

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.

what does your device need to manage?

- what came on your device (PC/tablet/phone)?
- what systems do you use?
- Do you, or your device, organize, manage, open/close, switch on/off, read, write, interact, output or switch things?
 - give examples

what has been put on your device?

- what is now on your device (PC/tablet/phone)?
- what did you put on?
- Every day, what do you use on your phone?
 - watch
 - communicate
 - organize
 - learn
 - enjoy

The background features abstract, overlapping geometric shapes in various shades of purple, ranging from light lavender to deep, dark purple. These shapes are primarily located on the right side of the image, creating a modern, layered effect. The word "results" is centered on the left side of the image.

results

- general - camera
- gallery
 - clock
 - calendar
 - calculator
 - Message
 - app store
 - find my
 - weather
 - voice memo
 - mail
 - gg map

- Entertainment - youtube
- yt music
 - netflix
 - we tv
 - music
 - IQIYI
 - spotify
 - Viu
 - bili
 - Prime
 - Disney +

Game

- ROV
- hey day
- Identity V
- PES

Social - FB

- IG
- X
- wechat
- line
- Weibo
- Messenger
- Tiktok
- Discord
- Snapchat

Banking - Kbank

- Wechat pay
- Alipay
- SCB
- krungthai
- next
- Pym

Web - Safari

- Chrome
- Baidu
- Firefox
- Microsoft edge

E-commerce

- Lazada - Shopee - Shein
- 7/11 - Door Dash - Amazon
- Alibaba - tao bao

Takeaway

- Grab
- Uber Eats
- Grubhub
- Door Dash
- Deliveroo
- Mei Tuan
- Ele me
- Wutong Wai Mai

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

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

software

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:

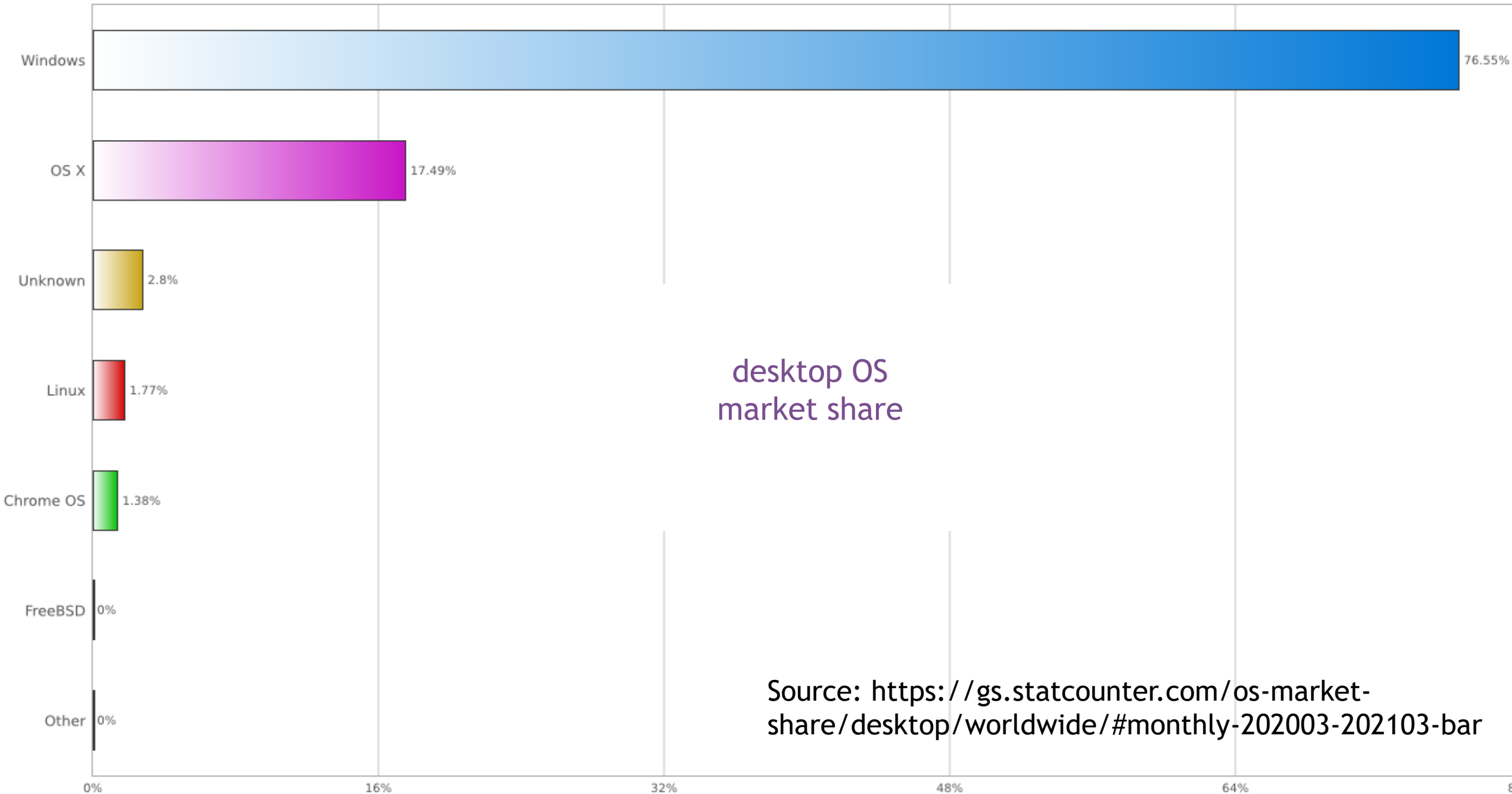
- handle input data and instructions

- perform file management

- control access to storage

- manage devices (e.g. printers)

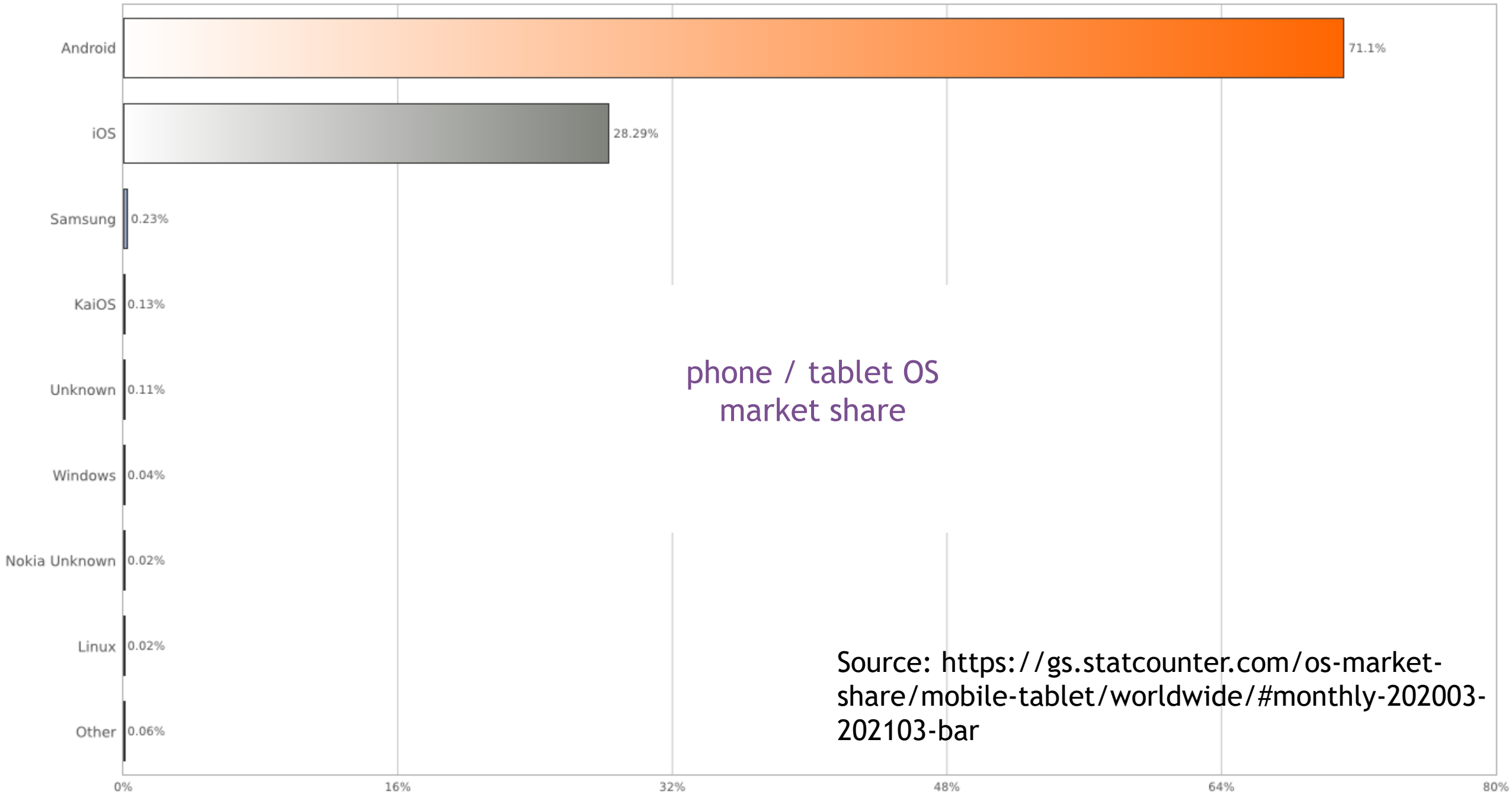
- deal with errors, e.g. displaying error messages



desktop OS
market share

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

StatCounter Global Stats
Mobile & Tablet Operating System Market Share Worldwide from Mar 2020 - Mar 2021



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

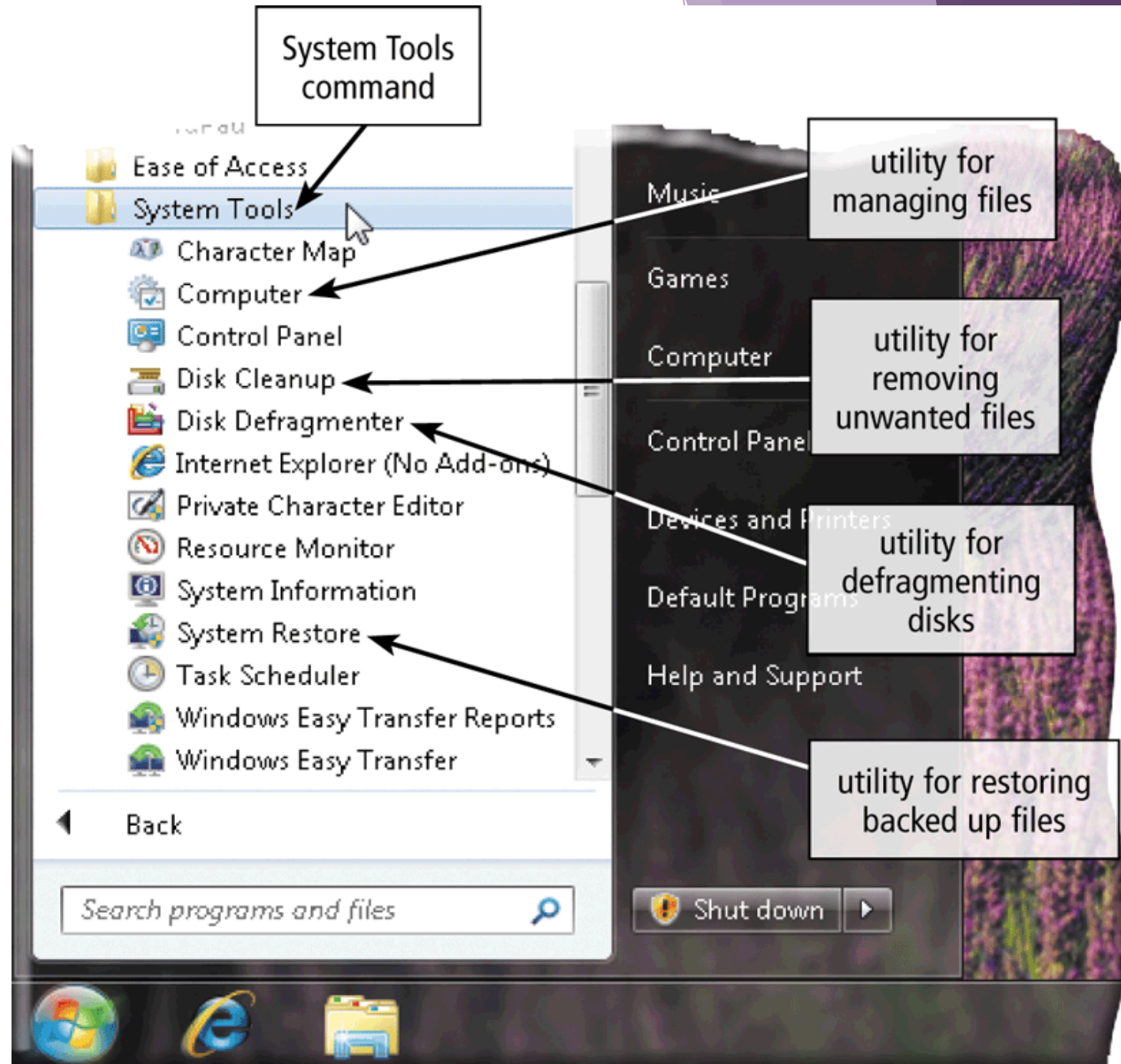
Data compression

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

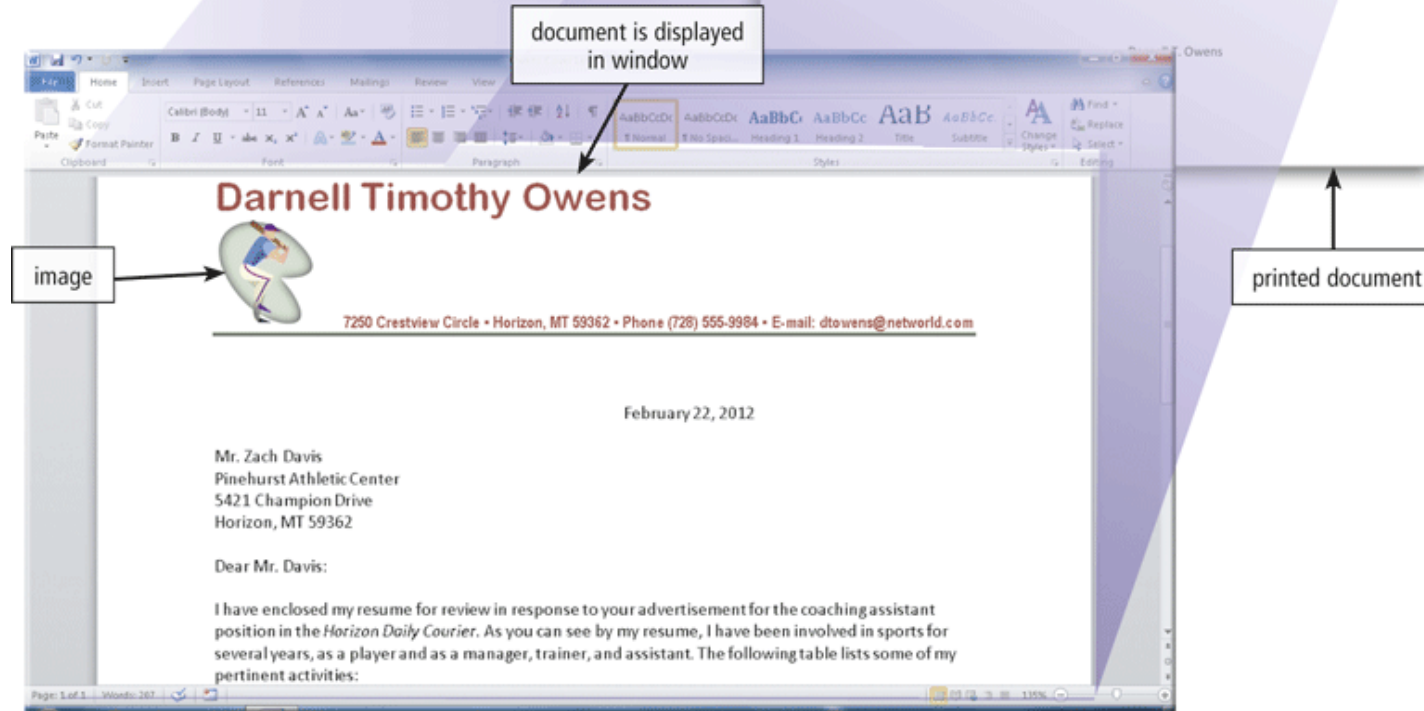
- Web Browser
- E-Mail
- Instant Messaging
- Chat Room
- Text, Picture, Video Messaging
- RSS Aggregator
- Blogging
- Newsgroup/Message Board
- FTP
- VoIP
- Video Conferencing

Exchanging files

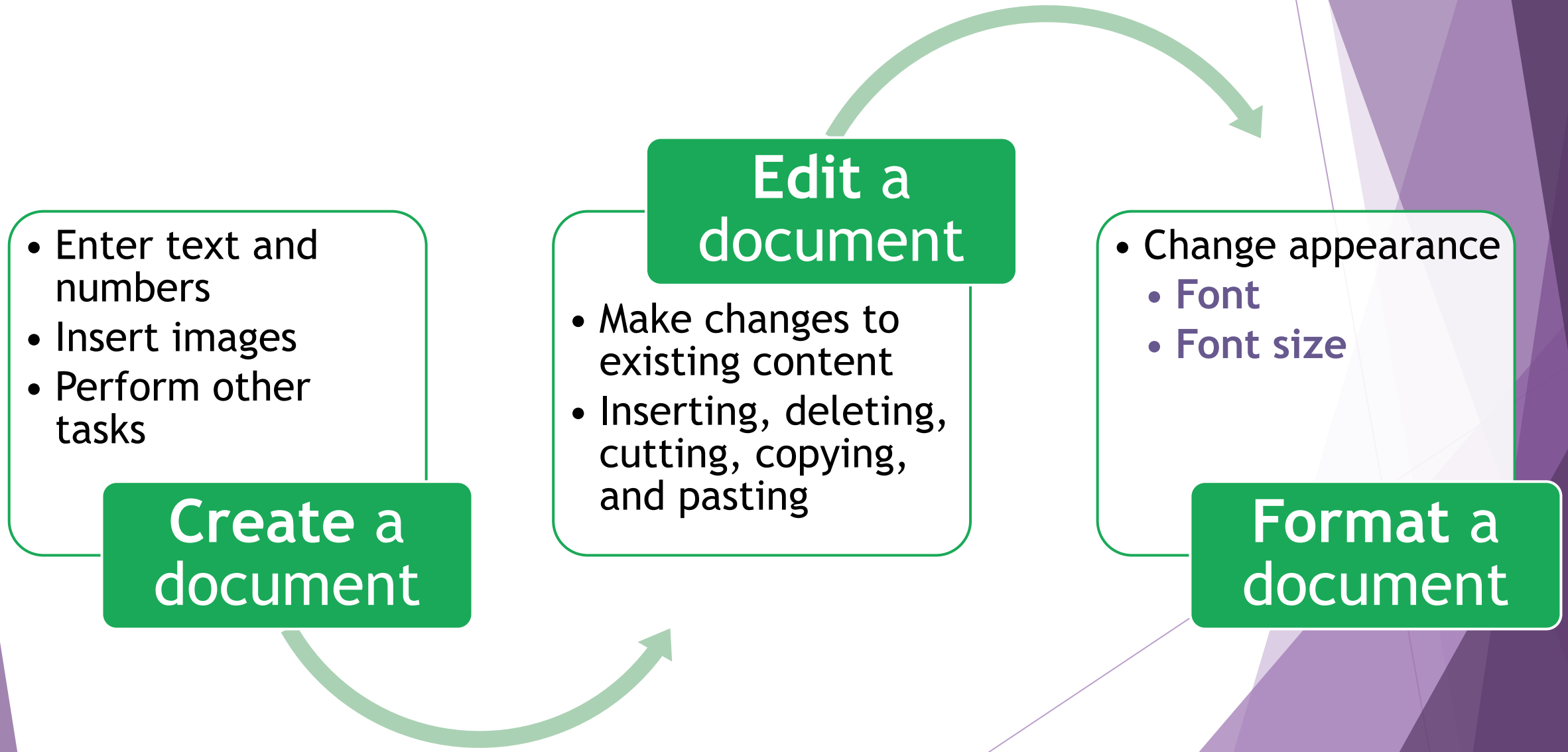
- **Importing**: getting data from another source and then converting it into a compatible format
- **Exporting**: transforming data into a format that can be used in another program

Word Processing

Word processing software allows users to create and manipulate documents



Word Processing



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

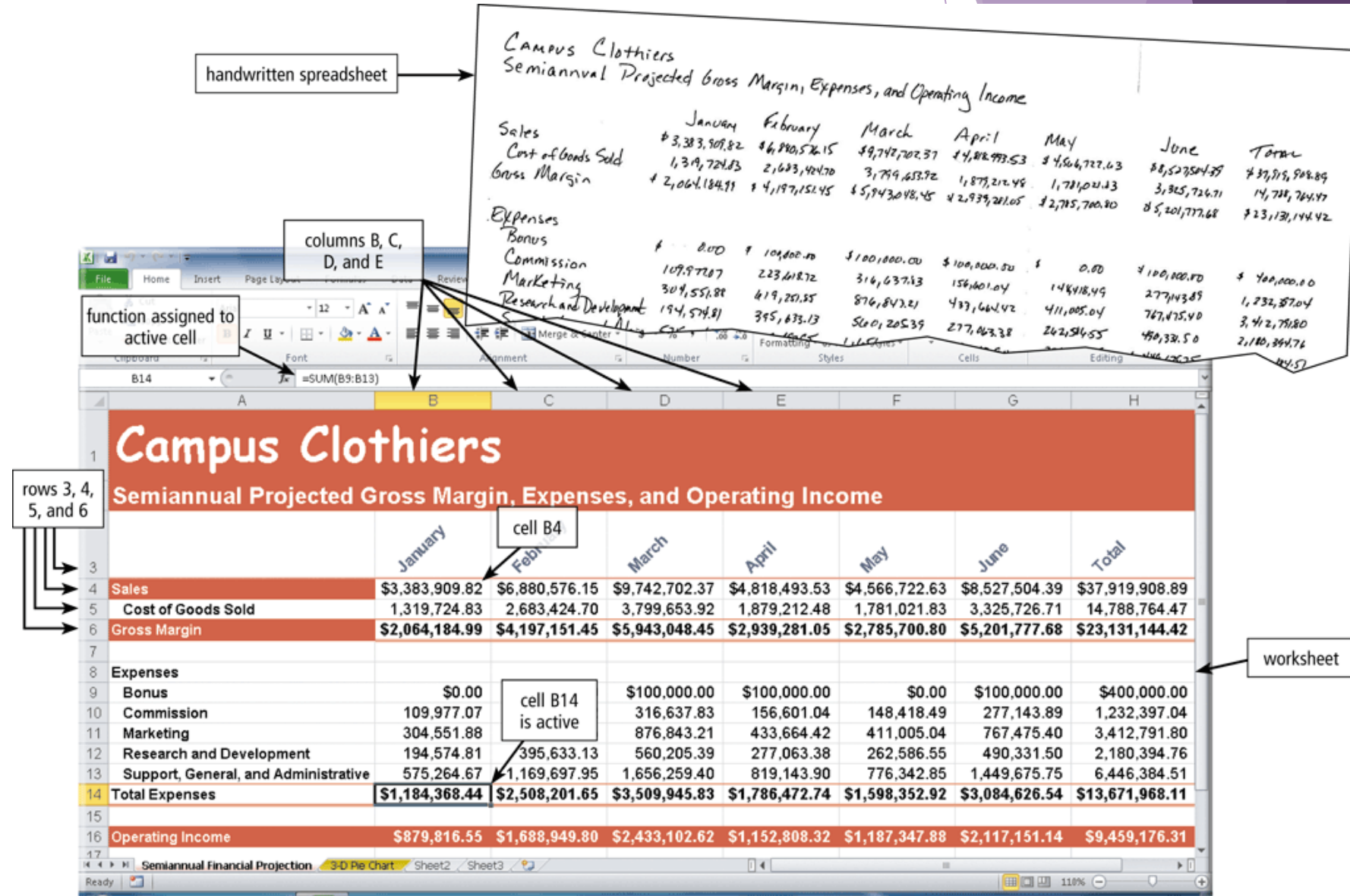
Default Settings

- ▶ 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	

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



Spreadsheets

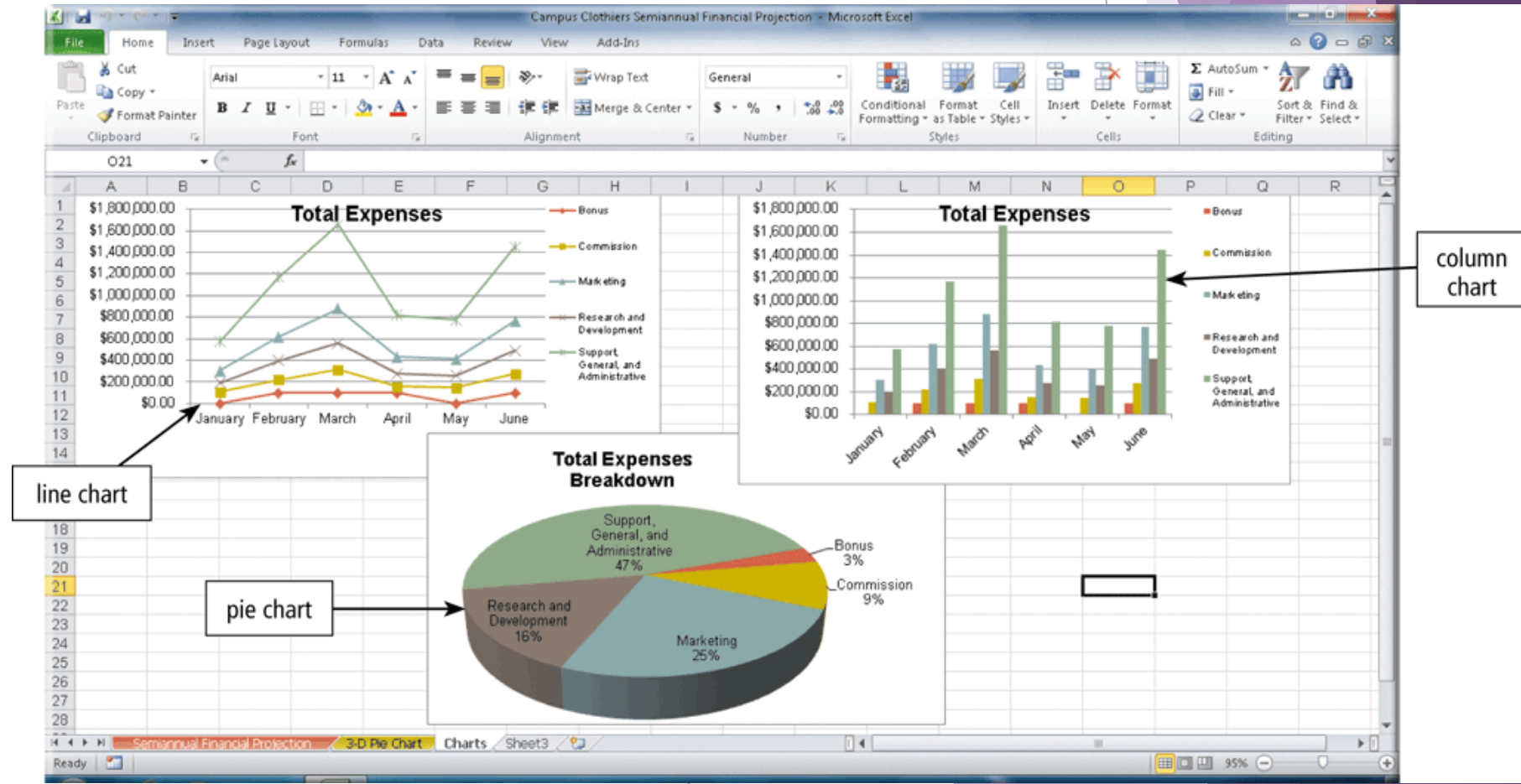
Organized into **columns and rows** on a worksheet

- ▶ 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

spreadsheets

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

The screenshot displays the Microsoft Access 2007 interface. The 'Table Tools' ribbon is active, showing options for 'Fields' and 'Table'. The 'Client' table is selected, and its data is displayed in a datasheet view. A 'fields' box points to the column headers of the 'Client' table. A 'records' box points to the data rows of the 'Client' table. A 'Trainer table' box points to the 'Trainer' table below.

Client Numl	Last Name	First Name	Address	Telephone Nur	Amount Paid	Balance	Trainer Number
AB10	Alvarez	Francine	23 Robbins	555-4321	\$300.00	\$24.00	203
BR18	Breeton	Alex	345 Levick	555-6987	\$324.00	\$32.00	205
FE47	Ferber	Jane	68 Passmore	555-3412	\$420.00	\$36.00	207
GM50	Gammon	Fred	98 Magee	555-8789	\$560.00	\$50.00	205
HJ05	Heijer	Bill	314 Oakley	555-4365	\$240.00	\$48.00	203
KL10	Klinger	Cynthia	44 Rising Sun	555-4576	\$640.00	\$0.00	203
MA24	Manchester	Liz	67 Fanshawe	555-8787	\$348.00	\$40.00	207
PR30	Preston	Mike	75 Ulhrich	555-4454	\$440.00	\$40.00	205
SA23	Santoro	Maria	134 Castor	555-9780	\$340.00	\$36.00	207
TR35	Trent	Jerry	167 Martin	555-7667	\$480.00	\$42.00	205

Trainer N	Last N	First Nan	Telephone Nu	Hourly Ra	Start Dat	Comment	Picture	Web Page
203	Kim	Rachel	555-0101	\$18.00	2/5/2005	Working toward a degree in physical therapy. Member of volunteer fire department.	Bitmap Image	http://www.site.com/ac03/trainer1.m
205	Martinez	Alex	555-1243	\$18.50	3/14/2004	Has a degree in Recreation Management. Runs marathons.	Bitmap Image	http://www.site.com/ac03/trainer3.m
207	Pretsch	Pat	555-2662	\$18.00	6/2/2005	Coaches high school tennis.	Bitmap Image	http://www.site.com/ac03/trainer4.m

Database Software

Relational database:

data organized into related tables

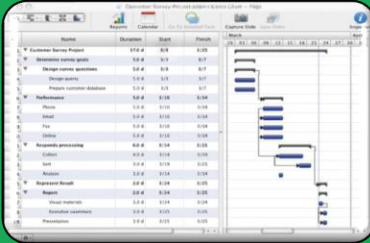
- rows (**records**) & columns (fields)
- **Primary key** is field used to identify records (e.g. student ID)
- **Keys** are field used to index data
- **Query** to display records

Business Software

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



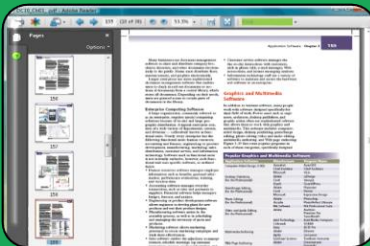
Business Software



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



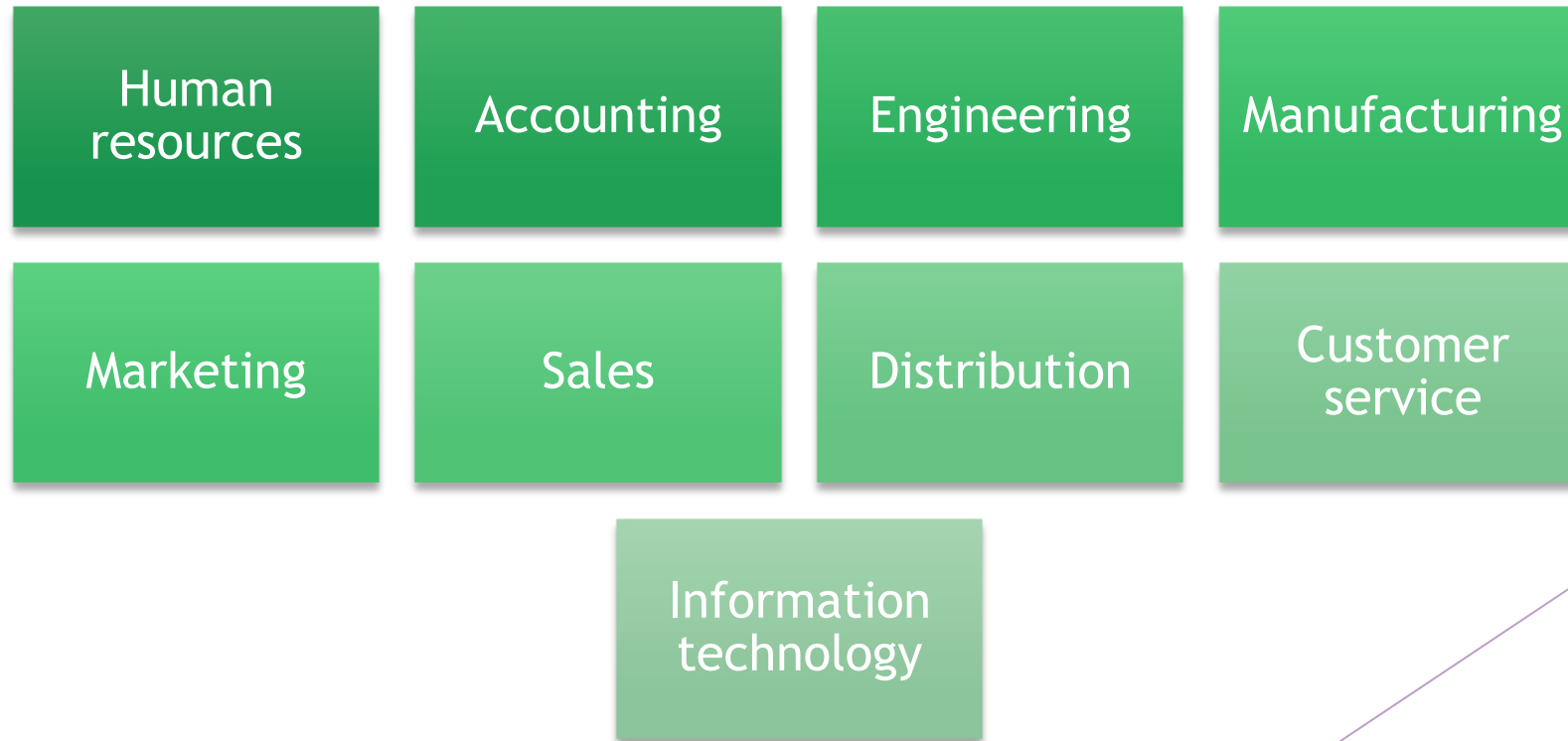
Accounting software helps companies record and report their financial transactions



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
Multimedia Authoring	Sony	ACID Pro
	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

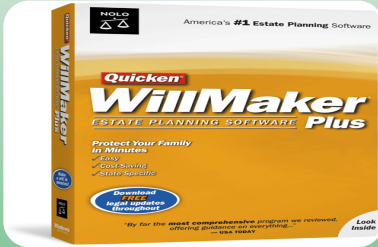


Multimedia authoring software

Software for Home, Personal, and Educational Use



Personal finance software

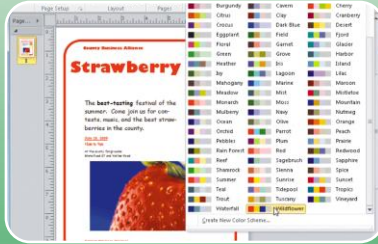


Legal software



Tax preparation software

Software for Home, Personal, and Educational Use



Personal DTP software

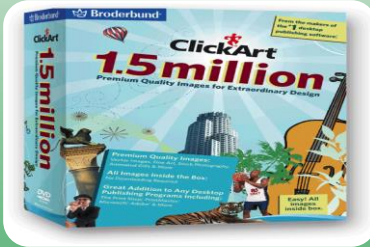


Personal paint/image editing software



Personal photo editing software

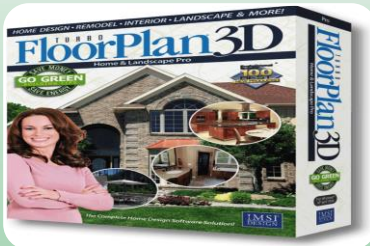
Software for Home, Personal, and Educational Use



Clip art/image gallery

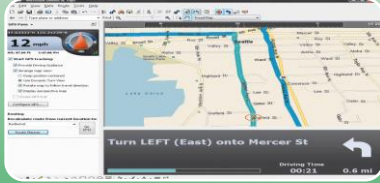


Video and audio editing software

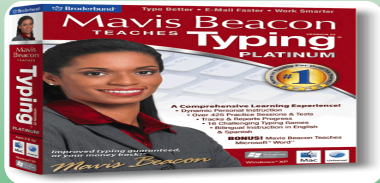


Home design/landscaping software

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

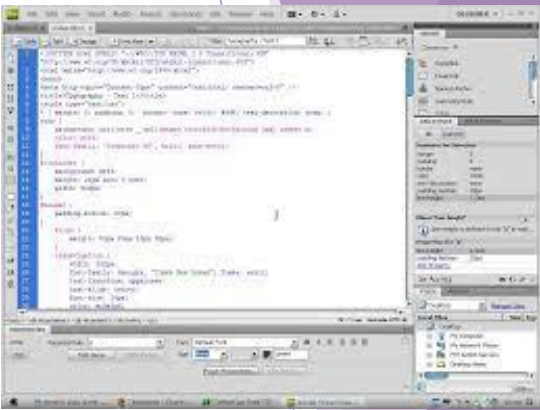
Blogging

Newsgroup/
Message Board

FTP

VoIP

Video
Conferencing



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:

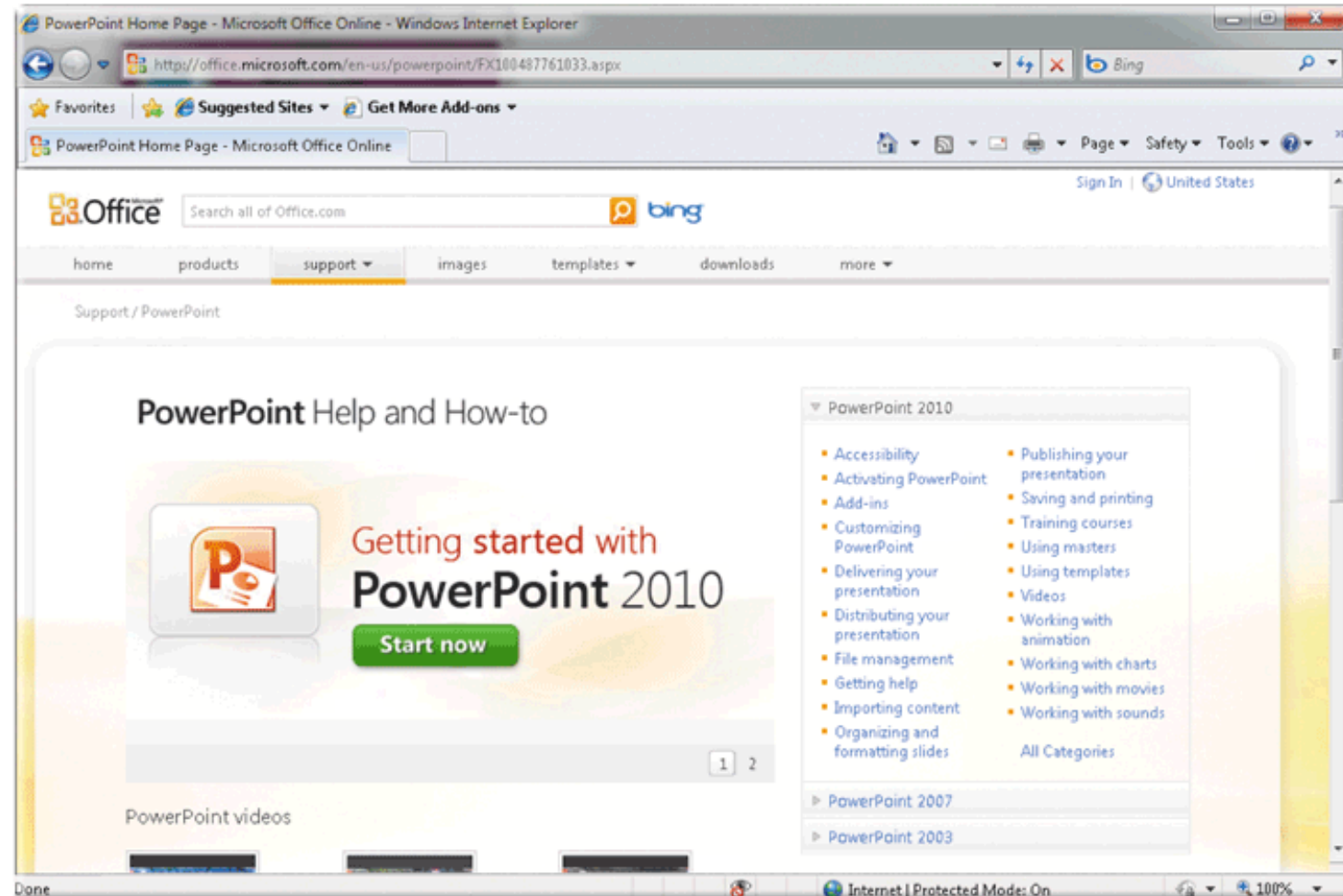
- ▶ social networks,
- ▶ crowd-sourcing

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

The screenshot shows a Moodle course interface for 'Romeo and Juliet Sample Unit'. The top navigation bar includes 'Moodle Demo home' and 'Romeo and Juliet'. A status message at the top right indicates 'You are currently using guest access (Login)'. The left sidebar contains three expandable sections: 'Online Users' (showing 'None' for the last 5 minutes), 'Activities' (with links for Assignments, Forums, Quizzes, and Resources), and 'Administration' (with a link to 'Enroll me in this course'). The main content area is titled 'Topic outline' and features a 'Welcome to English 9!' message with a photo of a historic building. Below this is a 'General Information' section with a link to 'Course Syllabus or Overview Goes HERE' and another link to 'Welcome and Instructions for Visitors'. The 'Topic outline' lists '1' as the first topic, titled 'Romeo and Juliet', which includes 'Introductory Discussions' (with links to 'Primary Document for Parenting Advice Forum' and 'Seventeenth Century "Advice to Parents"') and 'Assignments and Handouts'. The right sidebar contains a 'Calendar' for September, an 'Events Key' with 'Global' and 'Course' options, and a 'Credits' section stating the course was developed and donated by Lesli Smith, with a link to 'http://moodlerooms.com/'.

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

The background features abstract, overlapping geometric shapes in various shades of purple, ranging from light lavender to deep, dark purple. These shapes are primarily located on the right side of the frame, creating a modern, layered effect.

Thank you!
any questions?