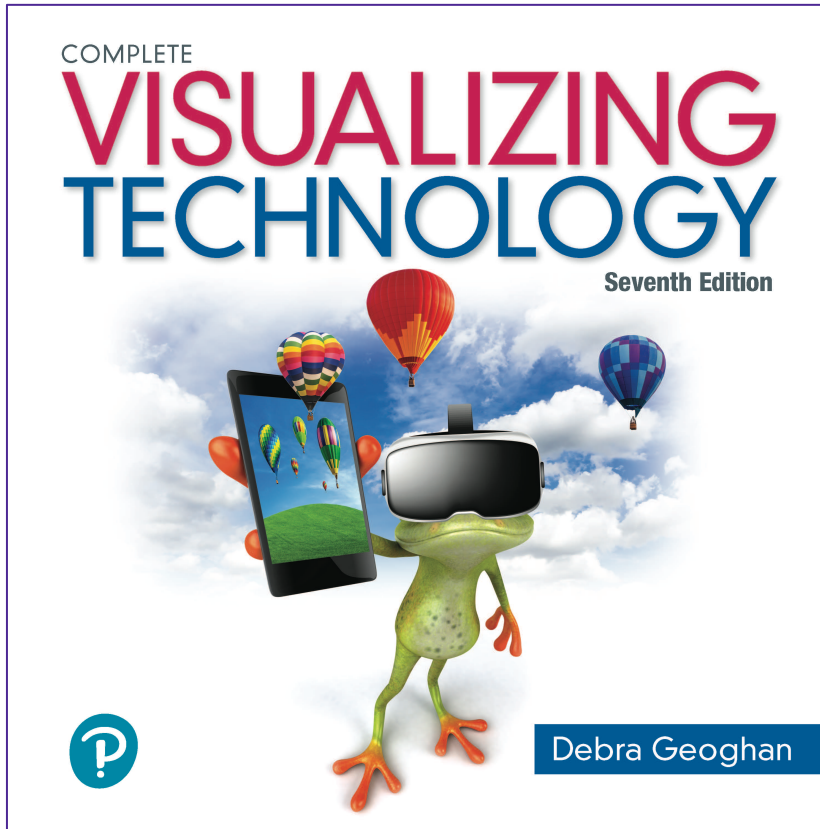


Introductory Visualizing Technology

Seventh Edition



Chapter 6

Digital Devices and Multimedia

Learning Objectives

- 6.1** Explain the Features of Digital Cameras
- 6.2** Compare Methods for Transferring Images from a Digital Camera
- 6.3** Identify Several Ways to Edit and Print Photos
- 6.4** Recognize Important Audio File Types
- 6.5** Describe Several Ways to Create Videos
- 6.6** Compare Portable Media Players, Tablets, and Smartphones

Learning Objective 6.1

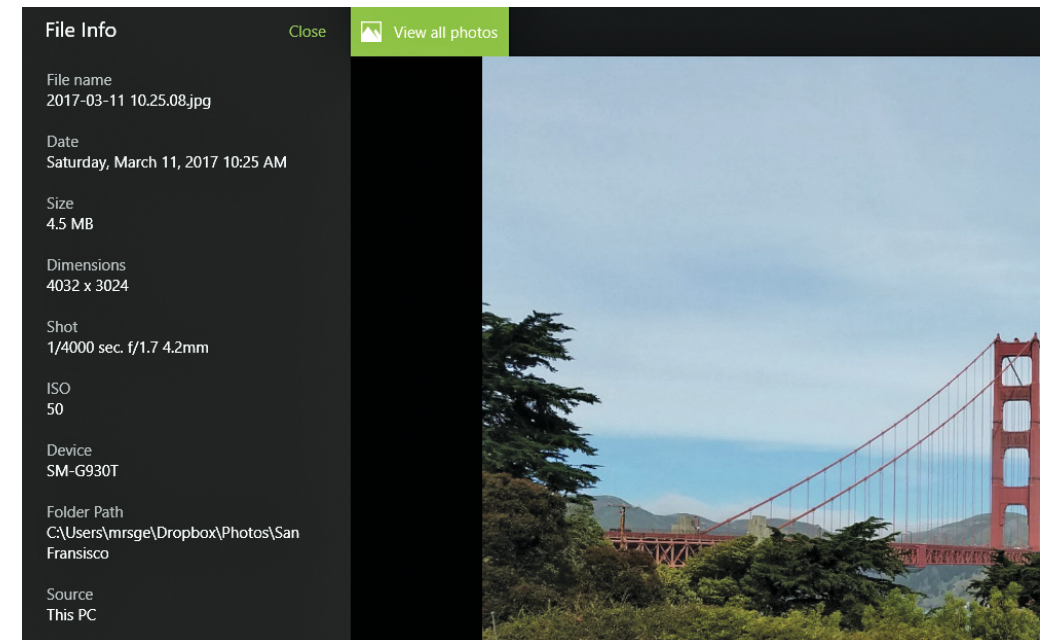
- Explain the Features of Digital Cameras

Explain the Features of Digital Cameras



Digital Cameras—Resolution

- Resolution is the quality of the image
 - Measured in pixels
 - Higher resolution means more detail; you can make larger prints
 - The higher the resolution, the larger the file size



Digital Cameras—Storage

- Internal – usually small
 - Erasable and reusable
- Removable memory cards
 - Inexpensive
 - Can be read by most computers and printers
 - Large capacity – flash cards hold up to 2 TB
 - Erasable and reusable



Digital Cameras—Lenses

- Zoom
 - Optical
 - Digital
 - Both
- Macro setting
- Telephoto
- Wide-angle



Digital Cameras—Types of Cameras (1 of 3)

- Basic point-and-shoot
 - Simplest; fewest features
 - Least expensive
- Advanced point-and-shoot
 - Moderately priced
 - Better zoom
 - Macro functions
 - Viewfinders
 - Auto focus



Digital Cameras—Types of Cameras (2 of 3)

- Compact system cameras (CSC)
 - Advanced point-and-shoot
 - Interchangeable lenses
 - Manual controls
 - Capture HD video



Digital Cameras—Types of Cameras (3 of 3)

- Digital single-lens reflex (DSLR)
 - Traditional type of camera
 - Manually change lenses
 - Manual focus and exposure
 - Best for action shots



Learning Objective 6.2

- Compare Methods for Transferring Images from a Digital Camera

Compare Methods for Transferring Images from a Digital Camera

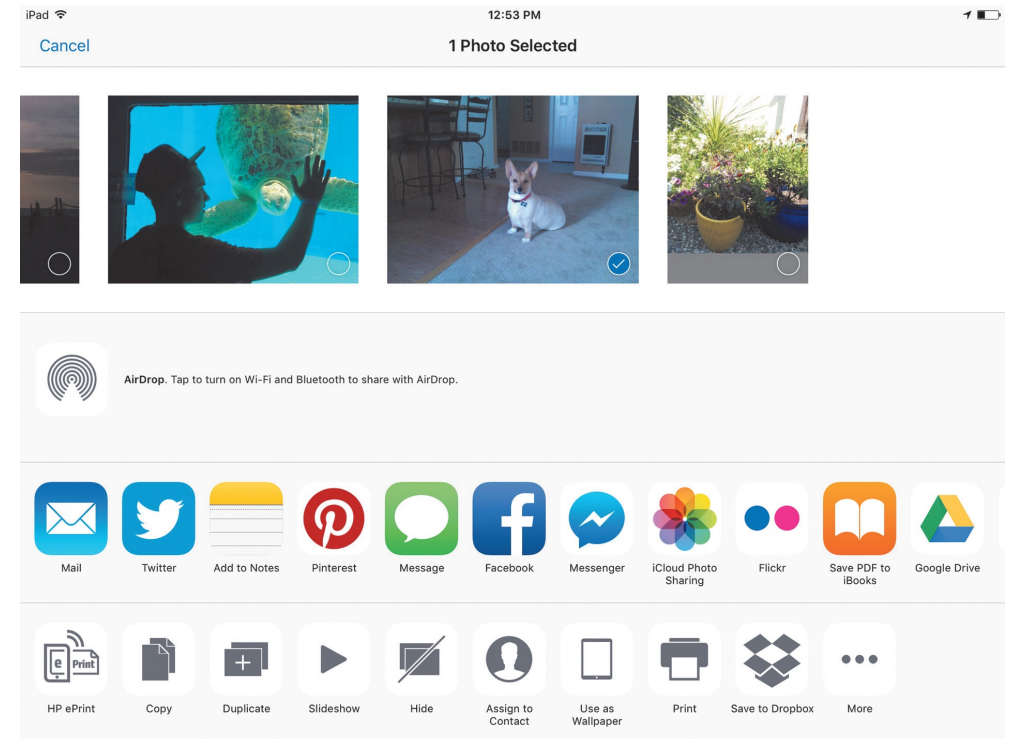


Transferring Images—Memory Cards, USB, FireWire, and Wireless

- Memory cards
 - Store images
 - Can be inserted into a computer or printer
- USB or Thunderbolt
 - Connects the camera directly to a computer; this requires device drivers for the computer to talk to the cameras
- Wireless-enabled digital camera
 - Transfer photos using Wi-Fi or cellular wireless technology

Transferring Images—Transferring to the Cloud

- Mobile device cameras upload photos directly to the Internet or the cloud
- Multiple platforms (Android/Windows/iOS) may upload to:
 - Instagram
 - Dropbox
 - Photobucket
 - Facebook



Learning Objective 6.3

- Identify Several Ways to Edit and Print Photos

Identify Several Ways to Edit and Print Photos



Editing and Printing Photos

- Editing software
 - Photoshop Adobe: \$\$\$
- Online editing
 - Shutterfly and Flickr
 - Include basic editing tools
 - Options to share and purchase photos

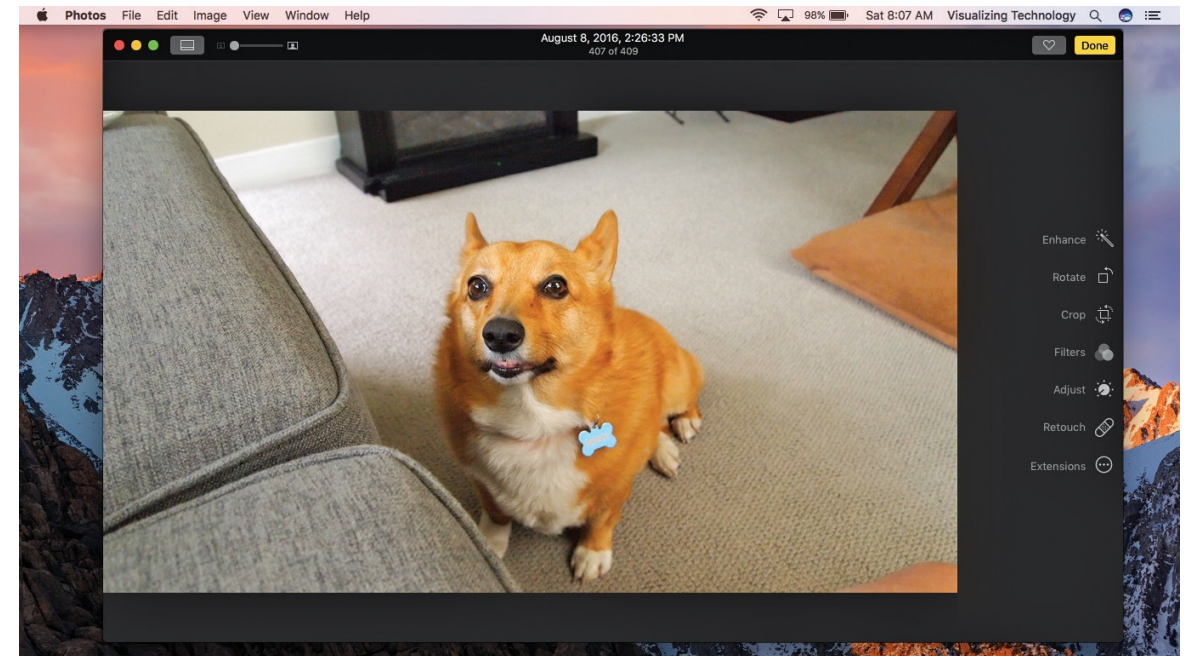


Image File Formats

Table 6.2 Important Image File Types

Format	File Extension	Description
Joint Photographic Experts Group	JPEG or JPG	<ul style="list-style-type: none">• Can store up to 16.7 million colors• Uses lossy compression to reduce file size
Windows Bitmap	BMP	<ul style="list-style-type: none">• A standard graphic format originally developed for Microsoft Windows• Compression is optional, resulting in large file size
Tagged Image File Format	TIFF or TIF	<ul style="list-style-type: none">• A lossless graphic format, often with no compression applied, resulting in large file size
RAW	Camera manufacturers have proprietary file formats, such as NEF (Nikon) or CRW/CR2 (Canon)	<ul style="list-style-type: none">• Raw images are not processed by the camera and must be processed by software in order to be used

Printing Photos

- Kiosks
 - Photo kiosks in retail stores
 - Built-in editing features
 - Connect your camera via USB or use a memory card

Online Printing and Sharing

- Personal image-sharing sites
 - Google Photos
 - Shutterfly
- Photo-sharing community
 - Flickr
 - Owned by Yahoo!
- Geotagging
- Creative Commons

Learning Objective 6.4

- Recognize Important Audio File Types

Recognize Important Audio File Types



Audio File Types (1 of 2)

- Codecs
 - Compression algorithms that reduce the size of digital media files
- DMCA: Digital Millennium Copyright Act
 - Made it illegal to remove DRM from protected files



Audio File Types (2 of 2)

- MP3 (MPEG-1 Audio Layer-3)
- AAC: Advanced Audio Coding
- WMA: Windows Media Audio
- DRM: Digital rights management

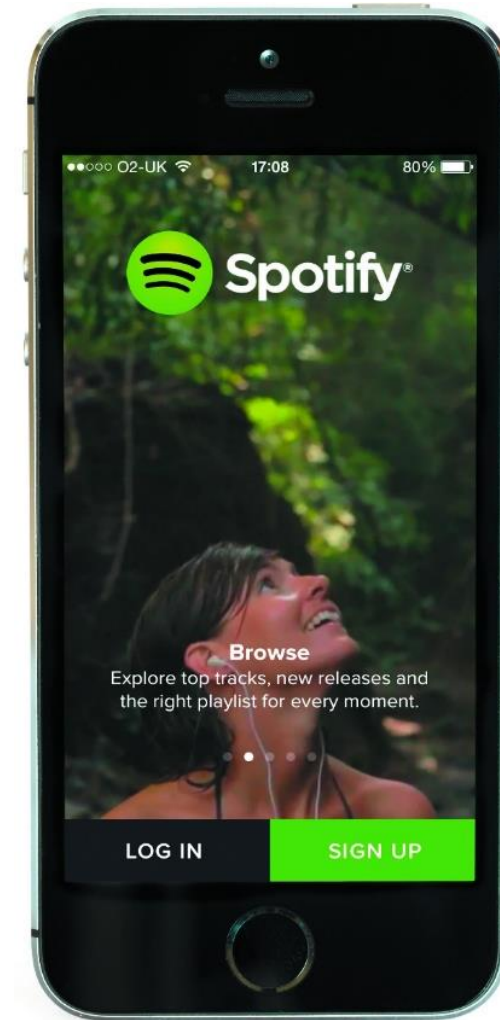
Media Software

The screenshot shows the Apple Podcasts app interface on a Mac. The top bar includes a search bar and navigation tabs for Library, Unplayed, and Store. The main content area displays the podcast 'US House of Representatives: HouseLive.gov House Floor Proceedings Video Podcast'. The podcast cover features the HouseLive.gov logo. Below the cover is a 'Subscribe' button. To the left of the main content, there are links for 'Video', 'National', 'CLEAN LYRICS', and 'LINKS'. The main content area also includes tabs for 'Details', 'Ratings and Reviews', and 'Related'. Below these tabs is a table listing 13 episodes.

	NAME	TIME	RELEASED	DESCRIPTION	POPULARITY	PRICE
1	LEGISLATIVE DAY OF NOVEMBER 21, 2...		Nov 21, 2017	115TH CONGRESS - FIR...	i	Get
2	LEGISLATIVE DAY OF NOVEMBER 17, 2...		Nov 17, 2017	115TH CONGRESS - FIR...	i	Get
3	LEGISLATIVE DAY OF NOVEMBER 16, 2...		Nov 16, 2017	115TH CONGRESS - FIR...	i	Get
4	LEGISLATIVE DAY OF NOVEMBER 15, 2...		Nov 15, 2017	115TH CONGRESS - FIR...	i	Get
5	LEGISLATIVE DAY OF NOVEMBER 14, 2...		Nov 14, 2017	115TH CONGRESS - FIR...	i	Get
6	LEGISLATIVE DAY OF NOVEMBER 13, 2...		Nov 13, 2017	115TH CONGRESS - FIR...	i	Get
7	House Proceedings - Nov 10, 2017		Nov 10, 2017	115TH CONGRESS	i	Get
8	House Proceedings - Nov 09, 2017		Nov 9, 2017	115TH CONGRESS	i	Get
9	House Proceedings - Nov 08, 2017		Nov 8, 2017	115TH CONGRESS	i	Get
10	House Proceedings - Nov 07, 2017		Nov 7, 2017	115TH CONGRESS	i	Get
11	House Proceedings - Nov 06, 2017		Nov 6, 2017	115TH CONGRESS	i	Get
12	LEGISLATIVE DAY OF NOVEMBER 3, 2...		Nov 3, 2017	115TH CONGRESS - FIR...	i	Get
13	LEGISLATIVE DAY OF NOVEMBER 2, 2...		Nov 2, 2017	115TH CONGRESS - FIR...	i	Get

Music in the Cloud

- Cloud
 - Pandora
 - Spotify
 - Groove Music
 - Apple Music
- Social media
 - Facebook
 - Twitter



Speech Recognition or Voice Recognition

- Features
 - Converts spoken words to text
 - Interacts using voice commands
 - Often built into video games
 - User can train the program to recognize speech patterns
- Intelligent Personal Assistants
 - Siri
 - Cortana
 - Amazon's Echo

Learning Objective 6.5

- Describe Several Ways to Create Videos

Describe Several Ways to Create Videos



Videos (1 of 2)

- Webcams and video conferencing
 - Two-way interaction
 - Virtual meetings
 - Connect classrooms
 - Collaboration
 - Talk to family
 - Take videos



Videos (2 of 2)

- Screen capture
 - Creates a video of what happens on your computer
 - How-to videos
 - Screencast-O-Matic
- Webcasting
 - One-way process
 - Broadcasting on the web
 - Live or prerecorded
 - Streaming

Video Cameras Capture Action on the Go

- Features
 - Megapixels
 - Storage
 - Zoom
- Recording options
 - Built-in hard drives to store the video
 - Edit
 - Share videos

Video Editing Software

- Basic features
 - Capture
 - Edit
 - Export video
- Additional features
 - Transitions and animations
 - Captions
 - Music
 - Burn to DVD or upload to web

Learning Objective 6.6

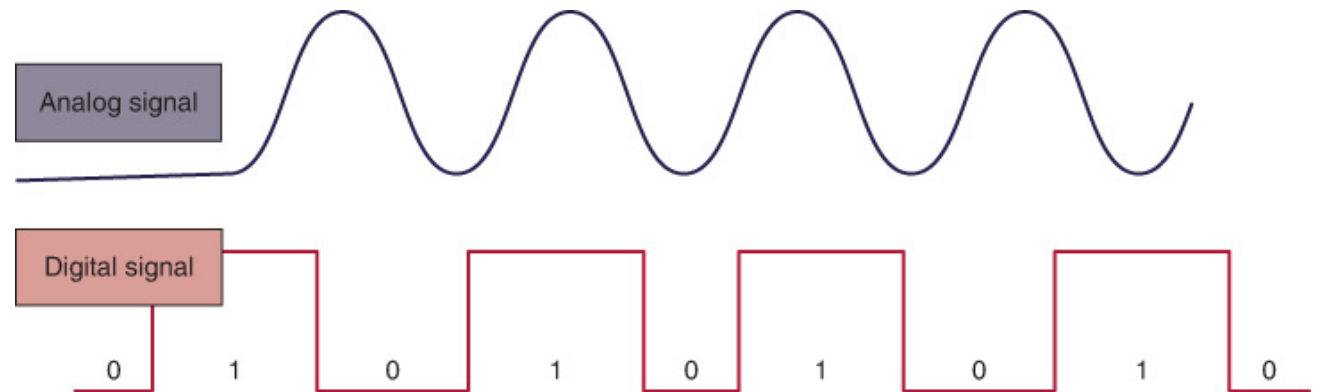
- Compare Portable Media Players, Tablets, and Smartphones

Compare Portable Media Players, Tablets, and Smartphones



Analog vs. Digital

- Analog
 - Converts data signals into continuous electronic waves or pulses
 - Telephones
 - CRT monitors
- Digital
 - Data represented by a series of 0s and 1s
 - Signals can carry more data and are less prone to interference



MP3 or Portable Media Players

- Handheld devices allow you to carry thousands of:
 - Songs
 - Podcasts
 - Photos
 - Videos
 - Games



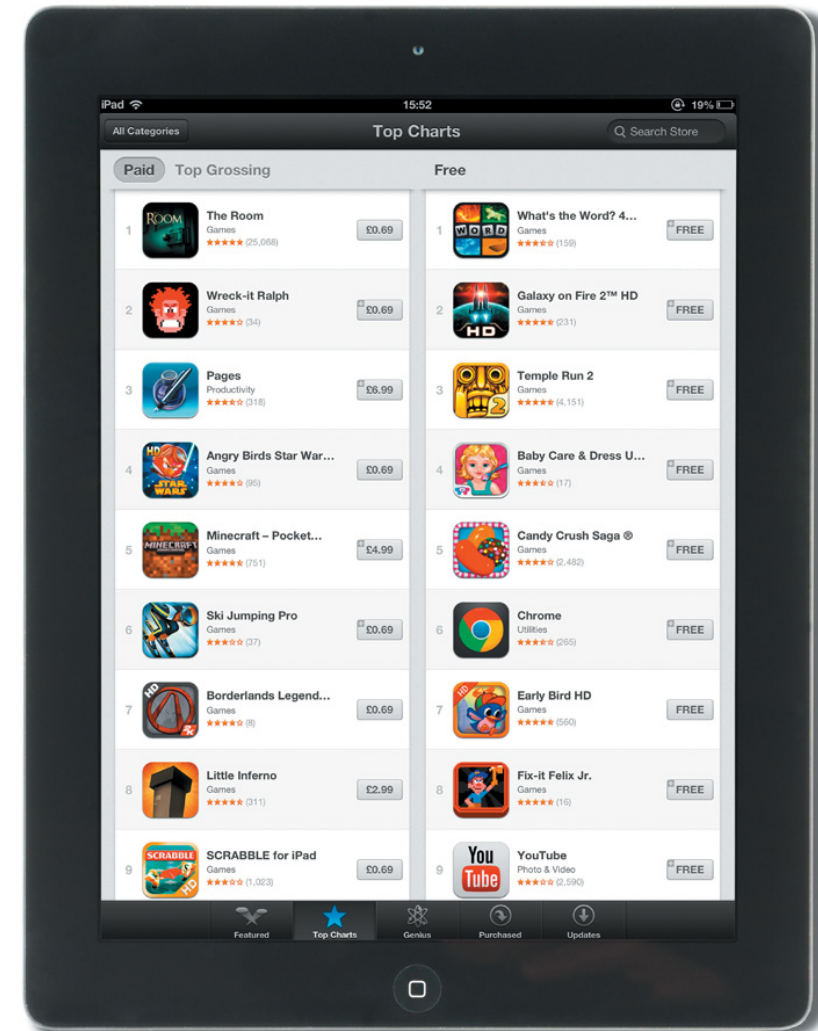
Smartphones

- Multifunction devices that blend phone, PDA (personal digital assistant), and portable media player features
- Run a mobile operating system
 - iPhone
 - Android
 - BlackBerry
 - Windows phone
- Have the ability to download mobile apps



Tablets

- Operating systems
 - iOS
 - Android OS
 - Windows OS
- Purchase apps
 - iOS Apple Store
 - Google Play Store



Questions



Copyright

