Introduction to Management Information Systems

Software

Computer Systems

Learning objectives

- explain the purpose of software applications in different categories;
- describe the features found in a variety of modern applications software packages;
- identify some of the advantages and disadvantages associated with a variety of common applications;
- describe some of the ways in which applications software supports the activities of a business organization.

1. make a list of things that your OS does

- what operating system (OS) do you have on your device?
  - what exactly does this do?

2. make a list of apps and what they do / are

- what application software (apps) do you have on your device?
  - what are these?
  - e.g. social network, financial app, calendar, clock, etc.

Information System

1. people
2. hardware
3. software
4. communications
5. data

what is software?

a series of detailed electronic instructions

- that tell the computer how to perform a task
- that control the operation of a computer system
- translated into binary instructions (0s & 1s) for the processor
- form programs which are developed by computer programmers

system software
and
application software

System Software

System Software

serves as the interface between

- the user,
- the application software,
- and the computer's hardware

system software

consists of the programs that control or maintain the operations of the computer and its devices

- Operating systems (OS)
  - system management
- Utility programs
  - system maintenance

operating system

“a set of programs containing instructions that work together to coordinate all the activities among computer hardware resources”

operating system

- Start and shut down a computer
- Provide a user interface
- Manage programs
- Manage memory
- Coordinate tasks
- Configure devices
- Establish an Internet connection
- Monitor performance
- Provide utilities
- Automatically update
- Control a network
- Administer security

operating system

others:

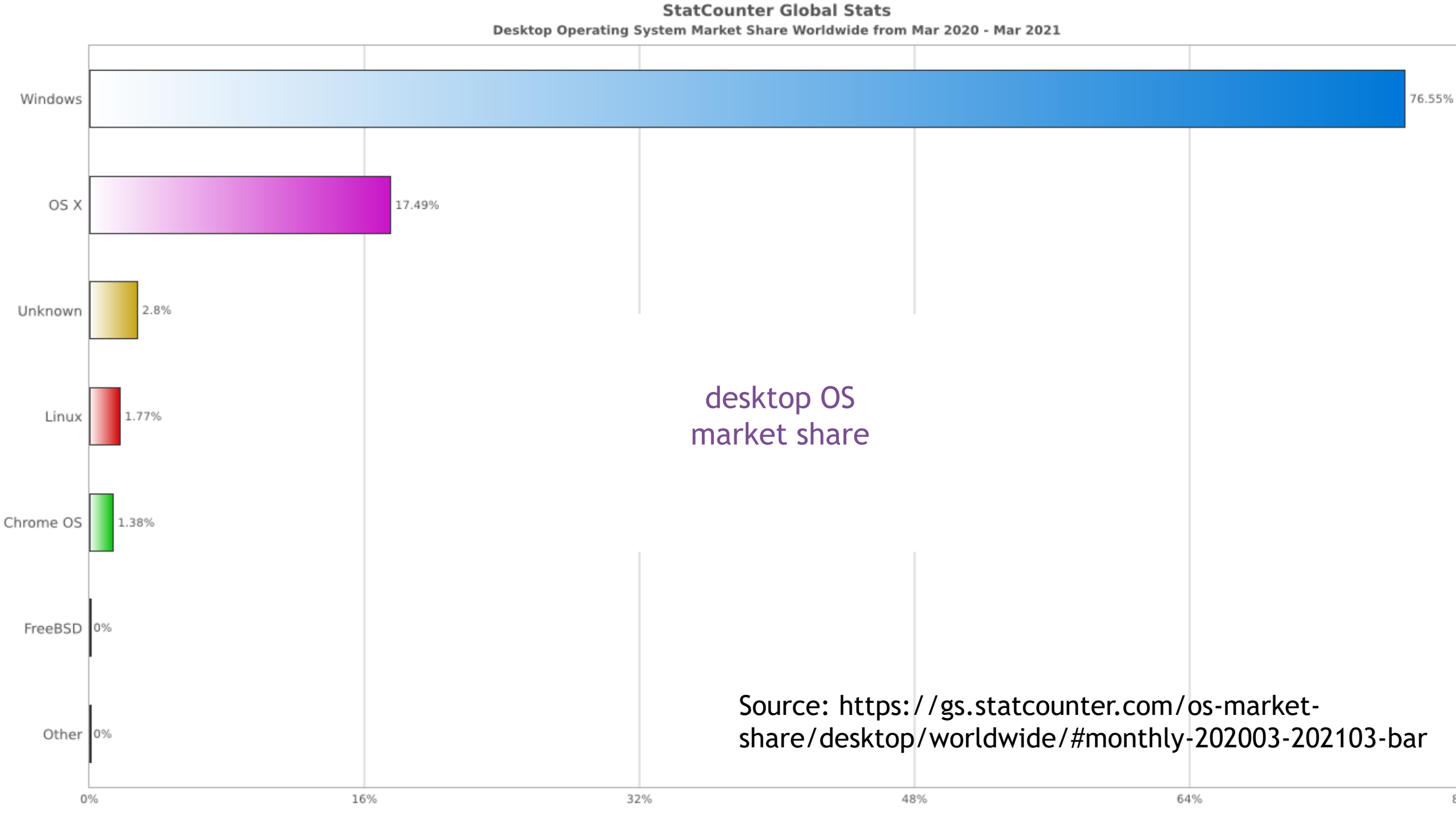
handle input data and instructions

perform file management

control access to storage

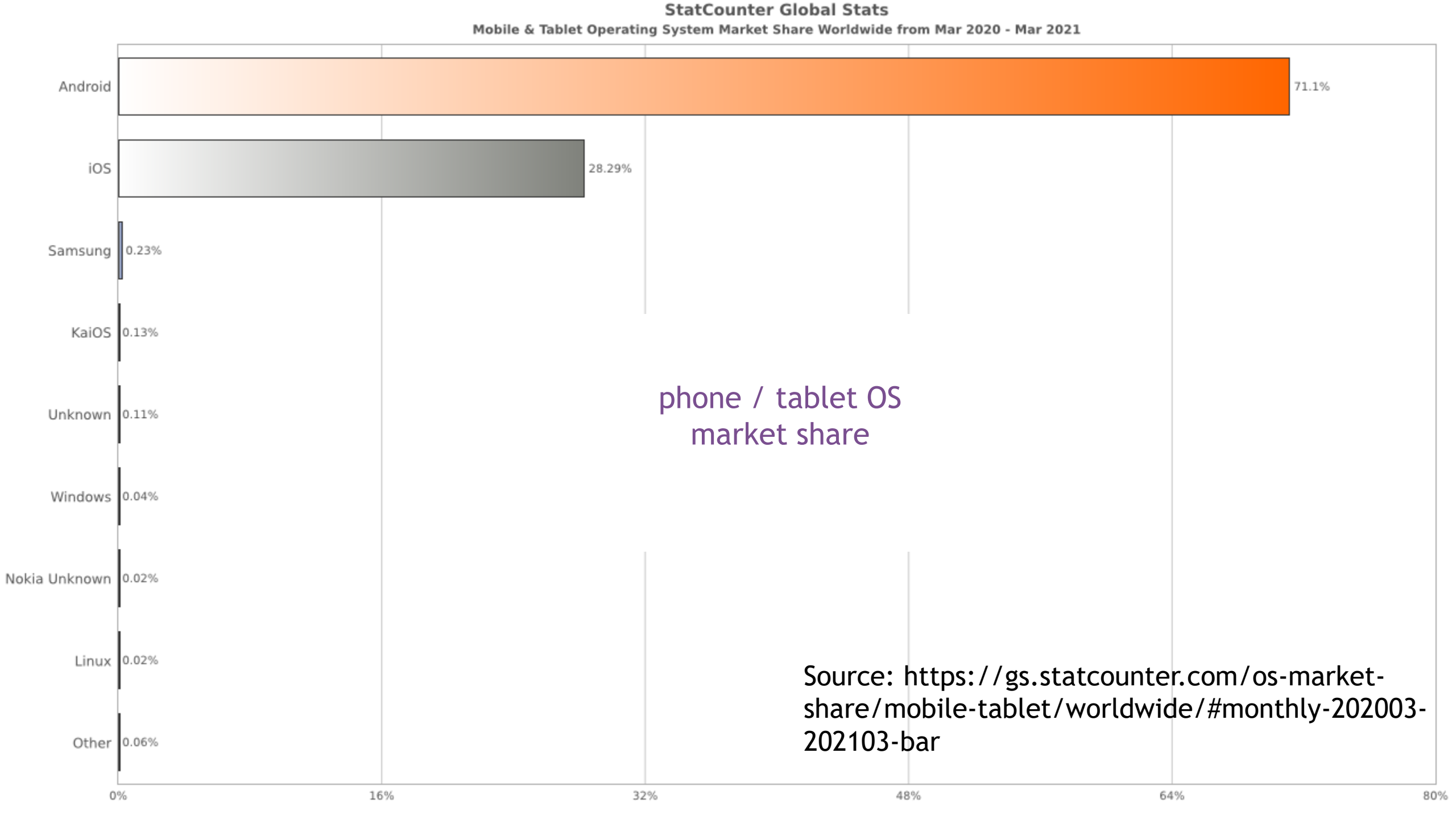
manage devices (e.g. printers)

deal with errors, e.g. displaying error messages



desktop OS
market share

Source: https://gs.statcounter.com/os-market-share/desktop/worldwide/#monthly-202003-202103-bar



phone / tablet OS market share

Source: https://gs.statcounter.com/os-market-share/mobile-tablet/worldwide/#monthly-202003-202103-bar

network system software

network OS

- runs on a server
- gives the server the capability to manage
  - data, users, groups,
  - security, applications, and
  - other networking functions.
- allow shared file and printer access among multiple computers
- e.g. Windows Server & Novell's Netware

network system software

advantages

- highly stable
- security
- easy to upgrade
- remote access

disadvantages

- high cost
- reliance on central system
- needs regular maintenance & upgrades

utility programs

"allows a user to perform maintenance-type tasks"

Virus protection

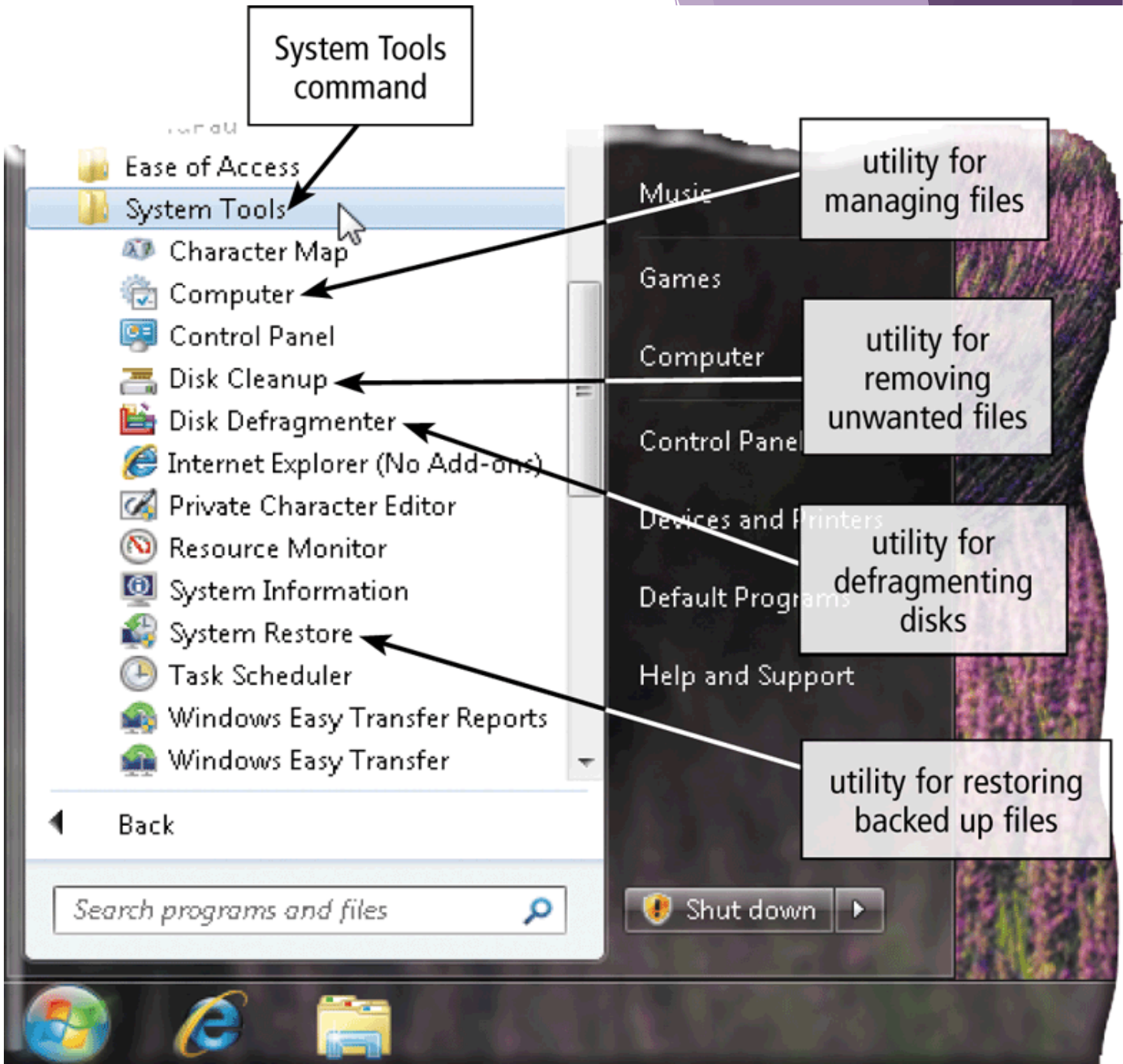
Data compression

File defragmentation

Disk scanner & disk cleanup

Backup

Data recovery



Application Software

Application software consists of programs designed to make users more productive and/or assist with personal tasks

- To make business activities more efficient
- To assist with graphics and multimedia projects
- To support home, personal, and educational tasks
- To facilitate communications

Creating Files

- Document files using word processing
- Worksheet files using spreadsheets
- Database files using database management programs (DBMS)

Business Software

Business software is application software that assists people while performing business activities

Word Processing	Spreadsheet	Database	Presentation
Note Taking	Personal Information Manager	Business Software for Phones	Business Software Suites
Project Management	Accounting	Document Management	Enterprise Computing Software

Application Software

Business

- Word Processing
- Spreadsheet
- Database
- Presentation
- Note Taking
- Personal Information Manager (PIM)
- Business Software for Phones
- Business Software Suite
- Project Management
- Accounting
- Document Management
- Enterprise Computing

Graphics and Multimedia

- Computer-Aided Design (CAD)
- Desktop Publishing (for the Professional)
- Paint/Image Editing (for the Professional)
- Photo Editing (for the Professional)
- Video and Audio Editing (for the Professional)
- Multimedia Authoring
- Web Page Authoring

Home/Personal/Educational

- Software Suite (for Personal Use)
- Personal Finance
- Legal
- Tax Preparation
- Desktop Publishing (for Personal Use)
- Paint/Image Editing (for Personal Use)
- Photo Editing and Photo Management (for Personal Use)
- Clip Art/Image Gallery
- Video and Audio Editing (for Personal Use)
- Home Design/Landscaping
- Travel and Mapping
- Reference and Educational
- Entertainment

Communications

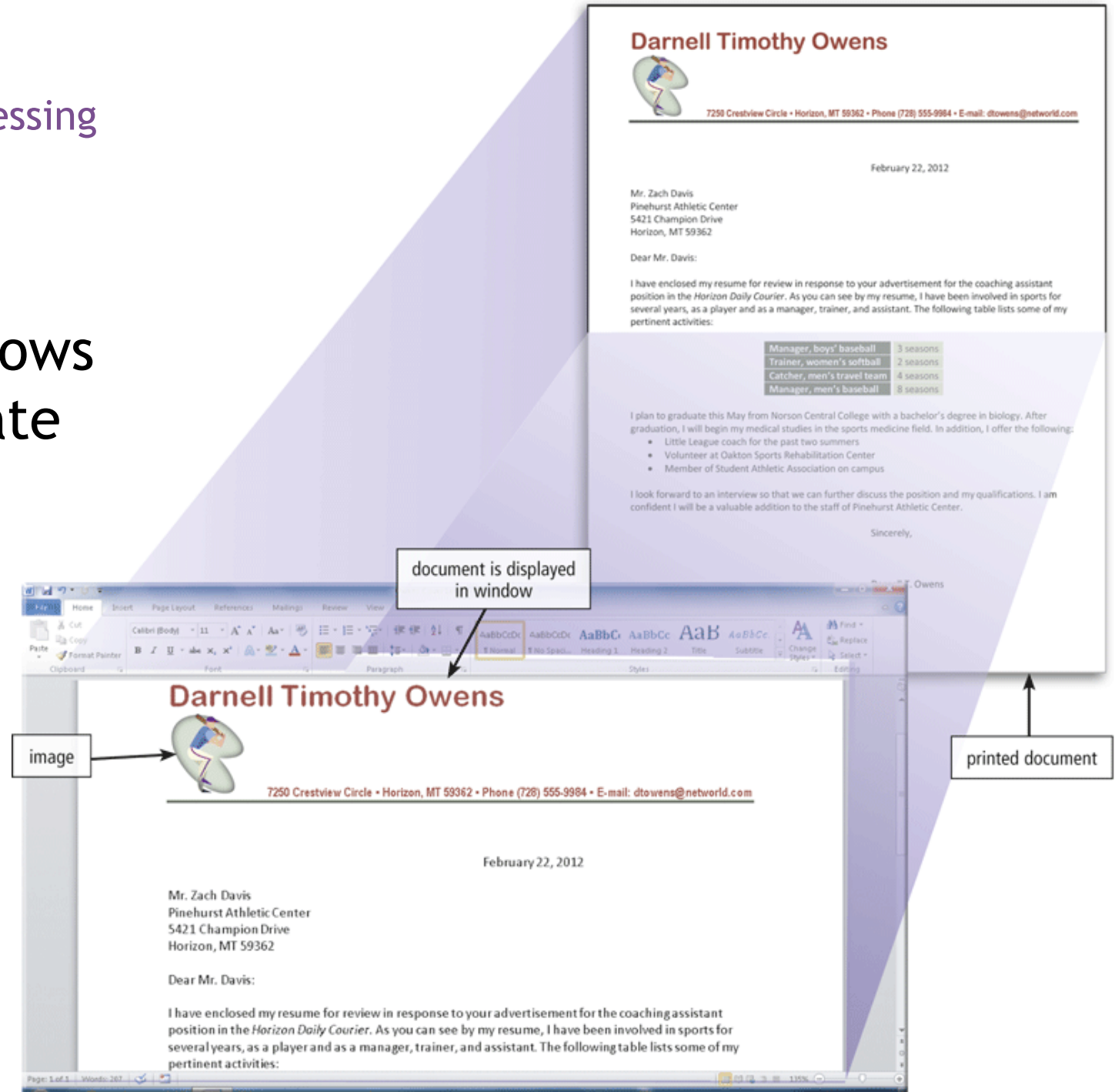
- Web Browser
- RSS Aggregator
- E-Mail
- Blogging
- Instant Messaging
- Newsgroup/Message Board
- Chat Room
- FTP
- Text, Picture, Video Messaging
- VoIP
- Video Conferencing

Exchanging files

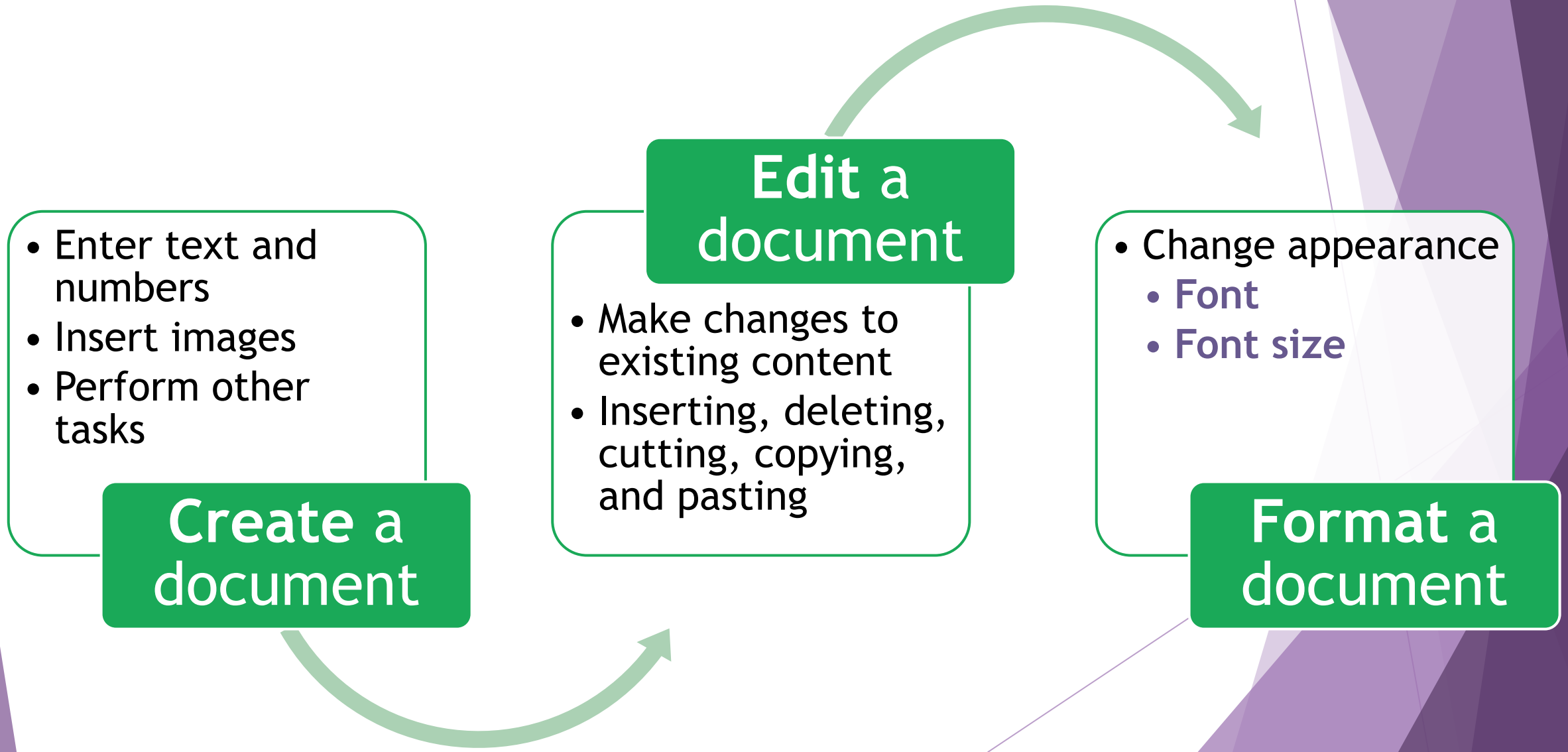
- Importing: getting data from another source and then converting it into a compatible format
- Exporting: transforming data into a format that can be used in another program

Word Processing

Word processing software allows users to create and manipulate documents



Word Processing



Formatting

- Font
  - The typeface, size, and color of the text you use
  - Also lets you specify underlined, italic, or bold
- Spacing & Columns
  - Choose the line spacing (single- or double-spaced, or other)
  - Choose single-column or multi-columned text for your document
- Margins & Justification
  - Indicate width of left, right, top, and bottom margins
  - Justify text left, right, or center

Word Processing

Headers, footers, page numbers

- A header is text printed at the very top of the page
- A footer is text (like page number) at the page bottom

Other Formatting

- You can specify borders, shading, tables, and footnotes
- You can also import graphics, such as clip art

Default Settings

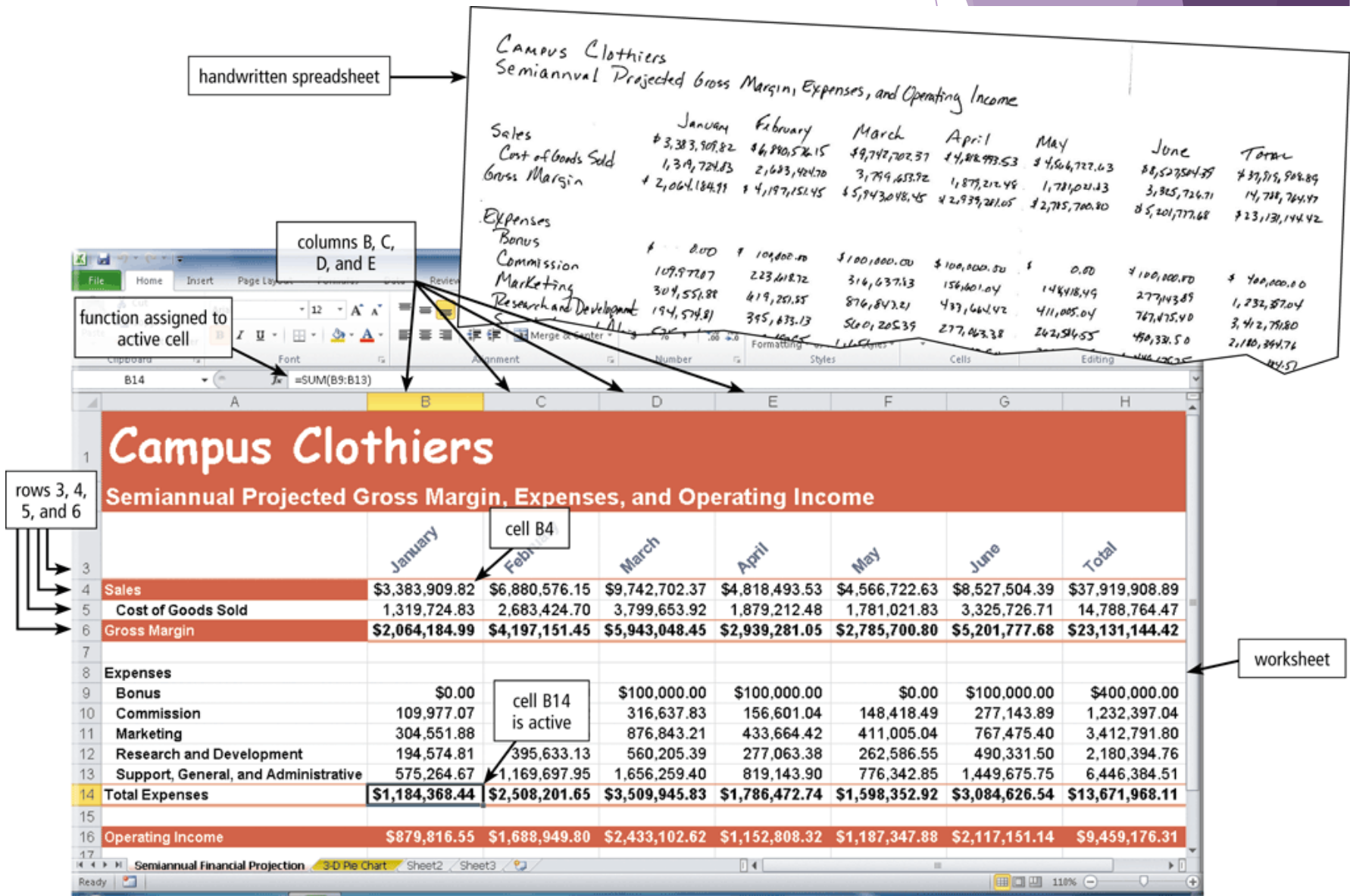
- These are the settings automatically used by the program unless you change them

word processing features

AutoCorrect	AutoFormat	Collaboration	Columns	Grammar Checker
Ink Input	Macros	Mail Merge	Reading Layout	Research
Search and Replace	Smart Tags	Tables	Templates	Thesaurus
	Tracking Changes	Voice Recognition	Web Page Development	

Business Software

Spreadsheet software allows users to organize data in rows and columns and perform calculations



		January	February	March	April	May	June	Total
4	Sales	$3,383,909.82	$6,880,576.15	$9,742,702.37	$4,818,493.53	$4,566,722.63	$8,527,504.39	$37,919,908.89
5	Cost of Goods Sold	1,319,724.83	2,683,424.70	3,799,653.92	1,879,212.48	1,781,021.83	3,325,726.71	14,788,764.47
6	Gross Margin	$2,064,184.99	$4,197,151.45	$5,943,048.45	$2,939,281.05	$2,785,700.80	$5,201,777.68	$23,131,144.42
7								
8	Expenses							
9	Bonus	$0.00		$100,000.00	$100,000.00	$0.00	$100,000.00	$400,000.00
10	Commission	109,977.07		316,637.83	156,601.04	148,418.49	277,143.89	1,232,397.04
11	Marketing	304,551.88		876,843.21	433,664.42	411,005.04	767,475.40	3,412,791.80
12	Research and Development	194,574.81	395,633.13	560,205.39	277,063.38	262,586.55	490,331.50	2,180,394.76
13	Support, General, and Administrative	575,264.67	1,169,697.95	1,656,259.40	819,143.90	776,342.85	1,449,675.75	6,446,384.51
14	Total Expenses	$1,184,368.44	$2,508,201.65	$3,509,945.83	$1,786,472.74	$1,598,352.92	$3,084,626.54	$13,671,968.11
15								
16	Operating Income	$879,816.55	$1,688,949.80	$2,433,102.62	$1,152,808.32	$1,187,347.88	$2,117,151.14	$9,459,176.31

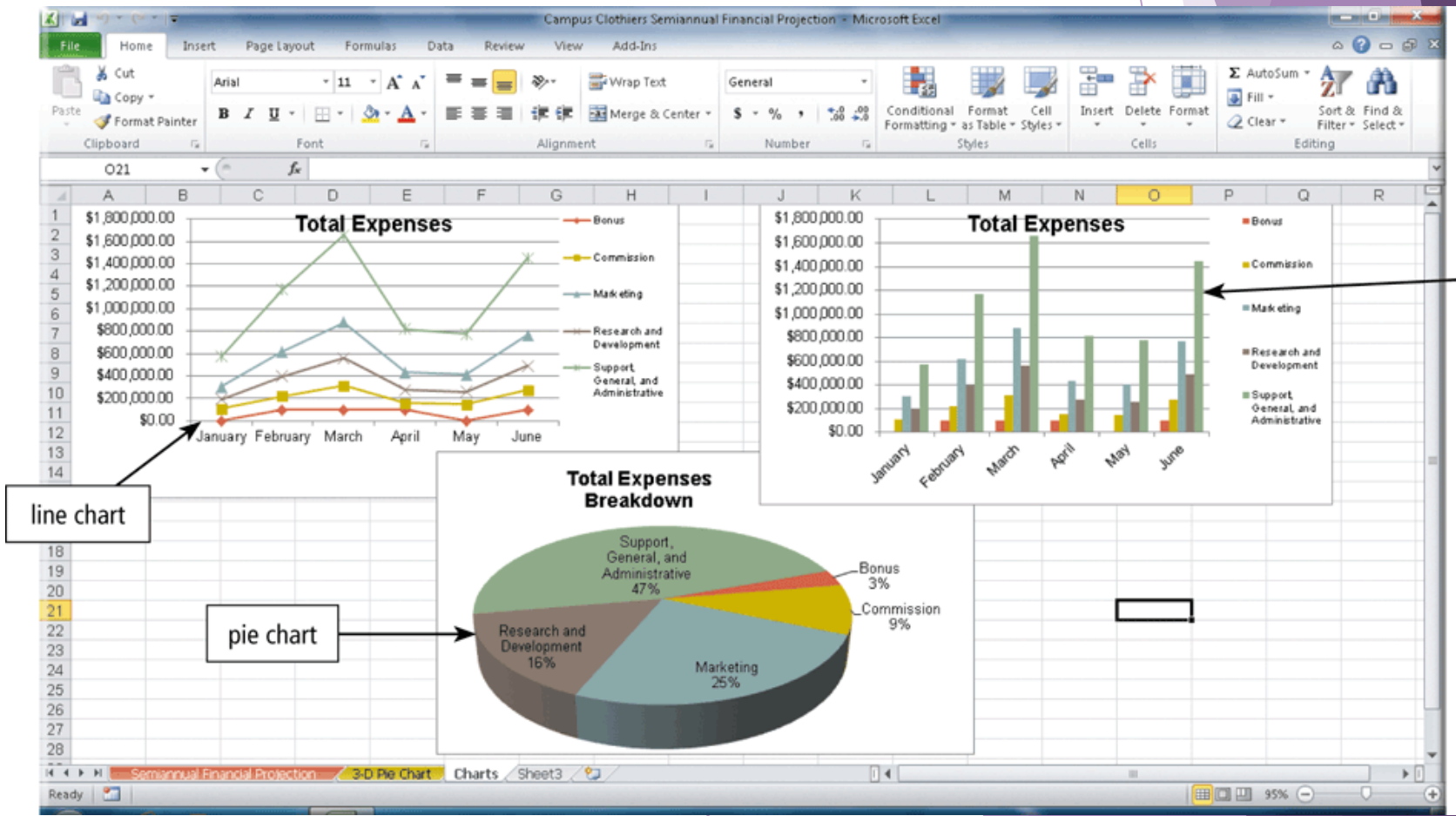
Spreadsheets

Organized into columns and rows on a worksheet

- Labels are descriptive text
- Cells are where a row and a column meet
- Cell address is the position of the cell
- Range is a group of adjacent cells
- Values are numbers or dates entered into a cell
- Cell pointer shows where data is to be entered

Charting depicts data in a spreadsheet in graphical form

- Column,
- Bar,
- Pie &
- Scatter charts, and
- Line graphs



spreadsheets

A function is a predefined formula that performs common calculations

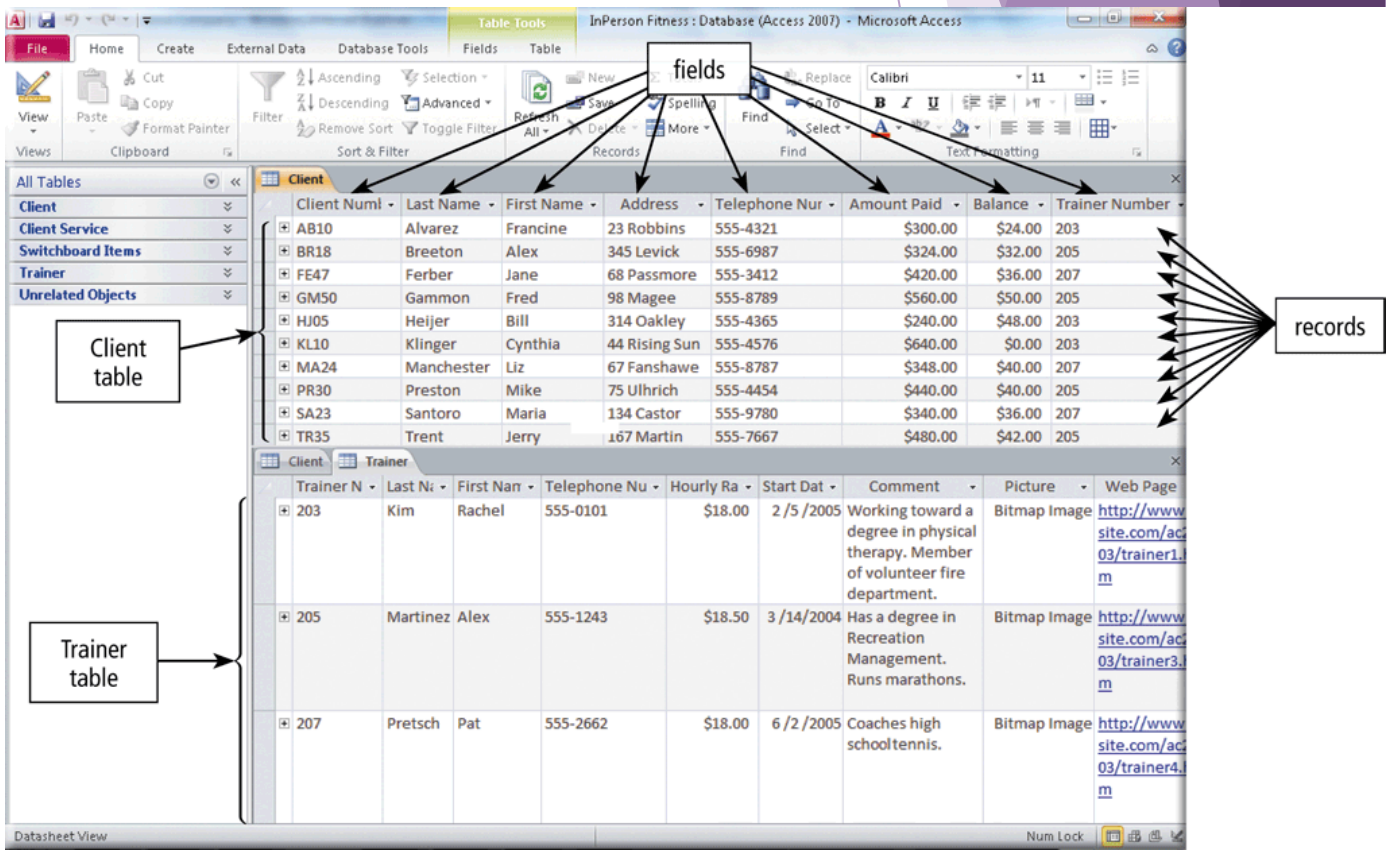
FV	NPV	PMT	PV	RATE	DATE
NOW	TIME	ABS	INT	LN	LOG
ROUND	SQRT	SUM	AVERAGE	COUNT	MAX
MIN	STDEV	IF			

Business Software

A database is a collection of data organized in a manner that allows access, retrieval, and use of that data

Database software allows users to

- create,
- access, and
- manage a database



Database Software

Relational database:

data organized into related tables

- rows (records) & columns (fields)
- Primary key is field used to identify records (e.g. student ID)
- Keys are field used to index data
- Query to display records

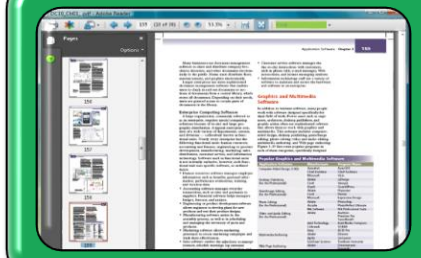
Business Software

Presentation software allows users to create visual aids for presentations to communicate ideas, e.g. PowerPoint

Business Software

Project management software allows a user to plan, schedule, track, and analyze the events, resources, and costs of a project

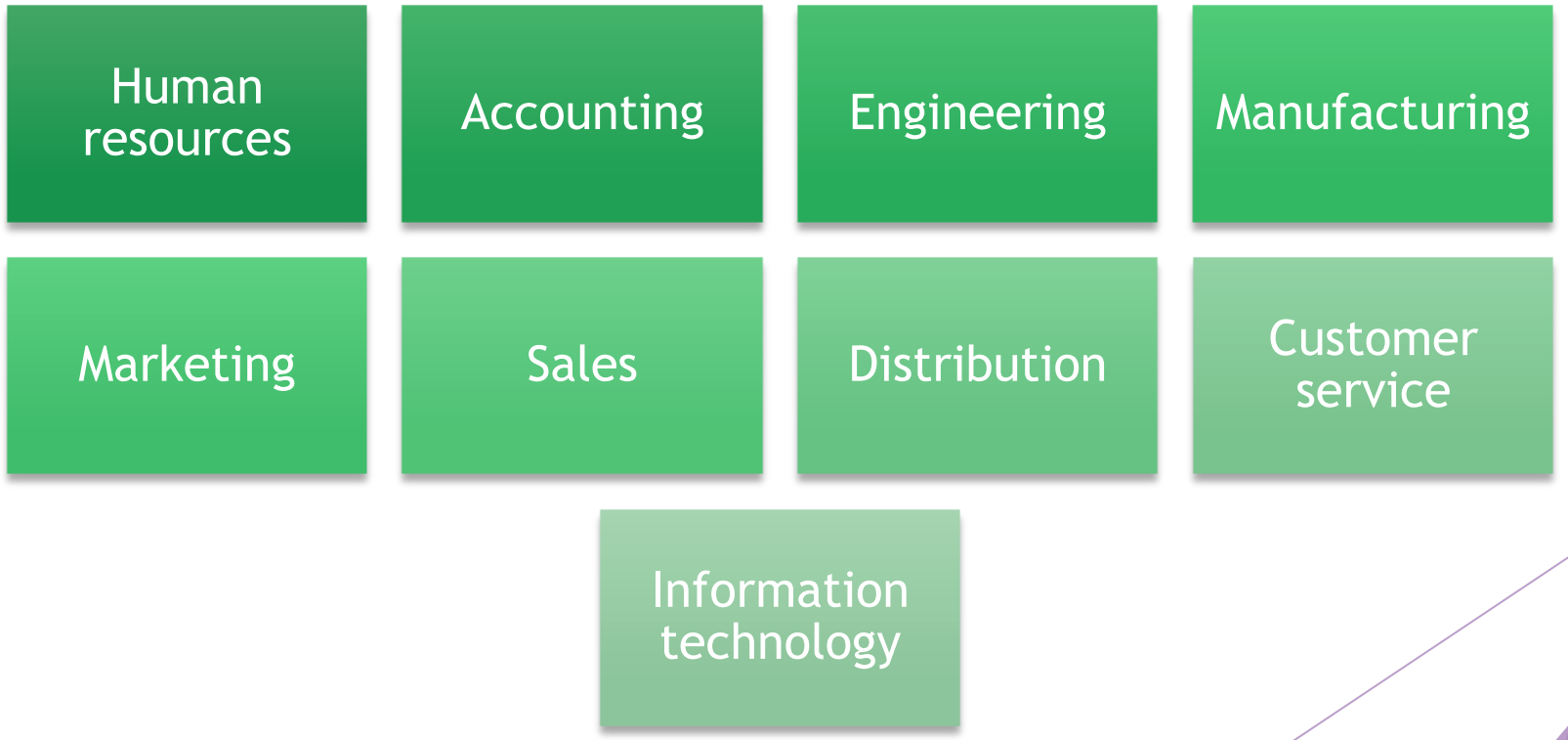
Accounting software helps companies record and report their financial transactions



Document management software provides a means for sharing, distributing, and searching through documents by converting them into a format that can be viewed by any user

Business Software

Enterprises typically require special computing solutions for various functional units



Specialty Software

Portable Document Format (PDF)

- A file format
- developed by Adobe Systems
- text, graphic, and formatting information
- from variety of applications on different platforms,
- used extensively on web

Specialty Software

Graphic File Formats

- .jpeg (Joint Photographic Experts Group) – images
- .png (Portable Network Graphics) – icons, transparency
- .gif (Graphic Interchange Format) – animation
- .bmp (bit-map)
- .tiff (Tagged Image File Formats) –high-resolution images to print

Popular Graphics and Multimedia Software

Application Software	Manufacturer	Program Name
Computer-Aided Design (CAD)	Autodesk	AutoCAD
	Chief Architect	Chief Architect
	Microsoft	Visio
Desktop Publishing (for the Professional)	Adobe	InDesign
	Corel	Ventura
	Quark	QuarkXPress
Paint/Image Editing (for the Professional)	Adobe	Illustrator
	Corel	Painter
	Microsoft	Expression Design
Photo Editing (for the Professional)	Adobe	Photoshop
	Arcadia	PhotoPerfect Ultimate
	Nik Software	Nik Professional Suite
Video and Audio Editing (for the Professional)	Adobe	Audition Premiere Pro Soundbooth
	Avid Technology	Avid Media Composer
	Cakewalk	SONAR
	Sony	ACID Pro
Multimedia Authoring	Adobe	Director
	Agilix	GoCourse
	SumTotal Systems	ToolBook Instructor
Web Page Authoring	Adobe	Dreamweaver Fireworks Flash
	Microsoft	Expression Web SharePoint Designer

Graphics and Multimedia Software

Graphics and Multimedia Software

Computer-aided design (CAD) software

Desktop publishing software

Paint/Image editing software

Graphics and Multimedia Software

Professional photo editing software

Video and audio editing software

Multimedia authoring software

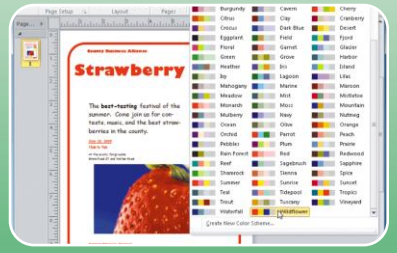
Software for Home, Personal, and Educational Use

Personal finance software

Legal software

Tax preparation software

Software for Home, Personal, and Educational Use

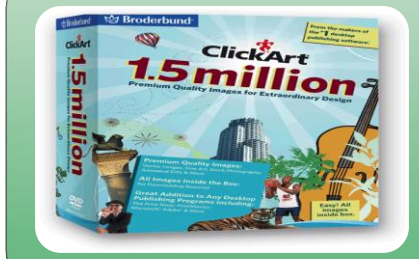


Personal DTP software

Personal paint/image editing software

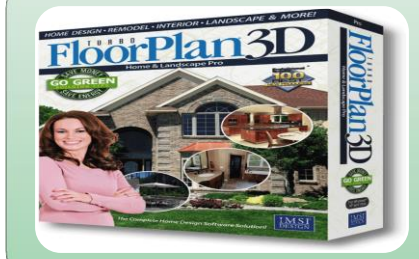
Personal photo editing software

Software for Home, Personal, and Educational Use



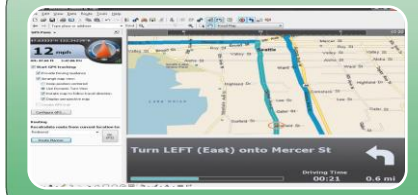
Clip art/image gallery

Video and audio editing software

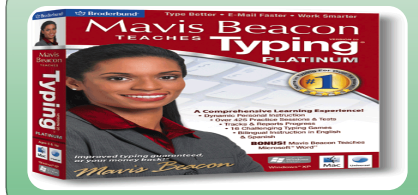


Home design/landscaping software

Software for Home, Personal, and Educational Use



Travel and mapping software



Reference software

Educational software

Entertainment software

Web Applications

allows users to access and interact with software

from any computer or device

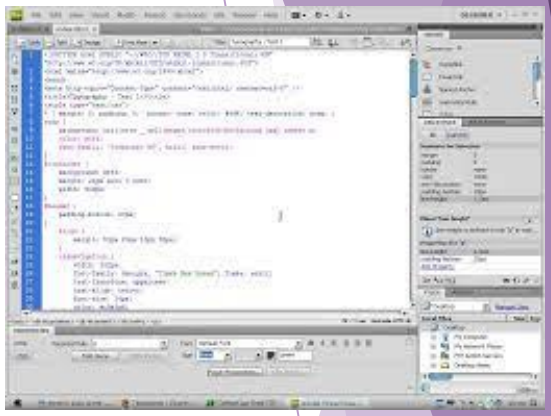
that is connected to the Internet

Popular Web Applications

Program Name	Type of Application Software
Britannica.com	Reference
Dictionary.com	Reference
Flickr	Photo Editing and Photo Management
Gmail	E-Mail
Google Docs	Productivity Suite
Google Earth	Travel and Mapping
Google Maps	Travel and Mapping
MSN Encarta	Reference
Office Web Apps	Productivity Suite
Photoshop Express	Photo Editing
Picnik	Photo Editing
TaxACT Online	Tax Preparation
TurboTax Online	Tax Preparation
Windows Live Calendar	Personal Information Manager
Windows Live Hotmail	E-Mail
YouSendIt	File Transfer and E-Mail

Application Software for Communications

- Web Browser
- E-Mail
- Instant Messaging
- Chat Room
- Text, Picture, Video Messaging
- RSS Aggregator
- Blogging
- Newsgroup/ Message Board
- FTP
- VoIP
- Video Conferencing



Ps

web browser software

- Mozilla Firefox
- Google Chrome
- Safari
- Opera
- Microsoft Edge
- Others e.g. duckduckgo, tor, ecosia

web 2.0

‘social web’

user-generated content

Technologies:

- e.g., wikis, blogs, podcasts, self-publishing

Communication:

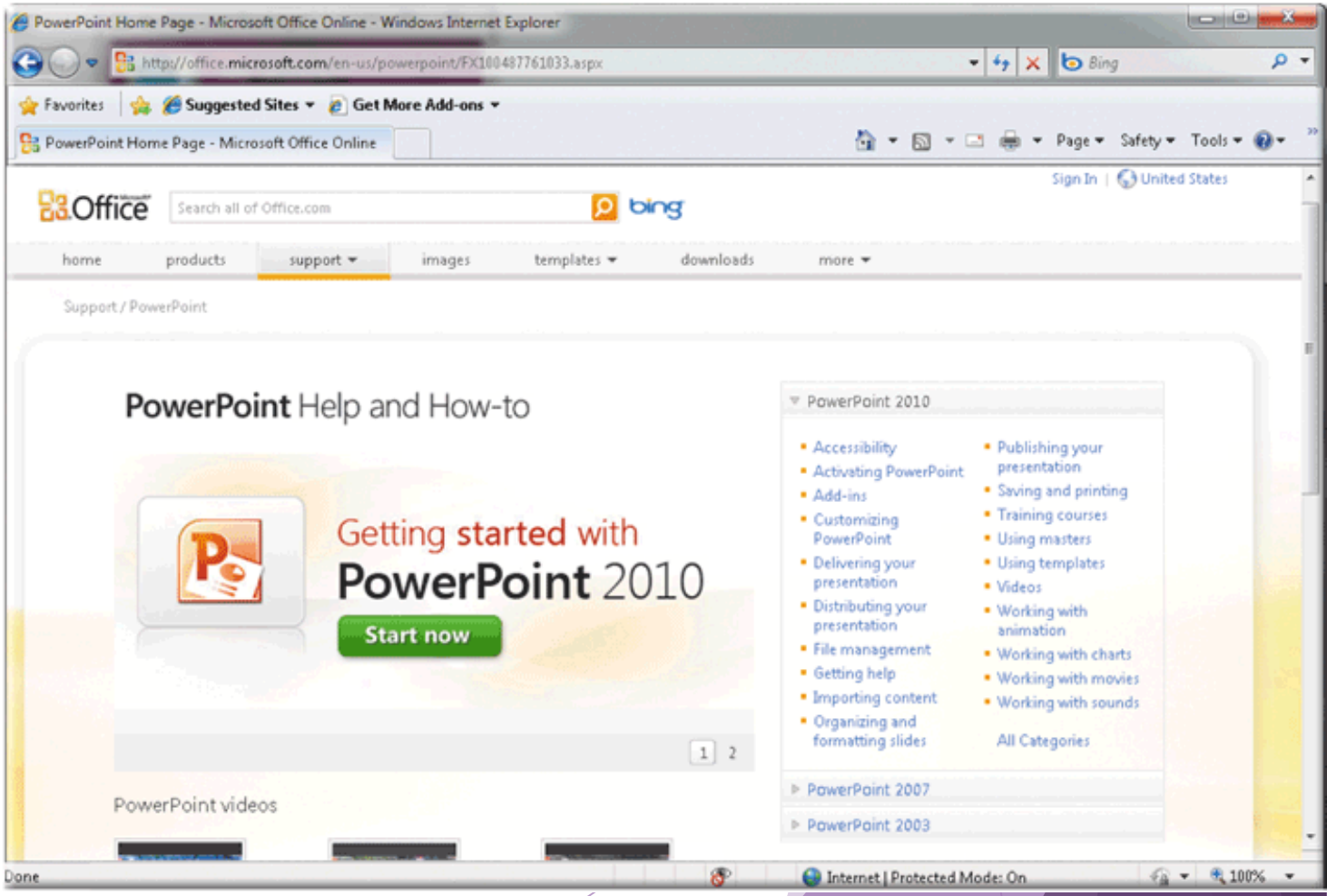
- social networks,
- crowd-sourcing

content management system (CMS)

- helps users create, manage, and modify content on a website
- is a tool that helps you build a website without needing to write all the code
- Example: Wordpress
  - used to create & maintain websites

Learning Tools for Application Software

Web-based Help provides updates and more comprehensive resources to respond to technical issues about software



Learning Tools for Application Software

Web-based training

- application software on the Web

Distance learning (DL)

- delivery of education at different location

Application Software

Tutorials: helps you learn to use the product

Documentation: describes a product to users,

- user guide
- reference manual

Purchasing Software

1. Commercial Software
   - license must be purchased
2. Public-domain software
   - Not copyrighted – legal to copy
3. Shareware
   - Copyrighted – download for free, then pay if you use it
4. Freeware
   - Copyrighted –available for free or fee optional
5. Rentalware
   - Copyrighted – leased

Licensed Software

- Site license
  - all computers at a specific location
- Concurrent-user license
  - specified number of copies
  - May have license-monitoring software
- Multiple-user license
  - number of people who use the software
- Single-use license
  - Limits the software to one user at a time

Other Software

- Pirated software
  - obtained illegally
  - violation of copyright
- Abandonware
  - no longer being sold or supported
  - 95 years copyright from date of publication
- Custom software
  - custom-made for company

Thank you!

any questions?