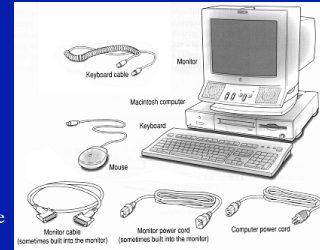


Music Technology

Richard Repp, Ph.D.
Georgia Southern University

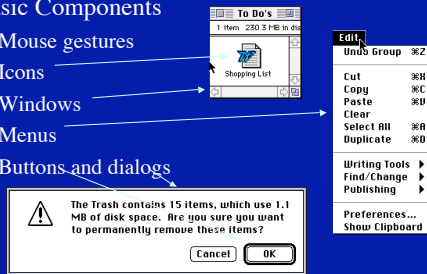
Common computer components

- Computer (CPU)
- Monitor
- Keyboard
- Mouse
- Peripherals
 - Printer
 - Modem
 - External Hard Drive



Macintosh Operating System

- Basic Components
 - Mouse gestures
 - Icons
 - Windows
 - Menus
 - Buttons and dialogs



Why Networks?

- Communication
 - Asynchronous Communication
- Advertisement
- Distance Education

Music Teachers Use Technology

- Printing original or customized scores and parts
- Printing programs, flyers, letters, memos
- Record keeping for students, libraries, equipment
- Rehearsal and performance accompaniments
- CAI for theory, history, music skills, creativity
- Student composing, arranging, improvising
- Communicating with students, parents, colleagues
- Finding information and software on Internet
- Creating presentations and music learning software
- Drill Writing

Profile: Adam Davis

High school orchestra, jazz band, theory

- Preparing teaching materials
 - Uses word processing and graphics software to develop handouts and worksheets for students
 - Uses sequencing and notation software for his own original arrangements for orchestra and jazz ensemble
- Student uses (theory)
 - Use CAI software to develop basic music theory concepts and aural skills
 - Use sequencing software to create original compositions
- Administrative/Communication
 - Developed Web site for music department

Overture
Musicshop
Practica Musica
Listener's Guide
ClarinetWorks
Home Page



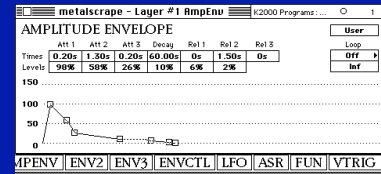
MIDI Controllers: Input

- Keyboard
- Drum
- Guitar
- String
- Wind



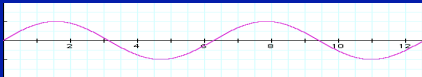
Program Modes

- Changing Individual sounds
- ADSR Envelopes
- LFO, Vibrato, Filters
- Source Sample or Algorithm



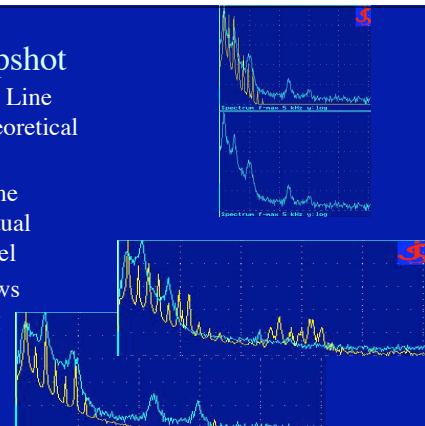
Acoustics

- Represented as Two-Dimensional Graph
 - Sine Wave Common in Nature
 - Y axis SPL or Amplitude
 - X Axis Time



Snapshot

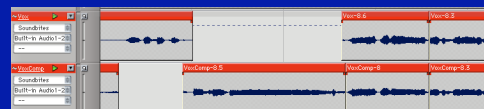
- Light Blue Line Shows Theoretical [a] Vowel
- Yellow Line Shows Actual Sung Vowel
- After-Shows More Ring



Music Notation

- Lyrics
- Chord Progressions
- Text
- Graphics
- Optical Character Recognition
- Pitch to Voltage Conversion
- Intelligent Processing
- Save as Audio File

Digital Audio



Professional Audio

- Input (mic or line)
- Output (to recording device)
- Monitor (for mixing)
- Master (final mix)

Patch bay helps route signals

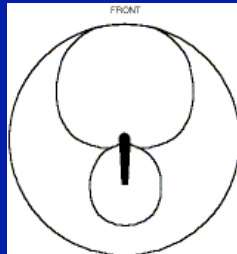


Multimedia Components

- Movies
- Graphic
- Sound
- Music
- Text
- Light Shows

Microphones

- **Maximum side rejection in a unidirectional mic**
- **Maximum isolation--maximum rejection of reverberation, leakage, feedback, and background noise**



Time	Frequency	Amplitude	Distortive
Delay/Echo	EQ	Compressor/Limiter	Distortion
Phase	Filter	Expander/Gate	Overdrive
Flange	Wah	Gain	Exciter
Chorus ->	<-Chorus	Tremolo	Synthesis
Reverb	Vibrato	Mixing	Error
	Loudspeaker Correction		Correction
	Analysis		Noise Cancellation
	Vocoder		Encryption
			TCE
			Pitch Shift
			Decimator

Georgia Southern Facilities



EDMS



Retro Hardware



Smart Practice Rooms



Concert Recording



Demo Software