

Sa se scrie o aplicatie care sa realizeze o procesare de imagini.

Cerintele temei:

- Tema este un proiect
- Continutul lucrarii trebuie sa contina toate elementele unui proiect (introducere, descrierea aplicatiei cerute, partea teoretica, descrierea aplicatiei (structurala – arhitecturala si functionala), descrierea modulelor, evaluare performante, concluzii, bibliografie).
- Incercati o distributie a temelor. Nu sunt acceptabile lucrari care seamana prin continut (nici macar partial).

Cerintele aplicatiei:

- Imaginea sursa este BMP (fisier) – 24bit BMP - RGB
- Operatii de intrare de la tastatura
- Operatii de iesire (consola)
- Operatii de lucru cu fisiere

Etapale de executie sunt:

- citire de la tastatura informatii de identificare fisier sursa (fisiere sursa)
- citire fisier
- procesare imagine
- citire de la tastatura informatii de identificare fisier destinatie
- scriere fisier rezultate
- inregistrare timp de executie fiecare etapa
- afisare rezultate timp de procesare fiecare etapa

Teme de Procesare:

1. Converting Color Image to Gray-Scale Image – Average method
2. Normalize colors
3. Negative Image
4. Sobel Operator
5. Prewitt Operator
6. Roberts Operator
7. Image Sharpening (convolution mask)
8. Image Smoothing (convolution mask)
9. Convert Gray-Scale Image to Binary image (Static Threshold)
10. Image resizing (Zooming +/-) – pixel replication method
11. Image mirroring

12. Binary Operation (AND, OR, XOR) between two images
13. Gray Level Histogram of a Gray-Scale Image
14. Decrease color depth Gray-Scale Image
15. Rotate Image (90, 180, 270)
16. Translate Image (X – Horizontal, Y – Vertical – prescribed by user)
17. Edge Extraction
18. Converting Color Image to Gray-Scale Image – Weighted method (luminosity method)
19. Image resizing (Zooming +/-) – keeping aspect ratio. Pixel replication method
20. Image resizing (Zooming +/-) – keeping aspect ratio. Zero order hold method
21. Image resizing (Zooming +/-) – keeping aspect ratio. Zooming K times method
22. Image Brightness modification
23. Image Contrast modification
24. Gray Level Histogram Sliding (+/-)
25. Gray Level Histogram Stretching (+/-)
26. Linear Gray Level Transform
27. Logarithmic Gray Level Transform
28. Power-Law Gray Level Transform
29. Laplacian Operator (Positive/Negative)
30. Eroarea unei imagini binare
31. Dilatarea unei imagini binare
32. Extragerea conturului intr-o imagine binara