Data

Image - 2D array of any "size"
User Choice - char
File Name - file pointer, File IO
Brightness Value - int
Rotation - int

Overview

This is a program designed for manipulating grayscale images represented as numerical values. Users are prompted with a menu where they can load images, display images, edit them through various operations like cropping, dimming, and brightening, and/or save the edited versions. Once saved, the user should be returned to the main menu. Additionally, an extra credit feature allows rotating the image by 90 degrees.

Functions

main()
Data: Image variable is initialized to represent the current image data. Variables for user choice.
Functionality: Initialize the image variable. Display the menu options and prompt the user for their choice. Based on the user's input, the corresponding function is executed. If the user selects to exit, the program terminates. If the user chooses to edit the image, the editing menu is displayed, and the selected editing function is executed. After editing, if the user agrees to save the edited image, they are prompted for a file name, and the image is saved. The function returns to the main menu.

loadImage()
Input Parameters: File pointer, int rows, int columns, int field 2D array
Returned Output: none
Functionality: Load values from file into field 2D array.

displayImage()
Input Parameters: int rows, int columns, int field 2D array, char moves 2D array
Returned Output: none
Functionality: Display values from file onto field 2D array

editImage()
Input Parameters:
Returned Output: none
Functionality: Display editing menu options, prompt user for choice, perform selected choice on image data, display edited image, prompt user to save edited image.

cropImage()
Input Parameters: int rows, int columns, char moves 2D array
Returned Output: none
Functionality: Prompt user with what smaller section of the original image they want to use as the new image, perform action on image data.

dimImage()
Input Parameters: int rows, int columns, char moves 2D array
Returned Output: none
Functionality: Iterate through image pixels and decrease the brightness level by one step.

brightenImage()
Input Parameters: int rows, int columns, char moves 2D array
Returned Output: none
Functionality: Iterate through image pixels and increase the brightness level by one step.

OR

brightnessOfImage()
Input Parameters: int rows, int columns, char moves 2D array
Returned Output: none
Functionality: Prompt user to either brighten or dim image, depending on user input, iterate through image pixels and either decrease or increase the brightness level by one step.

rotateImage()
Input Parameters: int rows, int columns, char moves 2D array
Returned Output: none
Functionality: Prompt user for direction of rotation, …