Design Document
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Image Processing

Data:

Image- 2D Array
Cropped Versions- 2D Arrays
Dimmed Versions- 2D Arrays
Brightened Versions- 2D Arrays

User interaction:

User will be prompted to give the system a file with the image they would like to use. Then they will be prompted with a menu of options including cropping, dimming, or brightening the image provided. They will be prompted to save the new version of their image and then prompted to either edit the image again, enter a new image, or exit the program.

Functions:

Main()
Data: File for the image and player choices.
Functionality: Display the first prompt, display the menu for editing, display the new image, prompt to edit again or send in new image.

LoadImage()
Input Parameters: File pointer, int rows, int columns, int 2D array
Returned Output: None
Functionality: Load image in file into 2D array

charArray()
Input Parameters: int rows, int columns, int 2D array
Returned Output: none
Functionality: Create a second array that stores the character values for the brightness of each cell on the array and update it with each edit.

CropImage()
Input Parameters: File pointer, int rows, int columns, int 2D array
Returned Output: 2D array
Functionality: Prompt the user to choose a section of the image they would like to use to create an edited image and then replace the image with only that smaller section.

DimImage()
Input Parameters: File pointer, int rows, int columns, int 2D array
Returned Output: 2D Array
Functionality: Prompt the user to choose how many “steps” dimmer they want the image and then reduce the value of each cell of the array by that much. Save the new values of each cell and display the corresponding character.

BrightenImage()
Input Parameters: File pointer, int rows, int columns, int 2D array
Returned Output: 2D Array
Functionality: Prompt the user to choose how many “steps” brighter they want the image and then increase the value of each cell of the array by that much. Save the new values of each cell and display the corresponding character.

getChoice()
Input Parameters: File pointer
Returned Output: int
Functionality: Continue to prompt the user with the editing menu every time they finish with one edit until they chose to exit to the main menu