

Installing and Configuring Mac OS X

- Have your Internet configuration ready before setup. If your Internet connection is a DSL connection, you will need to get your hardware address registered with your Internet service provider. Do this before installation to avoid an interruption in the process.
Chapter Summary

Features of the Mac OS Desktop

– The Mac typically hides back-end operations that its users do not need to know.

– The Finder is the default state and file management interface of the Mac OS.

– The Dock is a key component of OS X.

– Sherlock is the native local file and Internet content search utility of the Mac.

– The Print menus of applications in OS X contain most printing functionality, and the print queue opens automatically during printing as a page of the Printer Setup Utility.
Chapter Summary

Getting to Know the Mac OS X Workspace

– Many OS X system preferences correspond to the earlier OS 9 control panels. Some OS X system preferences incorporate functionality previously found in more than one control panel.

– The Software Update preference is very important because it notifies you when Apple has released important security and functionality updates to your operating system.
Chapter Summary

Managing Files in OS X

– Files and folders may be viewed in three different modes in OS X: Icon view, List view, and Column view. OS 9 has the Icon and List views, does not have Column view, but offers an additional Button view.

– The Sherlock search utility can search local hard disks, the Internet, and even content channels such as news or shopping.
Chapter Summary

Printing in Mac OS X

– Adding printers is typically a simple process in the Mac OS.

– Multiple user accounts for Apple computers are a strong feature of OS X and are simple to manage.

– ColorSync is an important printer setting to configure for those in the design and publishing industries, as it manages color consistently throughout a multifunction workflow process.
Chapter Summary

Working with User Accounts and Privileges

– Mac OS X allows an administrator to configure a Mac so that any number of people may have individual user accounts and private storage space in personal home folders. Each user will also have his or her preferences.

– The first user account in the Mac OS X OS is automatically designated an administrator. If you forget the user name or password for this account, you can use the OS X installation CD to reset the password.
Chapter Summary

Working with User Accounts and Privileges

– The types of user accounts in OS X are administrator, standard account, and super user.

– The administrator account type can change all system preference settings and install software in the main application and library folders.

– The standard user account type can only access files in the user's home folder and in the shared folder (/users/shared/). The super user account type has complete control over all folders and files on the Mac and is seldom needed. Create and manage user accounts through System Preferences | Accounts (or Users).
Chapter Summary

Troubleshooting Common Mac OS Problems

– Pressing COMMAND-OPTION-ESC forces an application to quit.

– Use of software that creates large temporary and other files on a computer with limited RAM causes excessive fragmentation of the hard disk. Solutions are to increase RAM and optimize your hard drive a couple of times a year.