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/* cc genwav4c.c -lm, 和音 */
#include <stdio.h>
#include <math.h>
/* 5 秒 */
#define SIZE (4*44100*5)
int cegL(unsigned char data[], int level, int from, int length);

int main() {
    FILE *fp2;
    char h[44]={0x52,0x49,0x46,0x46, //RIFF
                0x84,0x56,0x08,0x00, // ファイルのサイズ-8 ***
                0x57,0x41,0x56,0x45, //WAVE
                0x66,0x6d,0x74,0x20, //fmt
                0x10,0x00,0x00,0x00, // linear PCM
                0x01,0x00, // linear PCM
                0x02,0x00, // stereo
                0x44,0xac,0x00,0x00, // sampling rate 0xac44=44100
                0x10,0xb1,0x02,0x00, // byte per second, 44100*4
                0x04,0x00, // 16 bit stereo
                0x10,0x00, // bit/sample
                0x64,0x61,0x74,0x61, // data
                0xb8,0x55,0x08,0x00}; // data部分のサイズ.
    unsigned char data[SIZE];
    int c;
    int i;
    int filesize = (44+SIZE)-8;
    int datasize = SIZE;
    fp2 = fopen("mysound.wav", "w");
    /* ファイルサイズを自動計算 */
    h[4] = filesize % 0x100; h[5] = (filesize/0x100) % 0x100;
    h[6] = (filesize/0x10000) % 0x100; h[7] = (filesize/0x1000000) % 0x100;
    h[40] = datasize % 0x100; h[41] = (datasize/0x100) % 0x100;
    h[42] = (datasize/0x10000) % 0x100; h[43] = (datasize/0x1000000) % 0x100;

    /* set data in the array data */
    for (i=0; i<SIZE; i++) data[i]=0;
    cegL(data, 2000, 0, 4*44100); //0秒から4秒間, ドミソの和音

    for (i=0; i<44; i++) fputc(h[i], fp2);
    for (i=0; i<SIZE; i++) fputc(data[i], fp2);
    fclose(fp2);
}

int cegL(unsigned char data[], int level, int from, int length) {
    int i, p;
    int w;
    if (4*(from+length) >= SIZE) {
        fprintf(stderr, "Error\n"); return(-1);
    }
    for (i=from; i< from+length; i++) {
        /* 和音を作るには ドの周波数 523.25, ミの周波数 659.26, ソの周波数 783.99
           を重ねた sin 波を作れば良い.
        */
        w = (int) level*(sin(2*3.14*523.25*((double) i)/44100.0)
                        +sin(2*3.14*659.26*((double) i)/44100.0)
                        +sin(2*3.14*783.99*((double) i)/44100.0));
        p = i*4;
        /* printf("%d\n", w); */
        if (w < 0) w = w+0x10000;
        data[p] = w % 0x100;
        data[p+1] = w/0x100;
    }
}

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    }  
    return(0);  
}  
  
/*  
  音階と周波数の関係を調べるには, [音階 周波数] 検索  
*/
```