Histogram Specification / Matching.

Perform the Histogram Specification

Original Image

gray level	0	1	2	3	4	5	6	7
No of Pixel	8	10	10	2	12	16	4	2

Desired Image.

gray level	0	1	2	3	4	5	6	7
No of Pixel	0	0	0	0	20	20	16	8

Histogram equilization for Original Image

gray level	No of Pixels	PDF (n_k/N)	CDF	CDF×L-1	R
0	8	0.13	0.13	0.91	1
1	10	0.16	0.29	2.03	2
2	10	0.16	0.45	3.15	3
3	2	0.03	0.48	3.36	3
4	12	0.18	0.66	4.62	5
5	16	0.25	0.91	6.37	6
6	4	0.06	0.97	6.79	7
7	2	0.03	10	7	7

Histogram equilization for Target image

gray level	No of pixel	PDF (mk/N)	CDF	CDF×L-1	SK	Rand off
0	0	0	0	0	0	0
1	0	0	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	0	0	0
4	20	0.31	0.31	2.17	2	2
5	20	0.31	0.62	4.34	4	4
6	16	0.25	0.87	6.09	6	6
7	8	0.13	1.0	7	7	7

Modified Image

gray level	0	1	2	3	4	5	6	7
No of pixel	0	0	0	0	18	12	28	6

Mapping

gray scale	H	S	Map
0	1	0	4
1	2	0	4
2	3	0	5
3	3	0	5
4	5	2	6
5	6	4	6
6	7	6	7
7	7	7	7

Modified Image

Gray Scale	0	1	2	3	4	5	6	7
No of Pixel	0	0	0	0	18	12	28	6