Senior Project Proposal

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Advisor: Dr. Hayes

Expected Graduation Date: May 2022

**Problem Statement**:

In a technologically driven society that revolves around photographical documentation, we should be able to have easy access and be able to easily operate the technology available to us. Yet there are many people that do not have access to a decent photo editing app, with decent features. Young adults and teenagers are wasting money on costly subscriptions for photo editing software just to get their hands on features they don’t know how to use. And if they don’t buy the subscription, access to a majority of the photo editing features is restricted. I propose building a photo editor to have features that allow the user to make changes to and edit their photos. This solution would be beneficial for those that want to edit photos without putting a large investment of time and money or have complex photo editing knowledge.

**Product Description**:

a C++ project constructing a Bulk image manipulation tool. This manipulation tool would have features divided by categories, (for example: colors, sizing), that allow the user to choose what changes they want to make to a photo, and submit to do those changes all at one time instead of making one change at a time. Examples include cropping, custom size editing, color filters, photo effects, auto white balance, stickers, etc.

**Proposed Implementation Language:** C++

**Libraries, Packages, Development Kits, etc. to be used:** QT

**Additional Software/Equipment Needed:** QT IDE

**Future Research:**

* Researching/learning how to use QT through tutorials, so that I am familiar with the software that I am using to develop my product with.
* Learn about the different packages available in the QT software to familiarize myself with the IDE and utilize helpful features in my project.
* Researching and learning how to implement events in C++, so that the user can click buttons and do actions to actively edit their photo.
* Research and learn to front-end/back-end development methods that I am not familiar with in C++, so that I can make the product and make it look neat and presentable.
* Researching how to control image view and image changes through QT IDE for presentation and functionality of photo editing features.
* Research how to access and add certain features that can change an image to add into the project, for example: how to add a color filter onto a picture.

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| **Anticipated Schedule** | | | |
| Description | Start Date | End Date | Duration |
| 1) Start Design: |  |  |  |
| 1a) Complete test plan | 08/23/2021 | 09/20/2021 | 29 days |
| 1b) Complete further research on QT IDE usage, tools, and packages before development starts | 08/23/2021 | 08/30/2021 | 7 days |
| 2) Start Development: |  |  |  |
| Complete basic front-end model of project | 09/01/2021 | 09/15/2021 | 15 days |
| Incorporate events into project with minimal features such as crop, custom resize, and preview | 09/15/2021 | 10/08/2021 | 23 days |
| Add more features such as color filters, effects, auto white balance, etc. | 10/08/2021 | 11/12/2021 | 36 days |
| Adding addition features to project | 11/15/2021 | 12/10/2021 | 25 days |
| Defense: |  |  |  |
| Complete Final Report | 01/10/2022 | 02/11/2022 | 32 days |
| Complete Project Presentation | 02/14/2022 | 03/28/2022 | 48 days |