IIT DHARWAD
OS Lab Assignment 1

Nilesh Kumar (CS23BT006) and Sunny Raj (CS23BT054)

1 Average Execution Times

Table 1: Average Execution Times for Different Image Processing Operations (in milliseconds)

Operation	180×450	393×786	575×1024	910×1280	1000×1500	1500×2271	2470×3750
Reading Image	9.4	29.6	74.0	157.8	208.0	408.2	1041.6
Smoothening	19.2	75.6	172.4	366.4	450.8	1064.8	2741.2
Detail Finding	7.6	32.2	76.4	142.6	198.6	434.2	1205.0
Sharpening	7.2	28	74.4	143.6	175.2	401.6	1081.0
Writing Back	14.2	45.6	75.0	139.8	161.6	327.8	913.8

2 Conclusion

The performance analysis shows that the image processing application scales efficiently with image size. Processing time increases approximately linearly with the number of pixels, and the time per pixel decreases for larger images, indicating good cache utilization. The smoothening operation requires the most computational time among all operations.