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#include <stdio.h>
#include <stdlib.h>
#include "ppmtools.h"

/*
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*/

#define MAXIMAGE 512*512*3
unsigned char im[MAXIMAGE], out[MAXIMAGE];

int main(int argc, char *argv[])
{
    int i, j, width, height;

    if(argc != 3) {
        fprintf(stderr, "Usage %s in.ppm out.ppm\n", argv[0]);
        exit(1);
    }
    if(readppm(argv[1], im, &width, &height) < 0) {
        fprintf(stderr, "%s: read of %s failed\n", argv[0], argv[1]);
        exit(1);
    }
    for(i=0; i<height; i++) {
        for(j=0; j<width; j++) {
            unsigned char r, g, b;
            r = im[i*(3*width)+j*3 + 0];
            g = im[i*(3*width)+j*3 + 1];
            b = im[i*(3*width)+j*3 + 2];
            out[i*(3*width)+j*3 + 0] = ((r+g+b)/3);
            out[i*(3*width)+j*3 + 1] = g;
            out[i*(3*width)+j*3 + 2] = b;
        }
    }
    if(writeppm(argv[2], out, width, height) < 0) {
        fprintf(stderr, "%s: write of %s failed\n", argv[0], argv[2]);
        exit(1);
    }
    return 0;
}

```