**DSP Lab- Assignment 4**

To run the code follow the following steps:

1. Create a wav file titled “abc.wav” and paste it in the folder where the code is located.

**Note :** Each audio sample should be quantised with 16 bit quantisation.

1. Run the program “dsplab.c” from the terminal using the command : gcc dsplab.c –lm. Then type the following command: “./a.out”
2. This should create a compressed file titled “abc\_cmprsd.wav”. The program converts the sixteen bit audio sample of abc.wav to fifteen bit sample by removing the least significant bit.
3. To decompress the file run the code in dsplab1.c using the command: gcc dsplab1.c –lm from the terminal. Then type the following command: “./a.out”
4. This should create the file “abc\_dcprsd.wav”. It will have file size same as that of the original one and sound quality will also be same with imperceptible difference in sound quality. This code appends a zero in the LSB position.

**Results Obtained:**

The code was run on a wav file of size 589 KB. The size of the compressed file was 552 KB. The decompressed file had the same size as the original file (589 KB) and the sound quality appeared unaltered.

The sample files on which the code was run have been included with the submission.

Note: the code generates 3 temporary file: “tempo.txt”, “temper.txt” and “tempos.txt”. These files may be deleted after the code has finished executing.

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