1. #include <stdio.h> /\* Sobel.c \*/
2. #include <math.h>
4. int pic[256][256];
5. int outpicx[256][256];
6. int outpicy[256][256];
7. int maskx[3][3] = {{-1,0,1},{-2,0,2},{-1,0,1}};
8. int masky[3][3] = {{1,2,1},{0,0,0},{-1,-2,-1}};
9. double ival[256][256],maxival;
11. main(argc,argv)
12. int argc;
13. char \*\*argv;
14. {
15. int i,j,p,q,mr,sum1,sum2;
16. double threshold;
17. FILE \*fo1, \*fo2, \*fp1, \*fopen();
18. char \*foobar;
20. argc--; argv++;
21. foobar = \*argv;
22. fp1=fopen(foobar,"rb");
24. argc--; argv++;
25. foobar = \*argv;
26. fo1=fopen(foobar,"wb");

29. argc--; argv++;
30. foobar = \*argv;
31. threshold = atof(foobar);
33. for (i=0;i<256;i++)
34. { for (j=0;j<256;j++)
35. {
36. pic[i][j] = getc (fp1);
37. pic[i][j] &= 0377;
38. }
39. }
41. mr = 1;
42. for (i=mr;i<256-mr;i++)
43. { for (j=mr;j<256-mr;j++)
44. {
45. sum1 = 0;
46. sum2 = 0;
47. for (p=-mr;p<=mr;p++)
48. {
49. for (q=-mr;q<=mr;q++)
50. {
51. sum1 += pic[i+p][j+q] \* maskx[p+mr][q+mr];
52. sum2 += pic[i+p][j+q] \* masky[p+mr][q+mr];
53. }
54. }
55. outpicx[i][j] = sum1;
56. outpicy[i][j] = sum2;
57. }
58. }
60. maxival = 0;
61. for (i=mr;i<256-mr;i++)
62. { for (j=mr;j<256-mr;j++)
63. {
64. ival[i][j]=sqrt((double)((outpicx[i][j]\*outpicx[i][j]) +
65. (outpicy[i][j]\*outpicy[i][j])));
66. if (ival[i][j] > maxival)
67. maxival = ival[i][j];
69. }
70. }


74. for (i=0;i<256;i++)
75. { for (j=0;j<256;j++)
76. {
77. ival[i][j] = (ival[i][j] / maxival) \* 255;
78. fprintf(fo1,"%c",(char)((int)(ival[i][j])));
80. }
81. }
83. }