Computer Software: Systems and Application Software

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Why Learn About Software?

- Software is indispensable for any computer system
- Systems software needed for input, calculations, and output
- Application software aids in productivity
- Personal tasks using software
  - Income tax preparation
  - Keeping a budget
  - Internet research
  - Games

Systems Software

- **Systems software:** coordinates the activities and functions of hardware and programs
- **Computer system platform:** combination of a hardware configuration and systems software

Application Software

- **Application software:** helps users solve particular problems
- In most cases, application software resides on the computer's hard disk
- Application software can also be stored on CDs, DVDs, and flash or keychain storage devices

Installing and Removing Software for PCs

- Before you can use software, it must be installed on a computer
- Software for personal computers typically comes on CDs or is downloaded from the Web
- Most operating systems have an add/remove program feature for removing software
  - Does not work with all software
  - Does not always remove all elements of the software

Systems Software

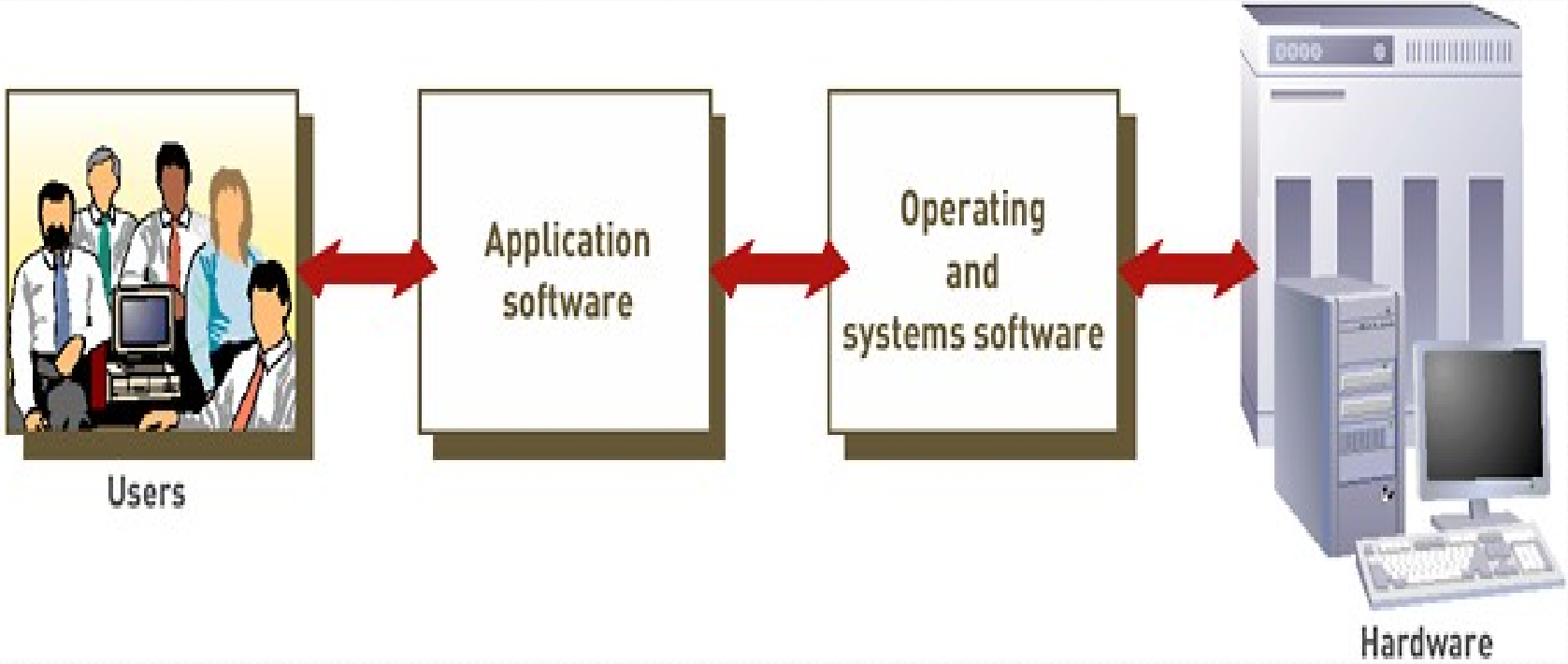
- Systems software
  - Controls operations of computer hardware
  - Supports application programs' problem-solving capabilities
- Types of systems software
  - Operating systems
  - Utility programs
  - Middleware

Operating Systems (continue)

- **Operating system (OS):** set of programs that controls the computer hardware and acts as an interface with application programs
- **Kernel:** ties all components of the OS together and regulates other programs

Operating Systems

The role of Systems Software –interface between users, application software and hardware



Current Operating Systems(continue)

Personal	Workgroup	Enterprise
Windows Vista, Windows XP, Windows Mobile, and Windows Embedded	Windows NT Server	Windows NT Server
Mac OS	Windows 2003 Server	Windows 2003 Server
Mac OS X	Mac OS Server	Windows Advanced Server, Limited Edition
UNIX	UNIX	UNIX
Solaris	Solaris	Solaris
Linux	Linux	Linux
Red Hat Linux	Red Hat Linux	Red Hat Linux
Palm OS	Netware	
	IBM OS/390	IBM OS/390
	IBM z/OS	IBM z/OS
	HP MPE/iX	HP MPE/iX

Current Operating Systems (continue)

- Microsoft PC operating systems
  - PC-DOS and MS-DOS: early, command-driven OSs
  - Windows XP: greatly improved stability and security over previous versions of Windows
  - Windows XP N: for European market
  - Windows XP Professional X64: for computers with newer 64-bit capabilities
  - Windows XP Media Center Edition: incorporates additional multimedia features
  - Vista: latest version of Windows

Current Operating Systems (continue)

- Apple operating systems
  - Often provide cutting edge tools in graphics and music not available from Microsoft
  - Mac OS X
    - Jaguar (OS X.2)
    - Panther (OS X.3)
    - Tiger (OS X.4): support for 64-bit computing, Dashboard, Spotlight, etc.

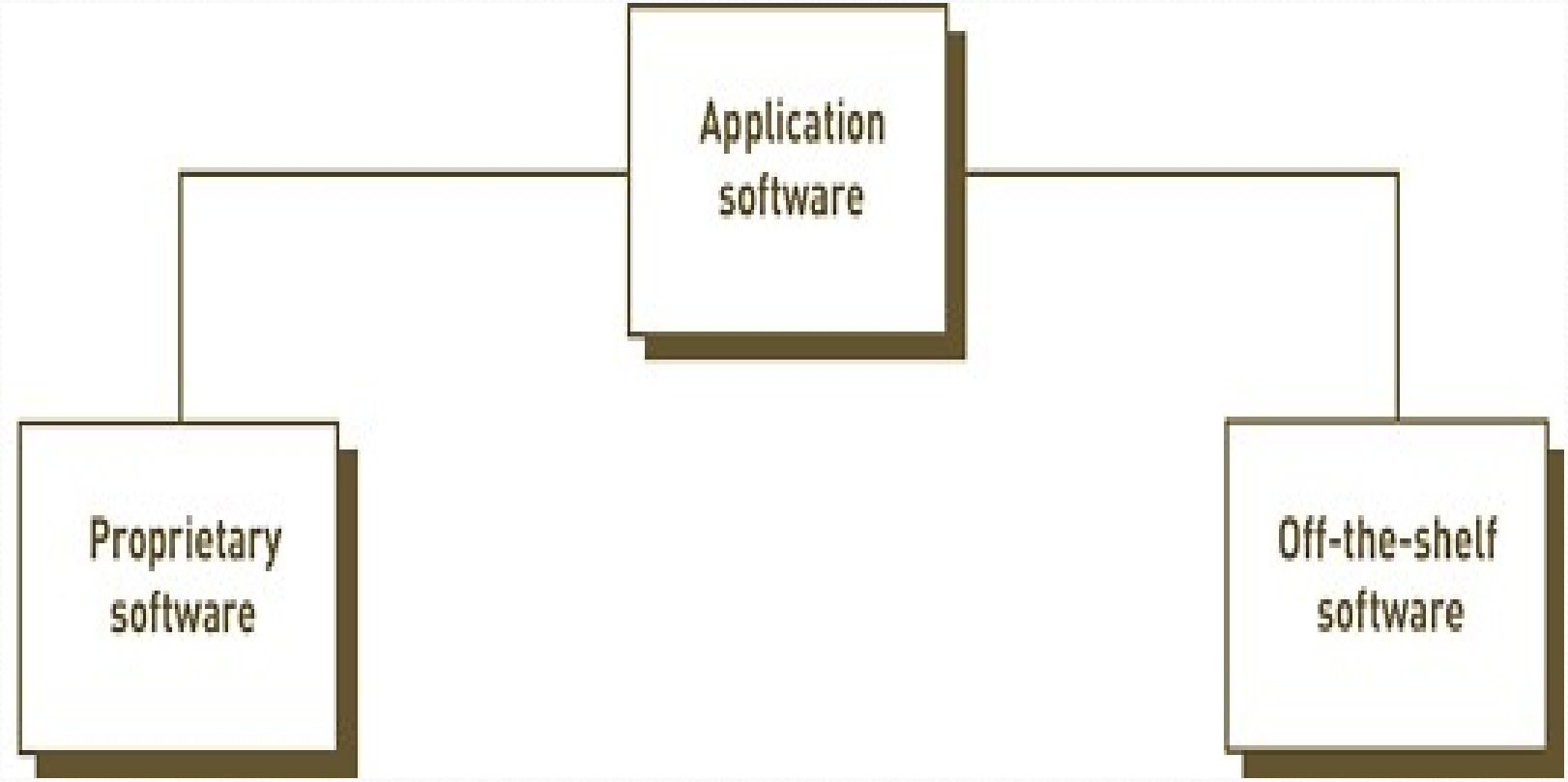
Current Operating Systems

- Linux
  - Developed by Linus Torvalds in 1991
  - Open-source product
  - Only the kernel of an OS
  - Several distributions available with capabilities/applications that form a complete OS
    - Examples: Red Hat Linux, Caldera OpenLinux

Application Software

- Primary function is to apply the power of the computer to give individuals, workgroups, and the entire enterprise the ability to solve problems and perform specific tasks
- Application programs interact with systems software; systems software then directs computer hardware to perform the necessary tasks

Overview of Application Software



Personal Application Software(continue)

- Serves the needs of an individual user
- Includes personal productivity software
  - Enables users to improve their personal effectiveness

Personal Application Software (continue)

Type of Software	Explanation	Example	Vendor
Word processing	Create, edit, and print text documents	Word WordPerfect	Microsoft Corel
Spreadsheet	Provide a wide range of built-in functions for statistical, financial, logical, database, graphics, and date and time calculations	Excel Lotus 1-2-3	Microsoft Lotus/IBM
Database	Store, manipulate, and retrieve data	Access Approach dBASE	Microsoft Lotus/IBM Borland
Online information services	Obtain a broad range of information from commercial services	America Online MSN	America Online Microsoft
Graphics	Develop graphs, illustrations, and drawings	Illustrator FreeHand	Adobe Macromedia

Personal Application Software

Project management	Plan, schedule, allocate, and control people and resources (money, time, and technology) needed to complete a project according to schedule	Project for Windows On Target Project Schedule Time Line	Microsoft Symantec Scitor Symantec
Financial management	Provide income and expense tracking and reporting to monitor and plan budgets (some programs have investment portfolio management features)	Managing Your Money Quicken	Meca Software Intuit
Desktop publishing (DTP)	Use with personal computers and high-resolution printers to create high-quality printed output, including text and graphics; various styles of pages can be laid out; art and text files from other programs can also be integrated into "published" pages	QuarkXPress Publisher PageMaker Ventura Publisher	Quark Microsoft Adobe Corel
Creativity	Generate innovative and creative ideas and problem solutions. The software does not propose solutions, but provides a framework conducive to creative thought. The software takes users through a routine, first naming a problem, then organizing ideas and "wishes," and offering new information to suggest different ideas or solutions	Organizer Notes	Macromedia Lotus

Workgroup Application Software

Quality	Description
Convenient	If it's too hard to use, it's not used; it should be as easy to use as the telephone.
Content	It must provide a constant stream of rich, relevant, and personalized content.
Coverage	If it isn't close to everything you need, it might never be used.

Enterprise Application Software

Accounts receivable	Sales ordering
Accounts payable	Order entry
Airline industry operations	Payroll
Automatic teller systems	Human resource management
Cash-flow analysis	Check processing
Credit and charge card administration	Tax planning and preparation
Manufacturing control	Receiving
Distribution control	Restaurant management
General ledger	Retail operations
Stock and bond management	Invoicing
Savings and time deposits	Shipping
Inventory control	Fixed asset accounting

Programming Languages

- Sets of keywords, symbols, and a system of rules for constructing statements by which humans can communicate instructions to be executed by a computer
- Different languages have different characteristics
- **Syntax:** a set of rules associated with a programming language

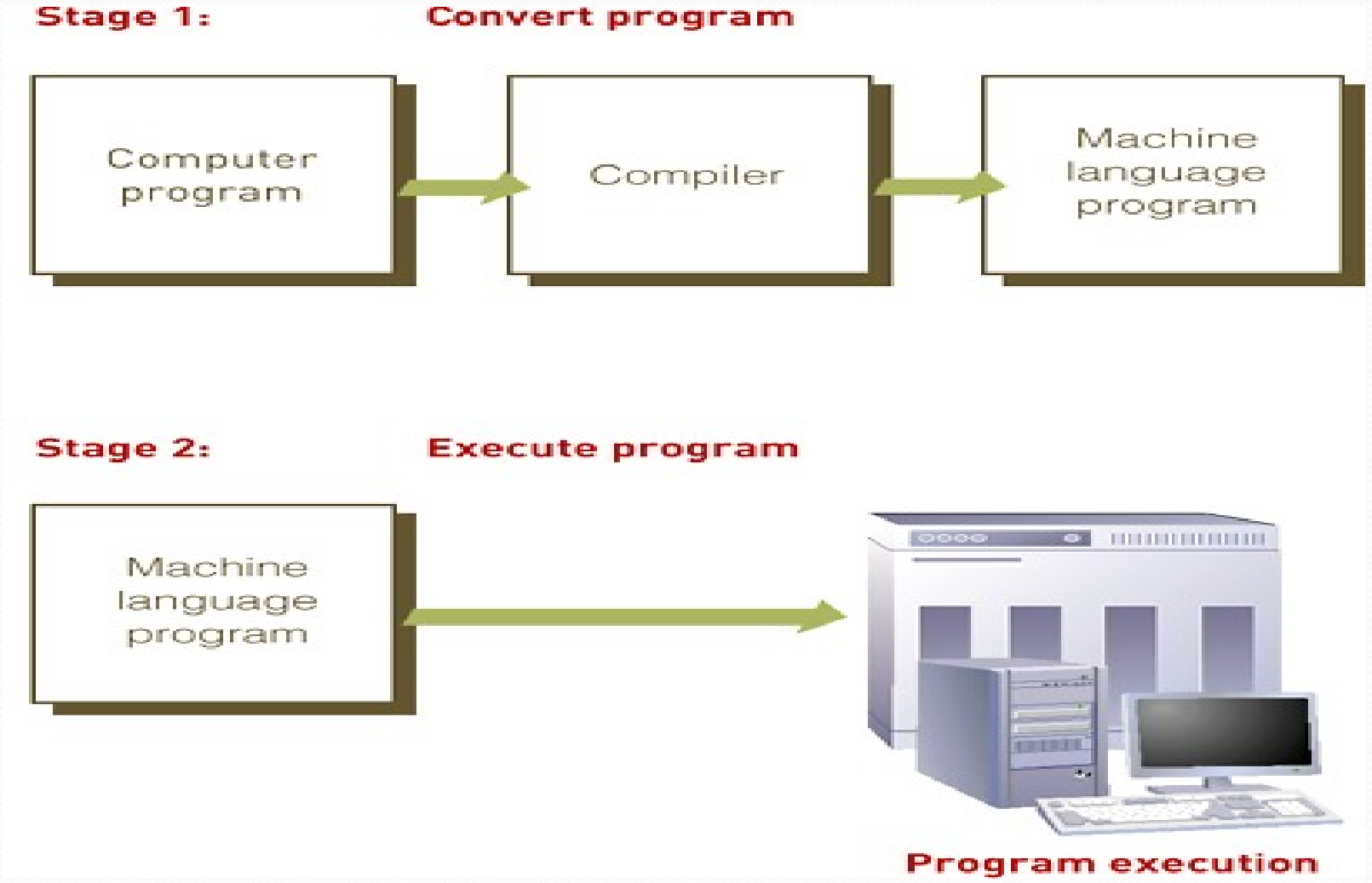
The Evolution of Programming Languages(continue)

Generation	Language	Approximate Development Date	Sample Statement or Action
First	Machine language	1940s	00010101
Second	Assembly language	1950s	MVC
Third	High-level language	1960s	READ SALES
Fourth	Query and database languages	1970s	PRINT EMPLOYEE NUMBER IF GROSS PAY>1000
Beyond Fourth	Natural and intelligent languages	1980s	IF gross pay is greater than 40, THEN pay the employee overtime pay.

The Evolution of Programming Languages (continue)

- Visual, object-oriented, and artificial intelligence languages are easier for nonprogrammers to use than older generation languages
- Visual languages use a graphical or visual interface for program development
- Object-oriented programming languages are based on objects
- **Compiler:** a special software program that converts programmer's source code into machine-language instructions consisting of binary digits

The Evolution of Programming Languages



Software Bugs

- **Software bug:** defect in a computer program that keeps it from performing as it is designed to perform
- Tips for reducing impact of software bugs
  - Register all software so that you can receive bug alerts, fixes, and patches
  - Check the manual or read-me files for work-arounds
  - Access support area of the manufacturer's Web site for patches
  - Install the latest software updates

Copyrights and Licenses

- Most software products are protected by law using copyright or licensing provisions
  - In some cases, you are given unlimited use of software on one or two computers
  - In other cases, you pay for your usage—if you use the software more, you pay more
- Some software now requires that you *register* or *activate* it before it can be fully used

Open-Source Software(continue)

- **Open-source software:** software freely available to anyone in a form that can be easily modified
- Some widely used open-source software packages: Linux OS, Free BSD, Apache, Sendmail, Perl
- Open-source software is often *more* reliable and secure than commercial software
- Open-source systems can contain hidden costs, particularly for user support or solving problems with the software

Open-Source Software

Software Type	Example
Operating system	Linux
Application software	Open Office
Database software	MySQL
Internet browser	Firefox
Internet messaging	Jabber

Software Upgrades

- Software companies revise their programs and sell new versions periodically
- Revised software may or may not offer any major additional capabilities
- Revised software can contain bugs or errors
- Software upgrades usually cost much less than the original purchase price

Conclusion

Although there are different types of Computer Software. These software use in different sectors. Their operating process is also different. Some types of Software works Graphically, some works on Database Management System, some on Word Processors etc. Day by day softwares are upgrating.

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Thank You