151248620: OBJECT-ORIENTED PROGRAMMING II

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LAB FINAL REPORT

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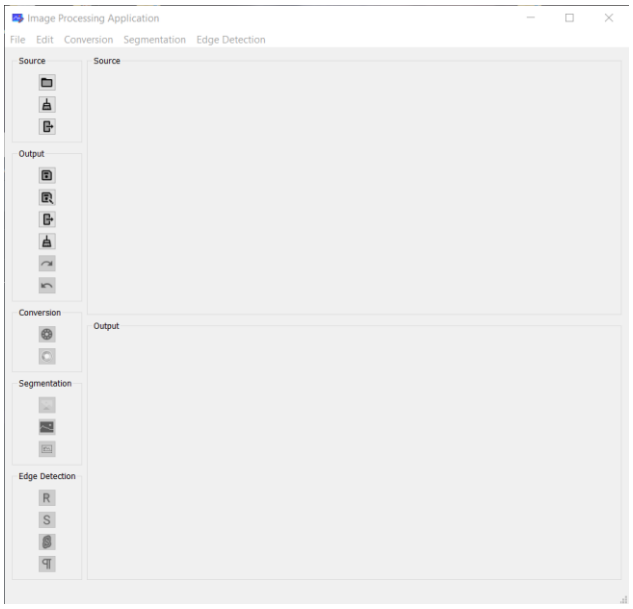
In this assignment, an interface has been designed to perform image processing operations on an image. The interface has been coded to utilize various image processing techniques and bring the image to the desired format. The "scikit-image" library has been primarily used for image processing functionalities. Additionally, other necessary libraries such as Pyqt5, matplotlib, and PIL have been employed to integrate the image processing capabilities into the interface.

The interface of the application is depicted in Figure 1.



(Figure 1)

The interface is divided into 5 menus: File, Edit, Conversion, Segmentation, and Edge Detection. These menus provide various functions to perform different operations on images.

The File menu includes basic functions such as opening and saving images.

The Edit menu contains functions to clear the "Source" and "Output" pictures and navigate back and forth.

The Conversion menu offers functions to convert the source image to HSV and grayscale.

The Segmentation menu includes functions for Multi-Otsu Thresholding, Chan-Vese Segmentation, and Morphological Snakes.

The Edge Detection menu provides corner-finding functions like Robert, Sobel, Scharr, and Prewitt.

Additionally, the application is organized into 5 groups with corresponding buttons: "Source," "Output," "Conversion," "Segmentation," and "Edge Detection." The Output section displays the image after applying operations, while the Source section contains the original image. This arrangement creates a simple and user-friendly interface.

Moreover, shortcuts are available for each necessary operation, ensuring ease of use.