

Discussion Activity: Understand the “PhotoLab” program

Please write down your understandings on the following questions.

1. What is the input and output of the “PhotoLab” Program? How would you design the menu for this program? Which types of control flow would you use for the program menu?

Input: user options, the image file

Output: the processed images, the messages shown on the screen.

The menu can be design in the same way as the calculator assignment.

Use repetition statement with switch-case for the menu.

2. A photo is a two-dimensional object. Which type of data structure would you use to represent a photo in C? How to use this data structure to represent a photo with colors? Assume that the width of the photo is 640, the height of the photo is 425, how to define the variables in C to represent the color photo? We need to scan the photo in order to perform certain manipulations on it, e.g. change it to black&white, flip the photo, which type of control flow would you use to scan the photo? How?

Two-dimensional arrays.

Please refer to the discussion slides for the rest of the questions.

3. How may functions would you like to use for this program? Please name them and describe their functionalities. There are two different ways to pass arguments to functions in C. Please name these two and use one of your functions to describe the difference between them.

Please refer to section 1.4.1 of assignment5 for the function prototypes.

Pass by value vs. pass by reference.

When calling the functions that are listed in section 1.4.1 of assignment5, the arguments are all passes by references since they are all arrays.

Please refer to the slides of lecture7 for the differences between these two types of argument passing.