IMAGE PROCESSING PROJECT

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INTRODUCTION

This project is an interactive image processing application designed to apply a wide range of operations on digital images through a user-friendly graphical interface.
It allows users to load an image, convert it to grayscale, add different types of noise, and apply transformations including brightness and contrast adjustment, histogram operations, filtering, edge detection, and morphological operations.
The tool also supports advanced techniques such as line and circle detection using Hough Transform.
The design focuses on making image processing accessible and visual for learning and experimentation purposes

PROJECT OBJECTIVES

- Providing an intuitive interface to explore image processing techniques
- Allowing real-time visualization of transformations and filtering
- Supporting both basic (like brightness/contrast) and advanced functions (like edge and shape detection)

PROJECT FEATURES

The project offers a variety of image processing features through an easy-to-use interface, including:

- Image loading and color conversion
- Noise addition (Salt & Pepper, Gaussian, Poisson)
- Point transforms (brightness, contrast, histogram)
- Local transforms and edge detection (Sobel, Canny, etc.)
- Hough Transform for line and circle detection
- Morphological operations (dilation, erosion, etc.)
- Visual output for original, noisy, and processed images

PROJECT OVERALL

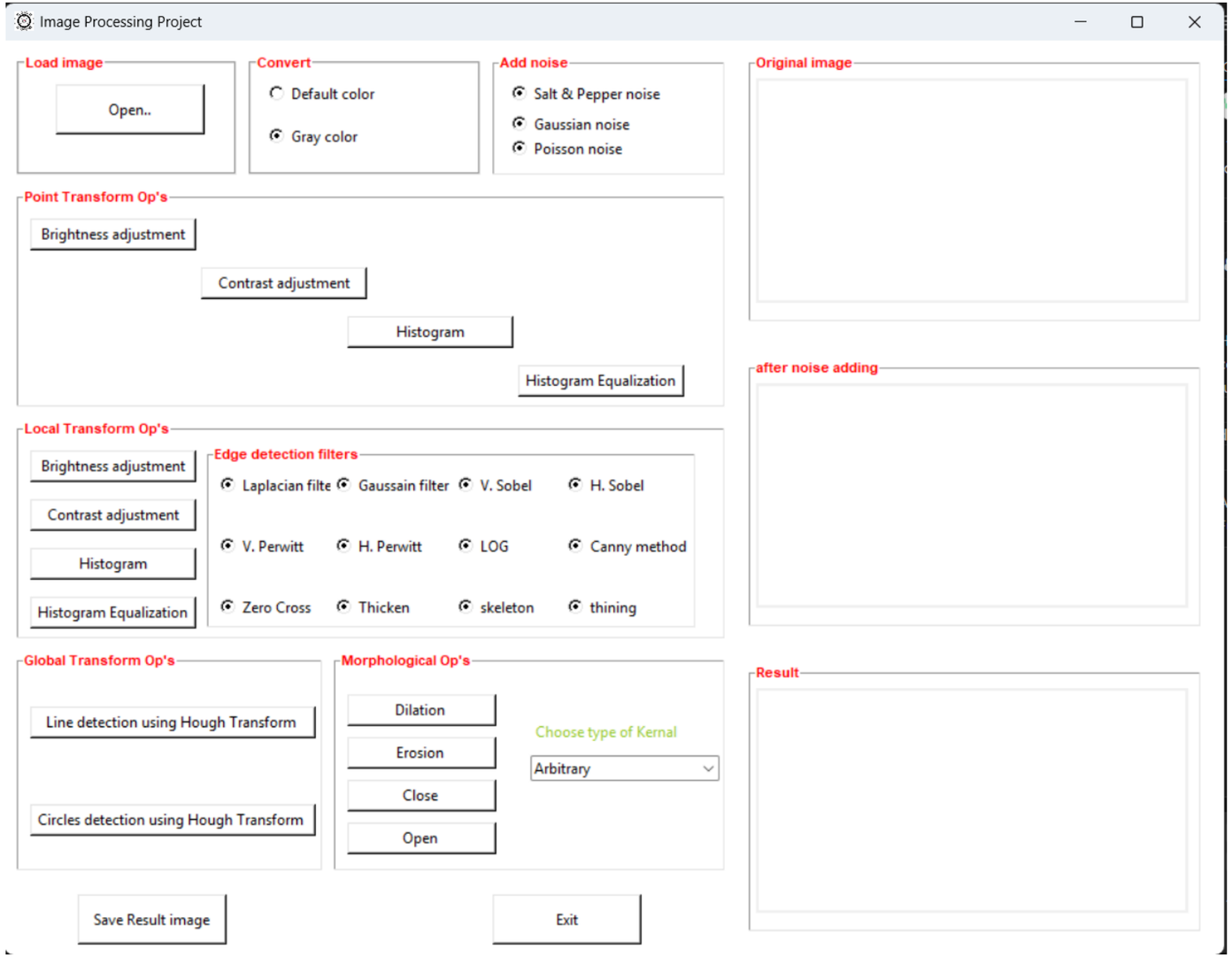


IMAGE LOADING AND PREPROCESSING

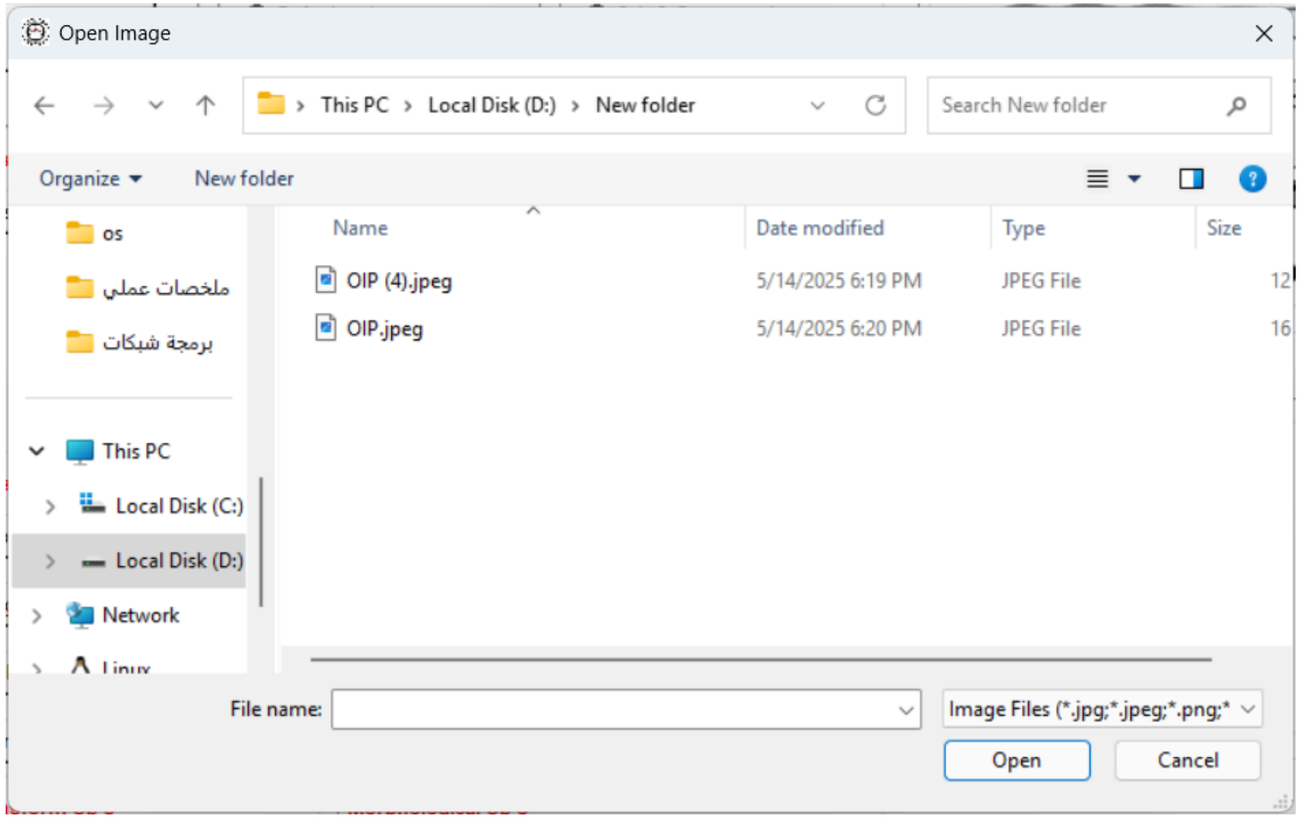
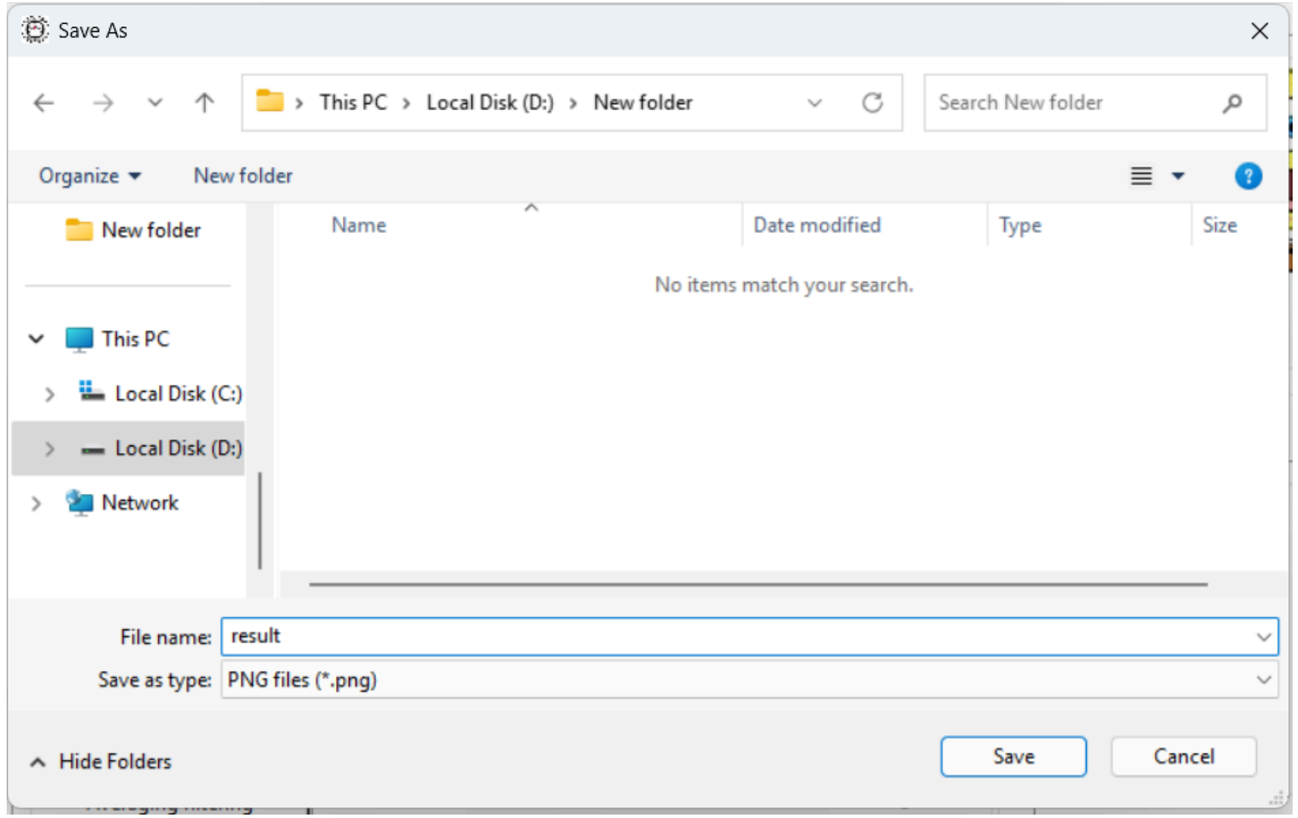


IMAGE SAVING



THANK YOU