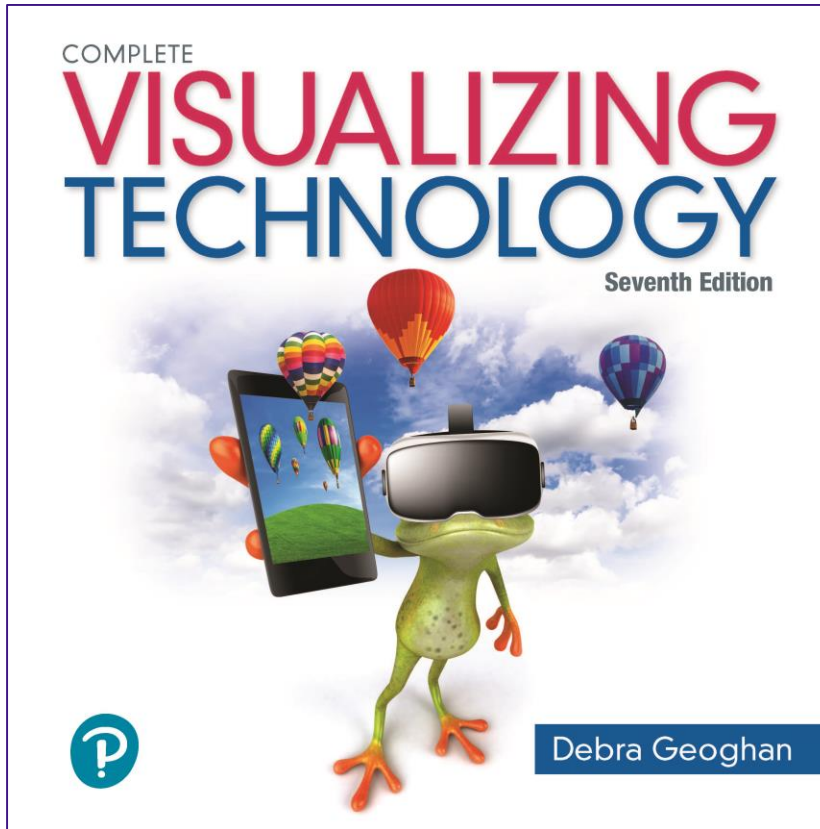


Introductory Visualizing Technology

Seventh Edition



Chapter 6

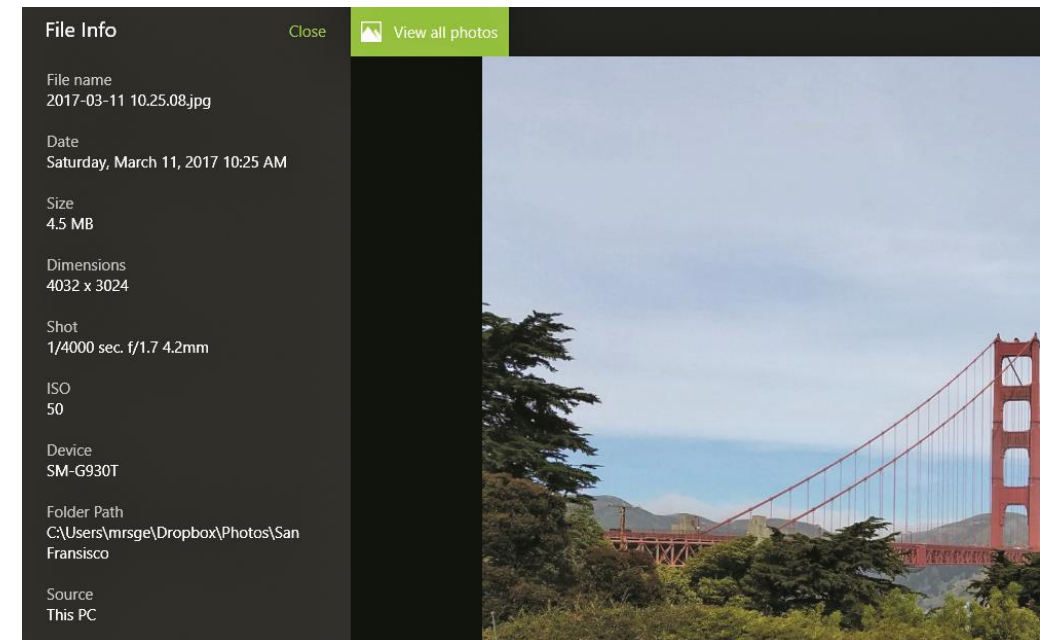
Digital Devices and
Multimedia

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



Compare Methods for Transferring Images from a Digital Camera

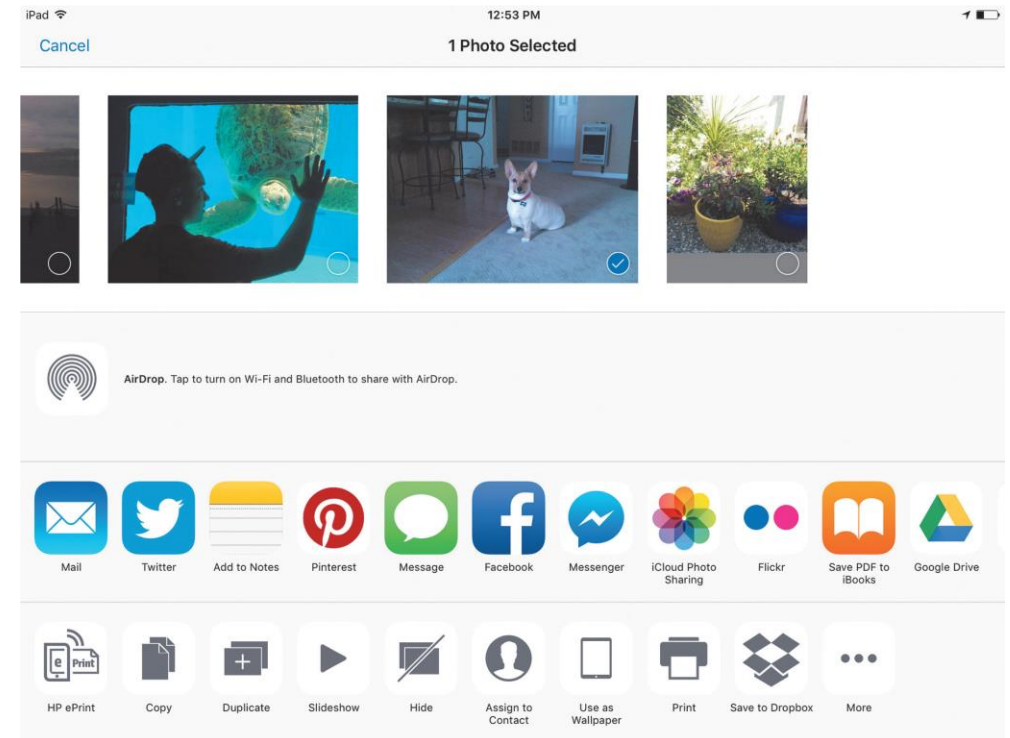


Transferring Images—Memory Cards, USB, FireWire, and Wireless

- 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



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

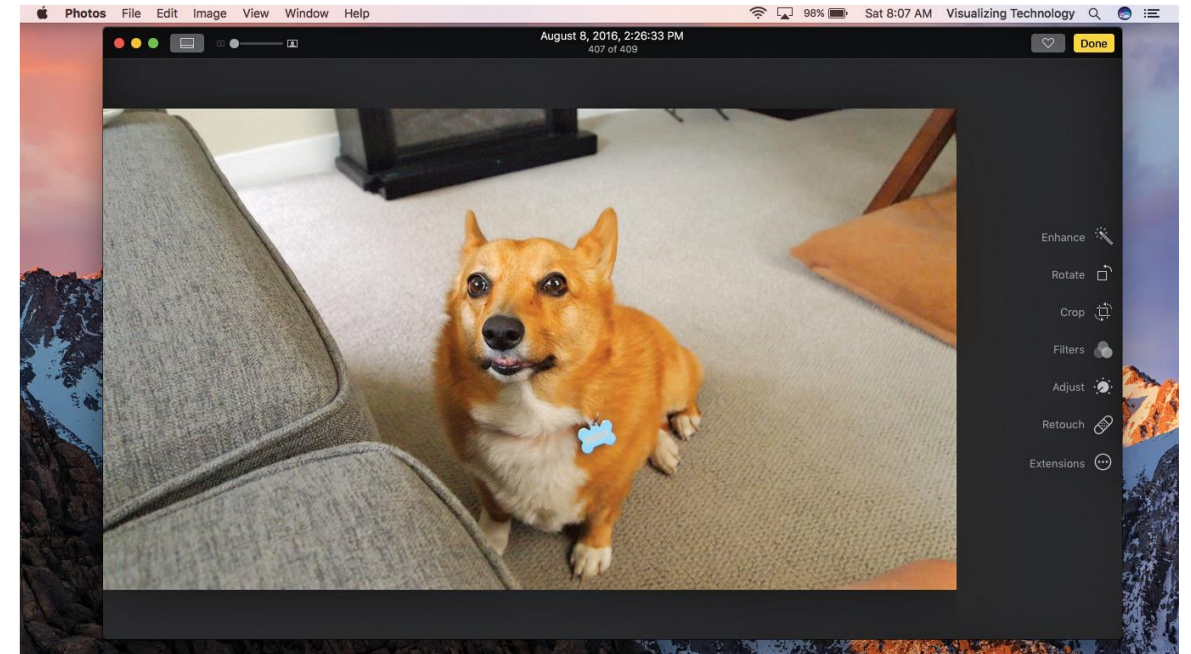


Image File Formats

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

Recognize Important Audio File Types



Audio File Types (1 of 2)

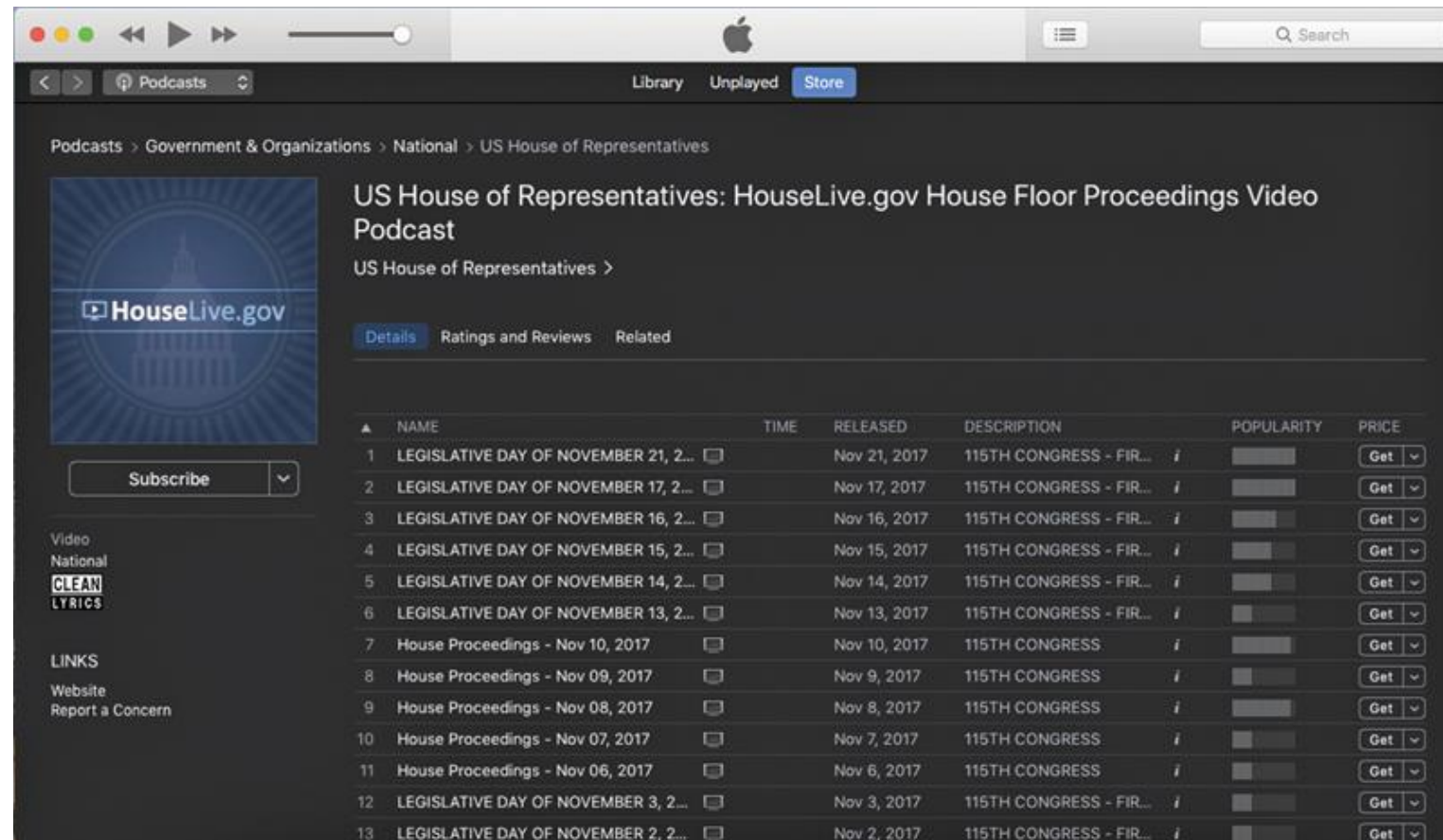
- Codecs
 - Compression algorithms that reduce the size of digital media files
- DMCA: Digital Millennium Copyright Act
 - Made it illegal to remove DRM from protected files



Audio File Types (2 of 2)

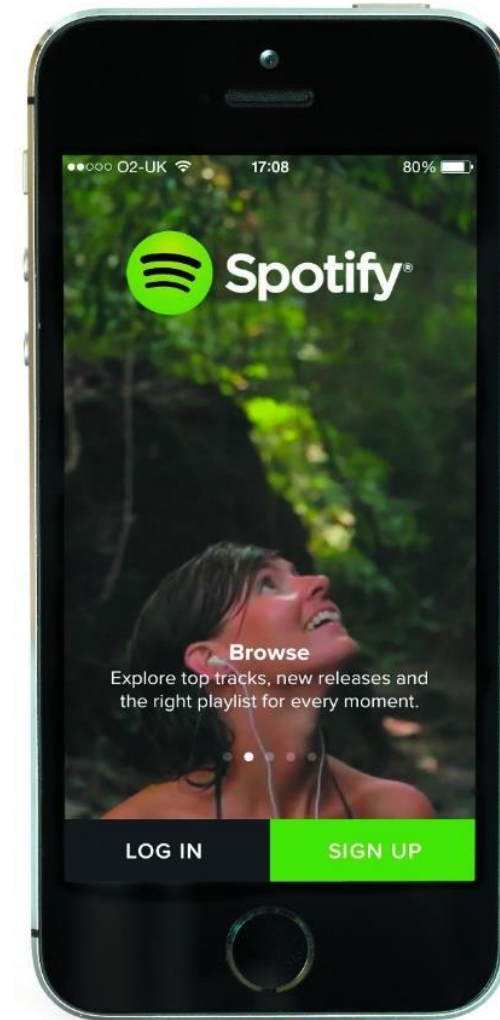
- MP3 (MPEG-1 Audio Layer-3)
- AAC: Advanced Audio Coding
- WMA: Windows Media Audio
- DRM: Digital rights management

Media Software



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

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

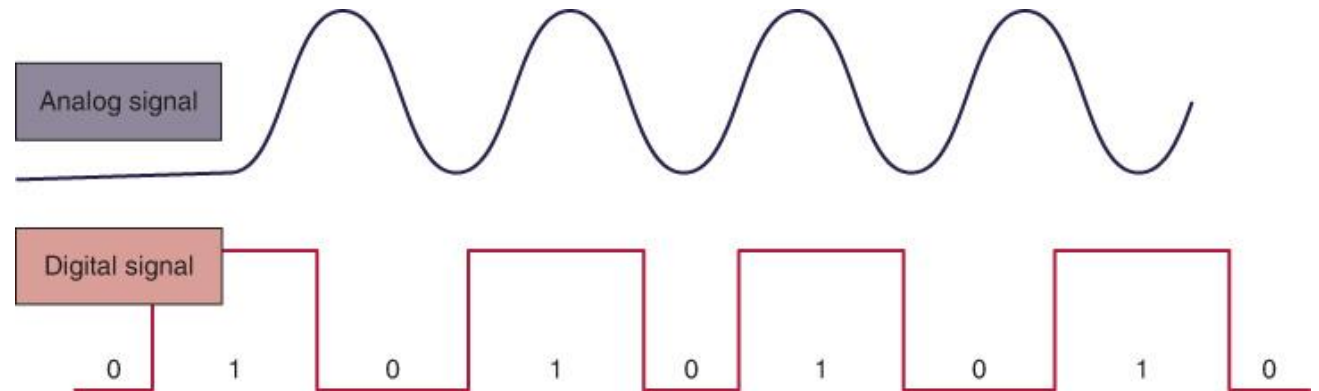
- Basic features
 - Capture
 - Edit
 - Export video
- Additional features
 - Transitions and animations
 - Captions
 - Music
 - Burn to DVD or upload to web

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



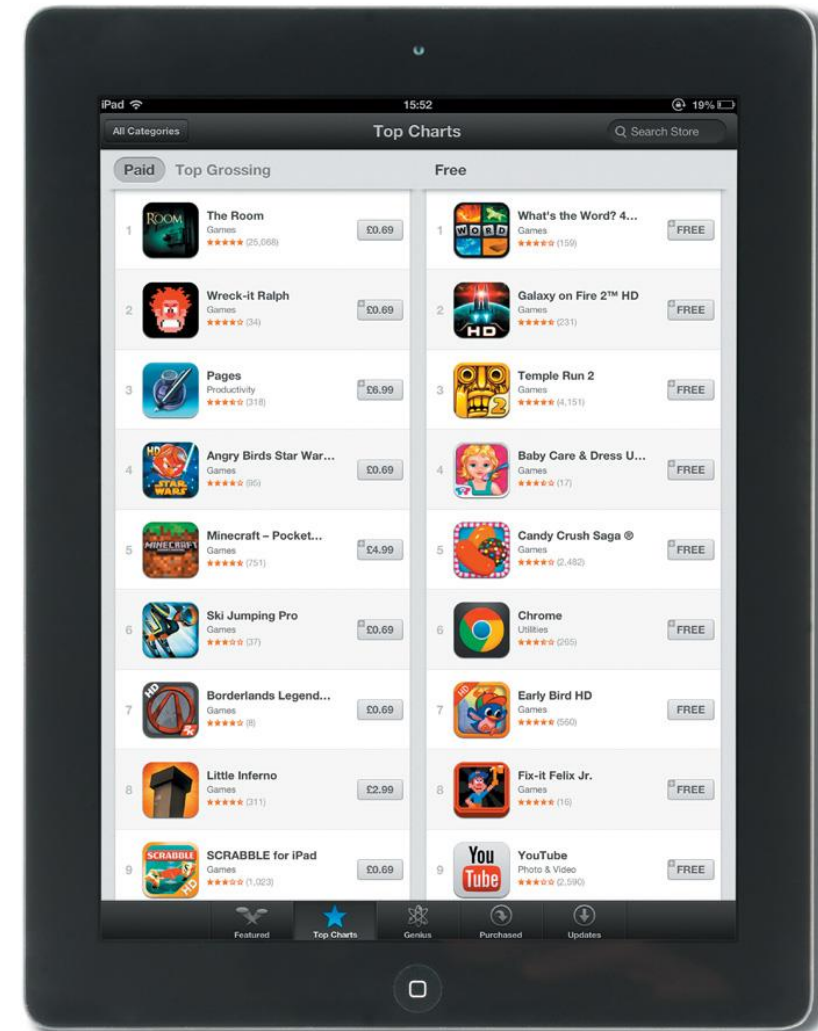
Smartphones

- 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



Copyright

