Working (and Playing!) with REXX and OS/2 Multimedia

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What is Multimedia?

◆ Combining still images (bitmaps), animation, software motion video, text, and/or audio to present information
◆ Principle technologies: CD-ROM, laserdisc, digital audio, MIDI, high resolution displays with more colors
◆ Principle file formats: WAV, MID, and AVI
◆ Multimedia NOT invented by Comptons

...We like to call it ULTIMEDIA

Why use Multimedia?

◆ "It's the market, stupid."
◆ Triggers: to "describe" events
◆ Education/training
◆ Kiosks (point-of-sale)
◆ Presentations and demos
◆ Better human interfaces generally
◆ Entertainment and games

Requirements for OS/2 Multimedia

◆ OS/2 2.1 with Multimedia Presentation Manager/2 (included)
◆ Standard OS/2 hardware requirements
◆ Some additional RAM (to 12 MB) recommended
◆ CD-ROM drive
◆ Audio adapter (Creative Labs, MediaVision, IBM, etc.)
◆ Display with at least 256 colors recommended
◆ Video capture adapter (optional)
◆ Laserdisc player with computer control (optional)

Major Features in MMPM/2 1.1

◆ Multimedia folder
◆ Sound setup object (for system sounds)
◆ Applets

- Volume control
- Drivers
- Sample files
- Lotus 1-2-3 and Excel audio macros
- External function library for REXX and help file

Principle File Formats

- Generally a superset of Windows file formats
- WAV: Digital audio (pulse code modulation, and variants)
- MID: Standard MIDI file format (for instrumental music)
- AVI: Audio-video interleaved (IBM Ultimotion and Intel Indeo)
- Conversion applet for some additional file formats included (AVC, VOC, DIB, DMP, ADPCM, M-Motion)
- High degree of modularity permits addition of more file formats (e.g. FLI/FLC)

Principle REXX Features

- *Multimedia with REXX* help file
- PLAY.CMD
- RECORD.CMD
- Entire MCI (media control interface) command set available, not just subset described in online help
- External function library (MCIAPI.DLL) provides access to MCI command set

Key Limitations

- REXX is unable to deal with loss of device (meaning ACQUIRE EXCLUSIVE must be used)
- REXX program should not hold device exclusive for long
- Unless using PMREXX (or one of the visual REXX builders), MCI commands which require Presentation Manager (such as Ultimotion playback) will fail
- REXX does not receive PM messages (to easily monitor the status of playback and devices)
- MCI's implicit opens are assumed shareable (and not necessarily desired with REXX)

Sample REXX Script

```
/* Load and initialize Multimedia REXX support */
call RXFUNCADD 'mciRxInit','MCIAPI','mciRxInit'
call mciRxInit

/* Open default digital audio device, exclusive use */
rc = mciRxSendString('open waveaudio alias wave wait','RetStr','0','0')

/* Check error, call function to return error string */
if rc <> 0 then
do
```

```
        MacRC = mciRxGetErrorString(rc,'ErrStVar')
        say 'rc =' rc ', ErrStVar =' ErrStVar
end

/* Load a digital audio file */
rc = mciRxSendString('load wave sample.wav wait','RetStr','0','0')

/* Obtain ID for device context that was just opened */
DevID = mciRxGetDeviceID(wave)

say 'DevID =' DevID

/* Set the time format to milliseconds */
call mciRxSendString 'set wave time format ms','RetStr','0','0'

/* Determine whether the microphone connection enable */
call mciRxSendString 'connector wave query type microphone
    wait','RetStr','0','0'

say 'connector query microphone:  RetStr =' RetStr

/* Query length of the opened file, value in ms */
call mciRxSendString 'status wave length wait','RetStr','0','0'

say 'status wave length:  RetStr =' RetStr

/* Play the multimedia file, wait for completion */
call mciRxSendString 'play wave wait','RetStr','0','0'

/* "Rewind" to the beginning of the file */
call mciRxSendString 'seek wave to start wait','RetStr','0','0'

/* Close the device context */
call mciRxSendString 'close wave','RetStr','0','0'

/* Ensure proper termination of Multimedia REXX */
call mciRxExit

exit(0)
```

Live Demos

- PLAY.CMD
- FOR..DO
- Ultimotion
- RECORD.CMD
- Modifications to the sample .CMD files
- Dial 1.1 by Helge Hafting