

CyberLink Photo Director 8 Ultra Review ([get PhotoDirector](#))

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In 2018 Human Computer Interaction class by Prof. Gerard Jounghyun Kim, I had a chance to do an “interface review” of a picture organizing software, where I chose CyberLink Photo Director 8 Ultra because the software has been selected as top 3 in [2018 TopTenReviews](#).

First, CyberLink has done a good job in having the fonts, background colors are very similar to Adobe Photoshop CC. Imitating much popular and familiar UI makes the users easily get used to the software. Everything is designed to minimize memory load and have icons that users can easily and intuitively guess what each button does. I do not have to memorize which buttons have what features. They did a very neat job on placing the icon and features on the left-hand side of the screen that does not take large amount of screen space. The rest of the space is allocated to the images, which is important when there are lots of images to edit.

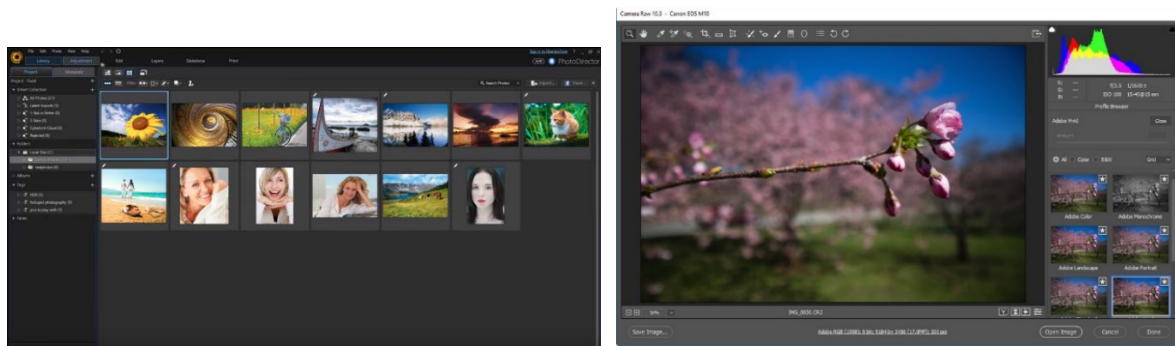


Figure 1 - Left is CyberLink PhotoDirector, right is Adobe Photoshop CC.

Another interesting feature that PhotoDirector provides is that there is “Smart Collection” on the left side. Depending on tags that the pictures have, PhotoDirector sorts and filters as collections. User can also add customized filters too, which makes it easier for user to categorize or search for images when necessary. The left-hand tab is consistent throughout the software, and simply extends downward so that the size of working sections does not change.

I personally found it interesting that user can differentiate if a photo has been photoshopped or not by a symbol at left top side of each image. I sometimes need to use original image, but sometimes it is hard to remember which image is original or photoshopped one.

However, there was some confusion at one of the tabs. Because I am not a professional designer, I am confused on what difference does “adjustment” and “edit” have as seen below. These two words are synonyms and for intermediate users, it is not intuitive what kind of different features they have. I can merely guess that adjustment is to adjust the minute details inside photo while edit is to change other things.

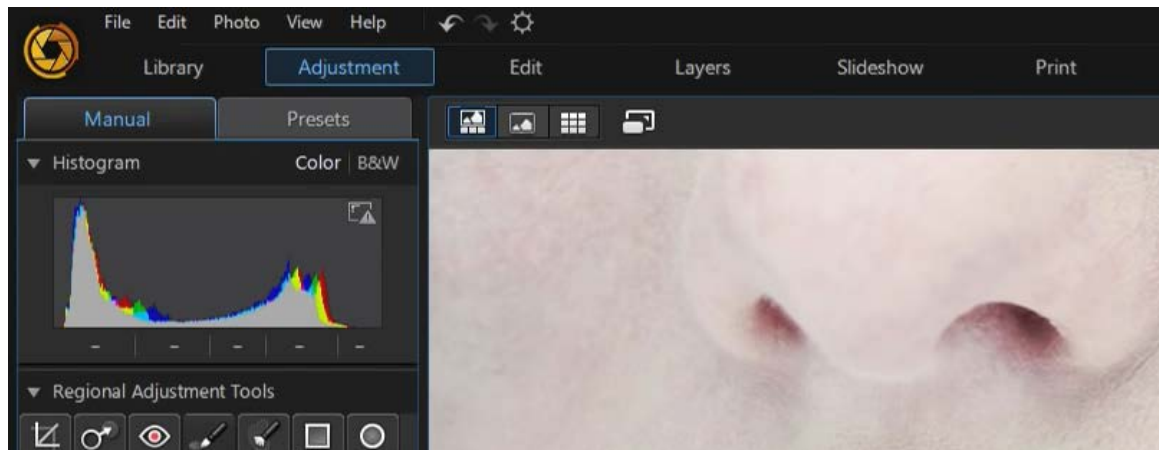


Figure 2 - "adjustment" and "edit"

Lastly, considering the basic principle by Hansen in 1971, "Know thy user", PhotoDirector seems to target users with intermediate and middle photo editing skills as the interface does not seem to be as professional photo editing tool compared to a professional software, Adobe Photoshop. There are much less buttons, but nonetheless has all the essentials features needed for editing photos: spot removal, brush, crop, rotate, and filters etc. I have used Adobe Photoshop several times to edit slightly, however, I had hard time finding what kind of functions each icon does. There were simply too many icons that I needed to remember. But PhotoDirector only shows key features that are used mostly by customers. I haven't looked around all the features inside PhotoDirector and compared with Adobe Photoshop, but I find this program sufficient for all the tasks I need to do simple picture organizing jobs.

PhotoDirector has UI designed in ergonomic way with less difficulty for users while keeping all the key features. It is much easier for novice users like me to edit photos. It uses very intuitive colors and icons that is familiar to users as they are more used to icons used by Adobe Photoshop. This program has interface more suitable for users with novice and intermediate photo editing skills.

Can the usage of software (PhotoDirector) be modeled as a sequence of decisions?

Many people might think that picture organizing software as a sequence of decisions that users make when photoshopping pictures. However, I believe that not only does user has to make logical decisions, but also need to make aesthetic decisions. While making changes to the picture, the user must constantly evaluate and think how and where to photoshop. There exists a limit to a certain extent to which the software or the tools enhance the speed and performance of the photoshopping skills. User's aesthetic capabilities greatly affect the quality and performance of photoshopping new picture.

Simple tasks such as cropping, rotating or resizing the image does not take long time and can be modeled as sequence of decisions with a decision tree as shown below.

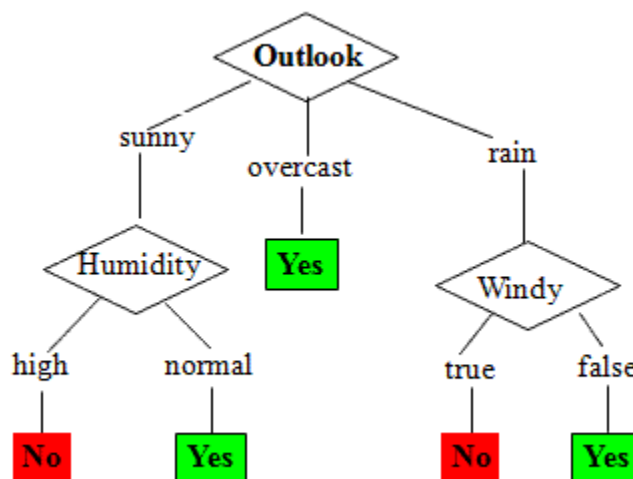


Figure 3 – Decision Tree Example

Decisions can be made on the sequence of decisions that the user must make when doing simple tasks. For example, rotating the image in a decision tree can be represented by several child nodes in order to go to a selection of rotating various degrees. However, this is different for cases like editing image color, brightness and contrast. Until the user starts doing the process, user does not know how much changes or child nodes he has to pass. Only after doing several changes does the user become satisfied with the new image. But number of changes cannot be expected. It is user dependent and depends on the aesthetic satisfaction that the user gets after making several changes to the image.

Also, the number of steps to reach a good image is affected by the proficiency of the user too. More experienced and artistic talented user can finish the task with fewere steps than those users without such factors. Because the process of editing image continues until the user is satisfied, I believe this process is similar to a recursion tree process.

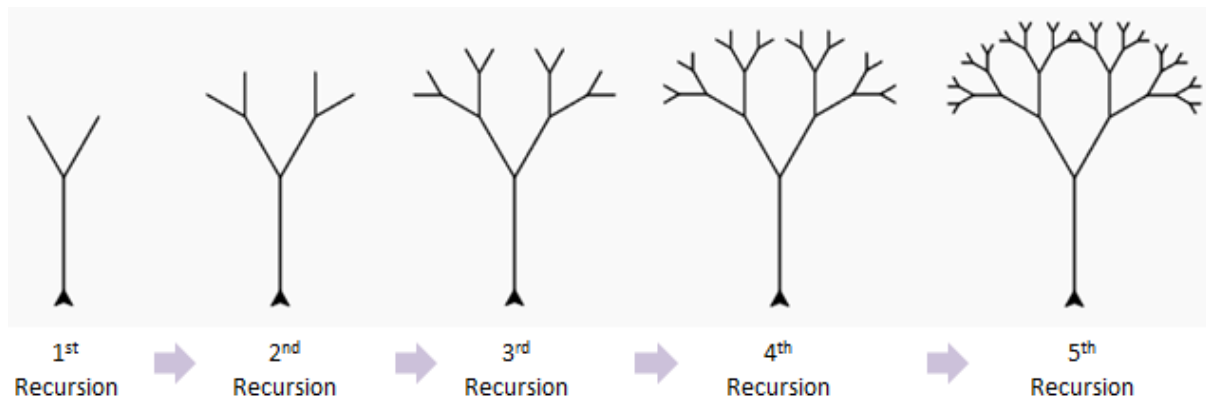


Figure 4 – Recursion in a Tree form

Recursion happens when the user has to repeat the given task until a certain condition is met; user is satisfied with the changes made to the image. Until then, user cannot proceed to a new step, which makes this whole process similar to a recursion.

Recursion happens for all the tasks unless there is a specific and quantitative outcome that the image has to show. Simple tasks such as resizing the image by certain ratio or cropping the image by half etc. can be modeled by a decision tree. However, much complexed tasks that requires user's artistic talents cannot be simplified to a tree. A recursive method must be added to represent the tedious and repetitive editing that user does. It is impossible to count how many repetitive actions will be made.

GOMS (Goals, Operators, Methods, Selection Rules) methodology for PhotoDirector

Task: Remove background image of person and place it to a new background

Action Sequence	Operator Sequence
1. Point to “background”	P
2. Click mouse button	B
3. Point to “duplicate layer”	P
4. Click mouse button	B
5. Point to original layer checkbox	P
6. Click mouse button	B
7. Point to “layer logo”	P
8. Click mouse button	B
9. Point to “add photo layer”	P
10. Click mouse button	B
11. Point to background layer.	P
12. Press and hold mouse button	B
13. Drag background layer below copied layer	P
14. Release mouse button	B
15. Point to background layer checkbox	P
16. Click mouse button	B
17. Point to “select area tool”	P
18. Click mouse button	B
19. Point to “magic wand”	P
20. Click mouse button	B
21. Move mouse inside photo	P
22. Click mouse button	B
23. Move around the person	P
24. Release mouse button	B
25. Point to “Clear selection”	P
26. Click mouse button	B
27. Point to background layer checkbox	P
28. Click mouse button	B

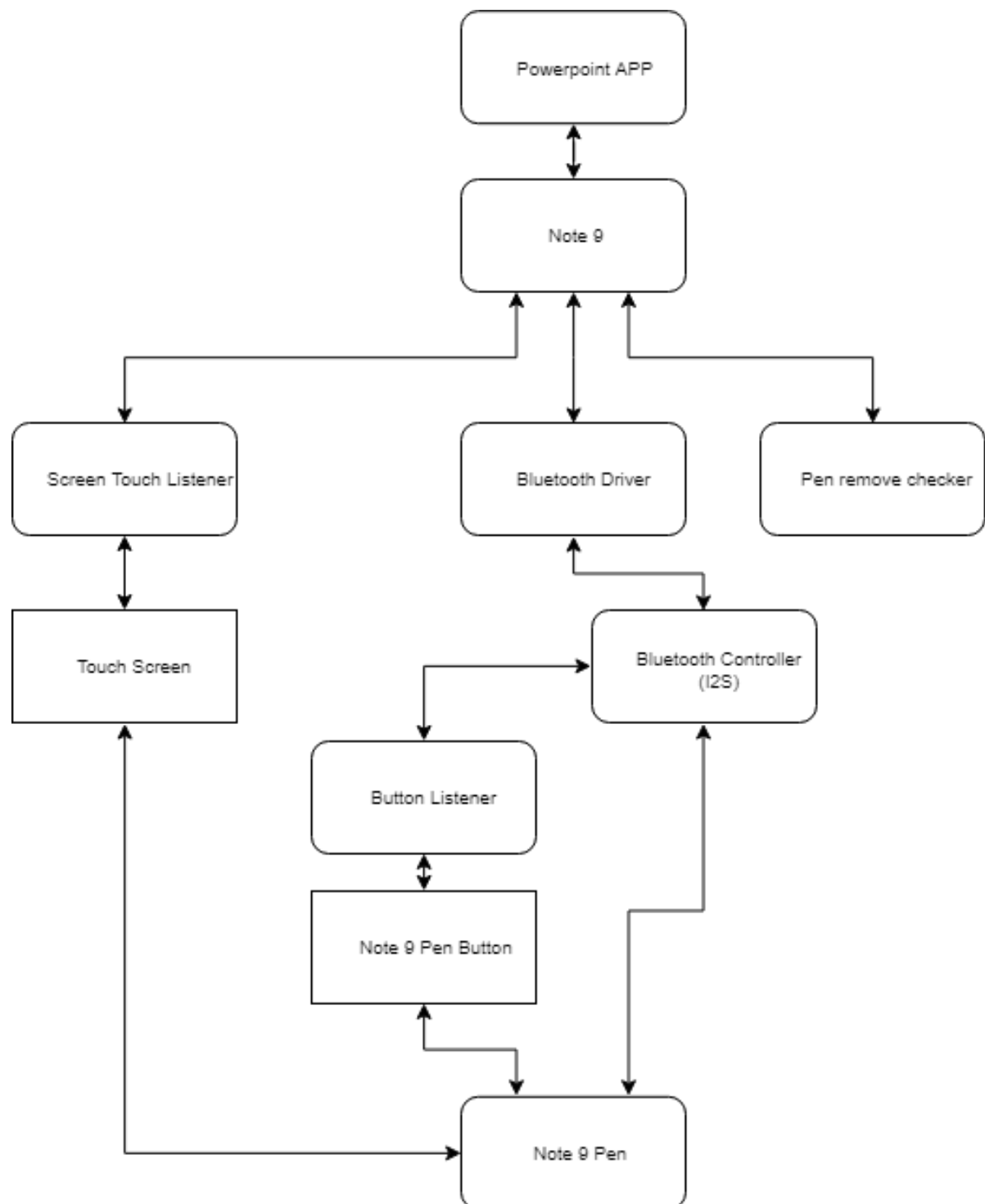
Total time: $13P + 13B = 13 * 1.1 + 13 * 0.1 = 15.6$ sec

Real Execution time by me: 113 sec

The execution time greatly differs by at least 724% because I am not familiar with the program and the icons. Even though the program uses icons and design that is intuitive and clear, I had hard time finding the icons. I do not have any experience using any heavy photo-editing tools such as PhotoDirector so getting used to the UI took longer time than expected.

Times for KLM operators by Kieras in 1993 is measured and averaged times. However, a novice like me would take longer time to do the same task as I am not familiar with the software tool. As Kieras mentions for “Keystroke”, an expert would take 0.12 sec, average skilled person uses 0.2 sec, while “독수리” or hunt and peck typing method takes 1.2 sec for a single keystroke. According to his paper, average skilled person types is about 6 times faster. This is similar to my execution time compared to expected time as this is my first time using PhotoDirector software. Doing searching and recognizing what icons represent the tools I need to use to photoshop took approximately 7 times longer than expected.

System Architecture of Note 9 Pen



Process to make input to screen or flip slides for Powerpoint

0. Check if pen is removed from Note by “Pen remove checker”
1. When Pen is removed, a Bluetooth driver and controller connects Note 9 with it
2. Note 9 Pen Inputs
 - A. If Pen button is pressed, a button listener tells Bluetooth Controller at Pen to connect to driver at Note 9 and execute action.
 - B. If Pen touches touch screen of Note 9, a screen touch listener activates and executes action.
3. Within Powerpoint software, Note 9 executes action - flip slides.

The flow starts with Note 9 checking if the Pen is physically removed from the phone. After there is hardware check on the release of the pen, Note 9 and pen connects to each other via Bluetooth and starts communicating each other. There are two types of communications: button click and screen touch. If the user presses the button at the side of the pen, a message sends to the phone via Bluetooth and tells it to flip the slide. Another way is for the user to physically touch the screen of the phone. Then, the phone knows there is an input made by the pen and flips the slide accordingly.