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Final Project Design

28 April 2024

Project: Erinstagram!

Background:

Erinstagram is an image processing program aimed at manipulating grayscale images. The program operates on numerical values representing pixel brightness levels, with characters used to render or display the images.

Requirements

Main Function:

Functionality:

- Orchestrates the program flow.
- Displays a menu of options to the user.
- Invokes corresponding functions based on the user's choice.

Load Image Function:

Functionality:

- Prompts the user to input a file name.
- Reads the contents of the image file and stores it in memory.
- Displays a confirmation message upon successful loading.

Display Current Image Function:

Functionality:

- Retrieves the current image stored in memory.
- Displays the image to the user for viewing.

Edit Image Function:

Functionality:

- Presents a submenu of editing options to the user.
- Based on the user's choice, it invokes specific editing functions.

Crop Image Function:

Functionality:

- Allows the user to specify a smaller section of the original image.
- Displays the edited image after cropping.

Dim Image Function:

Functionality:

- Reduces the brightness of each pixel in the image by one step.
- Displays the edited image with decreased brightness.

Brighten Image Function:

Functionality:

- Increases the brightness of each pixel in the image by one step.
- Displays the edited image with increased brightness.

Extra Credit: Rotate 90 Degrees Function:

Functionality:

- Rotates every pixel in the image to create a rotation effect.
- Displays the edited image with the rotation applied.

Save Edited Image Function:

Functionality:

- Prompts the user to save the edited image to a file.
- If the user agrees, prompts for a file name and saves the edited image.
- Provides a confirmation message upon successful saving.

Algorithm: Main function

1. Display welcome message.
2. Enter a loop to prompt the user for input and execute corresponding actions until the user chooses to exit.
3. Within the loop: Display the main menu options: Load Image, Display Current Image, Edit Image.
4. Prompt the user to choose an option.
5. Based on the user's choice
 - Invoke the corresponding function.
 - If the user chooses to exit, terminate the program.