

```
1  #include <opencv2/opencv.hpp>
2  #include <iostream>
3  #include <stdio.h>
4  #include <stdlib.h>
5
6  using namespace std;
7  using namespace cv;
8
9
10 void ReadBytes(char *, char *);
11
12 /*
13 void ReadBytes_1(char *, char *);
14 void calcHistogram(IplImage *, int *);
15 void drawHistogram(const char *, int *);
16 */
17
18
19 int main(int argc, char ** argv) {
20     ReadBytes(argv[1], argv[2]);
21     //ReadBytes_1(argv[1], argv[2]);
22     return 0;
23 }
24
25 //////////////////////////////////////
26 void ReadBytes(char * filename, char * out) {
27     FILE * f = fopen(filename, "rb");
28
29     if(f == NULL)
30         throw "Argument Exception";
31
32     unsigned char info[34];
33     fread(info, sizeof(unsigned char), 34, f);    // read the 34-byte header
34
35     // extract image height and width from header
36     int width = *(short*)&info[30];
37     int height = *(short*)&info[28];
38     int IMOD = *(short*)&info[32];
39
40     cout << endl;
41     cout << "Width: " << width << endl;
42     cout << "Height: " << height << endl;
43     cout << "IMOD: " << IMOD << endl;
44     cout << "Effective Height" << height * (IMOD + 1) << endl;
45
46
47     uchar data[height * (IMOD + 1)][width];
48     unsigned char temp;
49
50     for(int i = 0; i < height * (IMOD + 1); i++) {
51         for(int j=0; j < width; j++) {
52             fread(&temp, sizeof(unsigned char), 1, f);
53             data[i][j] = temp;
54         }
55     }
56
57     fclose(f);
58 }
```

```

59     Mat MMM = Mat(height * (IMOD + 1), width, CV_8U, data);
60     MMM.convertTo(MMM, CV_32F, 1, 0);
61
62     imwrite(out, MMM(Rect(9, 0, width - 10, height * (IMOD + 1))));
63 }
64
65
66
67
68
69
70 /*
71 void ReadBytes_1(char * filename, char * histName) {
72     IplImage * img = cvLoadImage(filename, CV_LOAD_IMAGE_GRAYSCALE);
73     int hist[256];
74     calcHistogram(img, hist);
75     drawHistogram(histName, hist);
76 }
77
78 void func(uchar c, int * h) {
79     unsigned x = c;
80     (*(h + x))++;
81 }
82
83 void calcHistogram(IplImage * gray, int hist []) {
84     /// Initialize histograms
85     for (int i = 0; i < 256; i++)
86         hist[i] = 0;
87
88     /// Calculate histogram
89     for(int i = 0; i < gray->height; i++) {
90         char * ptr = gray->imageData + i*gray->widthStep;
91         for(int j = 0; j < gray->width; j++) {
92             func((uchar)(*ptr), hist);
93             ptr++;
94         }
95     }
96 }
97
98 void drawHistogram(const char * histName, int * hist) {
99     int st = 4;           // To separate lines in the histograms, for better look ;)
100    int dep = 256;
101
102    /// Create image for the histogram
103    IplImage * his = cvCreateImage(cvSize(st * dep, 600), IPL_DEPTH_8U, 3);
104    cvSet(his, cvScalar(0,0,0));           // Initialize image (all black)
105    his->origin = IPL_ORIGIN_BL;           // Set the origin in the bottom left corner
106
107    for (int i = 0; i < 8 ; i++) {
108        int x = dep / 8;
109        cvLine(his, cvPoint(i * x * st, 0), cvPoint(i * x * st, 600), cvScalar
110            (122,122,122), 1, 4);
111    }
112
113    /// Draw the histogram
114    for (int i = 0; i < dep; i++)
115        if (hist[i] != 0)
116            cvLine(his, cvPoint(i * st, 0), cvPoint(i * st, hist[i] / 10), cvScalar

```

```
        (255, 0, 0), 1, 4);  
116  
117     cvSaveImage(histName, his);  
118  
119     cvReleaseImage(&his);  
120 }  
121 */
```