




ISO MP₃ Decoder



EXPERIMENT 10.4

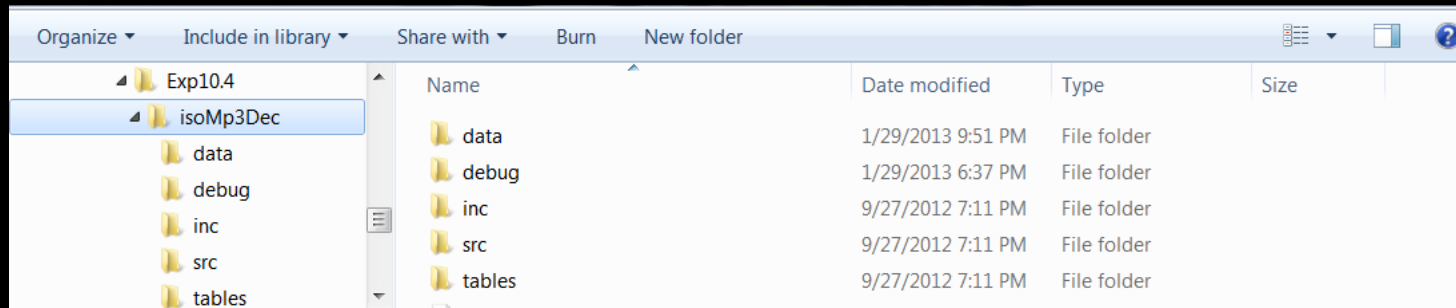


Propose of the experiment

- MP3 decoder is a popular audio decoder used by many audio products and applications. This experiment will show how to build the MP3 decoder from the ISO MP3 codebase.
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Experiment Folder Structure

(Exp10.4 ISO MP3 Decoder Experiment)



- data folder contains test vectors.
- debug folder contains the experiment executable programs.
- inc folder contains header files.
- src folder contains source files.
- tables folder contains constant data.

Folder – Exp10.4

(Contains IsoMp3Dec folder the experiment)

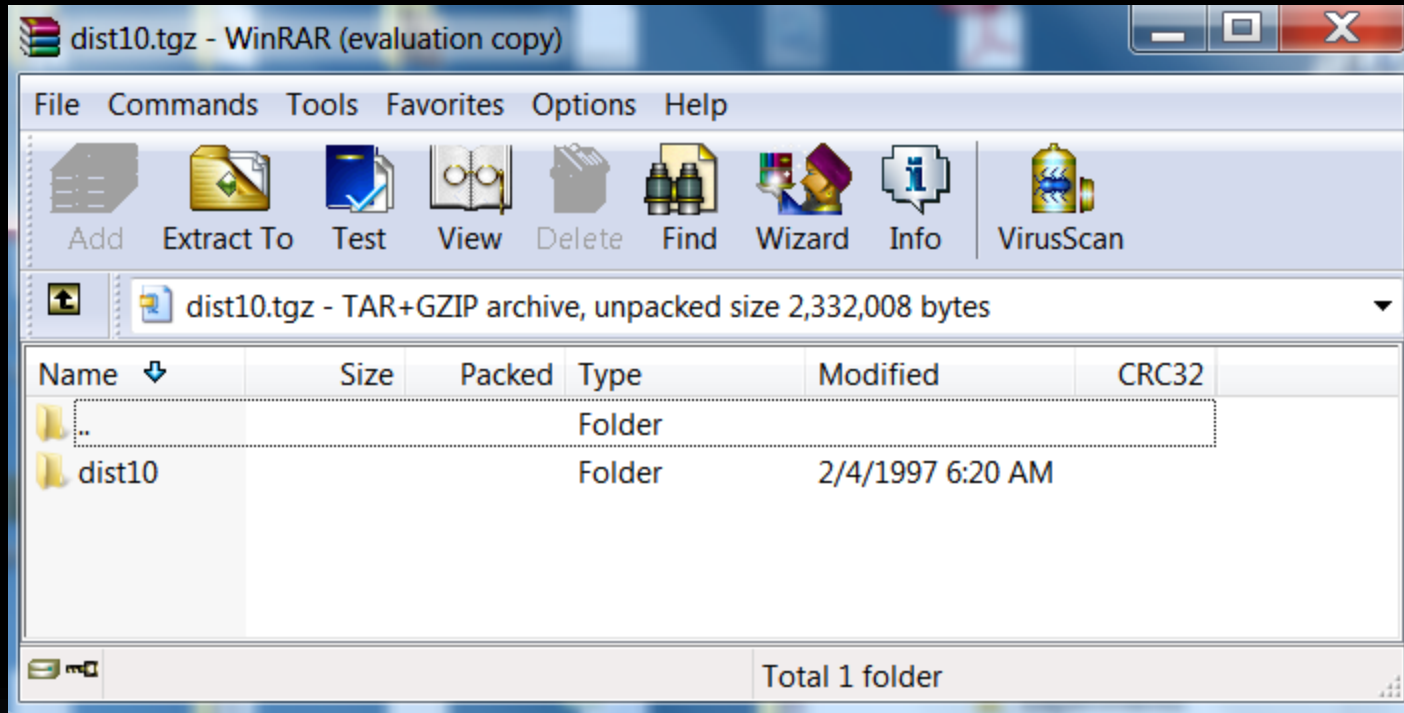
The folder structure and VC project files for the experiment. Provided with the companion software package.

Name	Date modified	Type	Size
data	1/29/2013 9:51 PM	File folder	
debug	1/29/2013 6:37 PM	File folder	
inc	9/27/2012 7:11 PM	File folder	
src	9/27/2012 7:11 PM	File folder	
tables	9/27/2012 7:11 PM	File folder	
IsfDec.dsp	8/30/2005 10:30 PM	DSP File	5 KB
IsfDec.dsw	3/26/2005 9:38 PM	DSW File	1 KB
IsfDec.ncb	10/6/2012 10:33 PM	NCB File	555 KB
IsfDec.opt	11/12/2005 10:56 ...	OPT File	58 KB
IsfDec.plg	11/12/2005 10:20 ...	PLG File	13 KB
IsfDec.sln	10/6/2012 10:10 PM	SLN File	1 KB
IsfDec.suo	10/6/2012 10:33 PM	SUO File	12 KB
IsfDec.vcproj	10/6/2012 10:10 PM	VCPROJ File	8 KB

Prepare Software

- Download **dist10.tgz** from www.mp3-tech.org/programmer/sources/dist10.tgz.
- Untar dist10.tgz . This can be done in two ways.
 - In Windows PC, using WinRAR tool.
 - In Linux PC, using tar command.

WinRAR



- From WinRAR, **File->Open archive** to open dist10.tgz.
- From WinRAR, **Extract To** extract the files to a local folder.
- A folder named dist10 will be created with all the files.

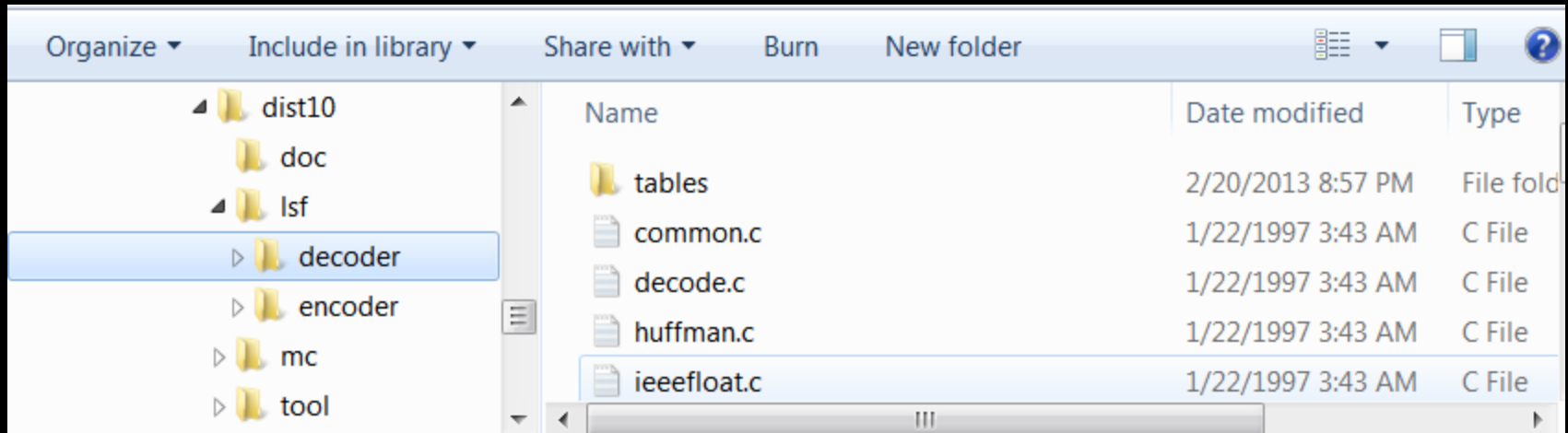
Linux

- Download the dist10.tgz file.
- From command shell use the following command to untar the file:
 - `tar -xvf dist10.tgz`

```
File Edit View Terminal Help
blee@ubuntu:~$ cd Desktop/IsoMp3Dec/
blee@ubuntu:~/Desktop/IsoMp3Dec$ ls
dist10.tgz
blee@ubuntu:~/Desktop/IsoMp3Dec$ tar -xvf dist10.tgz
dist10/
dist10/Readme.1st
dist10/doc/
dist10/doc/readme.1st
dist10/doc/readme.dp.01.txt
dist10/doc/readme.jmz.01.txt
dist10/doc/readme.jmz.02.txt
dist10/doc/readme.jmz.03.txt
dist10/doc/readme.jmz.04.txt
dist10/doc/readme.mc.01.txt
dist10/doc/readme.rb.01.txt
dist10/doc/readme.sn.01.txt
dist10/doc/readme.sr.01.txt
dist10/doc/readme.sr.02.txt
dist10/doc/readme.ss.01.txt
dist10/lsf/
dist10/lsf/decoder/
dist10/lsf/decoder/INSTALL
dist10/lsf/decoder/Makefile
dist10/lsf/decoder/Makefile.in
```

- A folder named dist10 will be created with all the files. Either copy all the files to Windows PC or using makefile with gcc compiler in Linux PC for experiment.

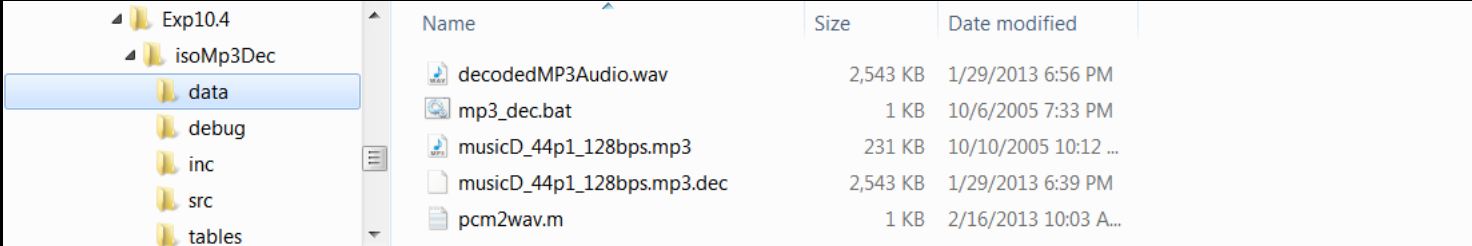
Folder - dist10



- After extract the file dist10.tgz, it creates the folder named dist10. Under the dist10 folder, there are several subfolders.
- Go to the lsf folder, then go to the decoder folder.
 - Copy the following C files to the experiment **src** folder
common.c, decode.c, huffman.c, ieeefloat.c, musicout.c, and portableio.c.
 - Copy the following header files to the experiment **inc** folder
common.h, decode.h, huffman.h, ieeefloat.h, and portableio.h
 - Copy the all the files in the tables folder in the decoder folder to the experiment **tables** folder of the experiment

Folder - data

(Contains test data files and batch file for testing)



Name	Size	Date modified
decodedMP3Audio.wav	2,543 KB	1/29/2013 6:56 PM
mp3_dec.bat	1 KB	10/6/2005 7:33 PM
musicD_44p1_128bps.mp3	231 KB	10/10/2005 10:12 ...
musicD_44p1_128bps.mp3.dec	2,543 KB	1/29/2013 6:39 PM
pcm2wav.m	1 KB	2/16/2013 10:03 A...






The files in the experiment data folder:

- musicD_44p1_128bps.mp3 – MP3 decoder test input file
- musicD_44p1_128bps.mp3.dec – MP3 decoder output PCM file
- musicD_44p1_128bps.mp3.wav – MP3 decoder output in WAV format
- mp3_dec.bat – MP3 decoder test batch file
- pcm2wav.m – MATLAB script to convert PCM to WAV file format

Folder - inc

(Contains header files for the experiment)







The files in the experiment inc folder.

Name	Date modified	Type	Size
 common.h	1/22/1997 4:43 AM	H File	20 KB
 decoder.h	1/22/1997 4:43 AM	H File	9 KB
 huffman.h	1/22/1997 4:43 AM	H File	3 KB
 ieeefloat.h	1/22/1997 4:43 AM	H File	3 KB
 portableio.h	1/22/1997 4:43 AM	H File	4 KB

Folder - src

(Contains C files for the experiment)

The files in the experiment src folder.

Name	Date modified	Type	Size
 common.c	1/22/1997 4:43 AM	C File	47 KB
 decode.c	1/22/1997 4:43 AM	C File	69 KB
 huffman.c	1/22/1997 4:43 AM	C File	11 KB
 ieeefloat.c	1/22/1997 4:43 AM	C File	29 KB
 musicout.c	1/22/1997 4:43 AM	C File	27 KB
 portableio.c	1/22/1997 4:43 AM	C File	8 KB

Folder - tables

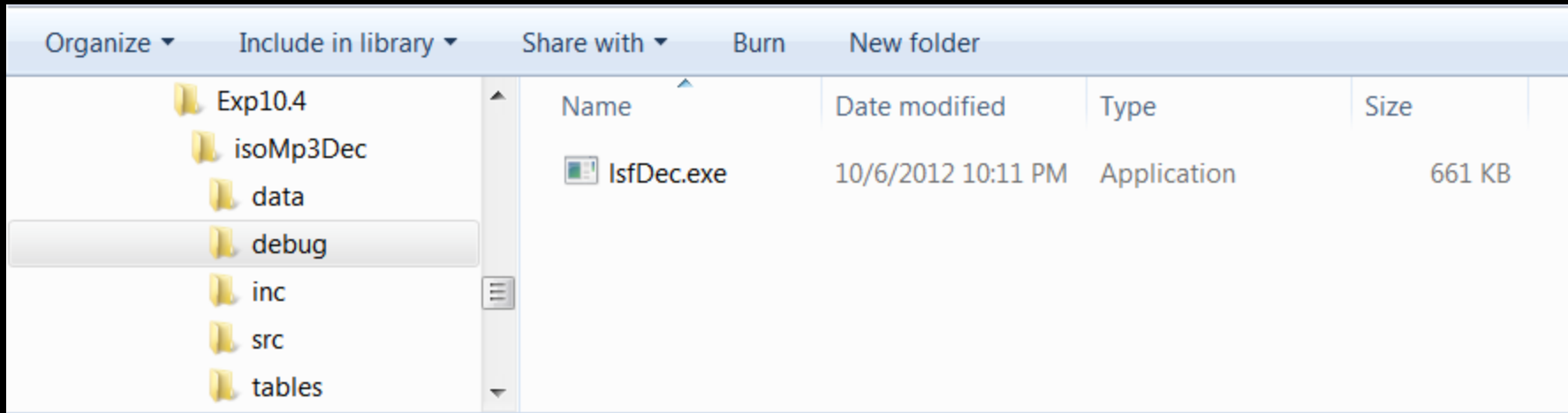
(Contains C files for the experiment)

The files in the experiment tables folder.

Name	Date modified	Type	Size
1cb0	1/22/1997 4:43 AM	File	1 KB
1cb1	1/22/1997 4:43 AM	File	1 KB
1cb2	1/22/1997 4:43 AM	File	1 KB
1cb4	1/22/1997 4:43 AM	File	1 KB
1cb5	1/22/1997 4:43 AM	File	1 KB
1cb6	1/22/1997 4:43 AM	File	1 KB
1th0	1/22/1997 4:43 AM	File	3 KB
1th1	1/22/1997 4:43 AM	File	2 KB
1th2	1/22/1997 4:43 AM	File	3 KB
1th4	1/22/1997 4:43 AM	File	4 KB
1th5	1/22/1997 4:43 AM	File	4 KB
1th6	1/22/1997 4:43 AM	File	4 KB
2cb0	1/22/1997 4:43 AM	File	1 KB
2cb1	1/22/1997 4:43 AM	File	1 KB
2cb2	1/22/1997 4:43 AM	File	1 KB
2cb4	1/22/1997 4:43 AM	File	1 KB
2cb5	1/22/1997 4:43 AM	File	1 KB
2cb6	1/22/1997 4:43 AM	File	1 KB
2th0	1/22/1997 4:43 AM	File	3 KB
2th1	1/22/1997 4:43 AM	File	3 KB
2th2	1/22/1997 4:43 AM	File	3 KB
2th4	1/22/1997 4:43 AM	File	4 KB
2th5	1/22/1997 4:43 AM	File	4 KB
2th6	1/22/1997 4:43 AM	File	4 KB
absthr_0	1/22/1997 4:43 AM	File	6 KB
absthr_1	1/22/1997 4:43 AM	File	7 KB
absthr_2	1/22/1997 4:43 AM	File	7 KB
alloc_0	1/22/1997 4:43 AM	File	5 KB
alloc_1	1/22/1997 4:43 AM	File	5 KB

Folder - Debug

(Contains MP3 decoder executable program)



Using Microsoft Visual C compile the program and place the executable program in the Debug folder.