

SENIOR PROJECT DEFENSE

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PROJECT PROBLEM STATEMENT AND PURPOSE

- In a technologically driven society that revolves around photographic documentation, we should be allowed access and opportunity to decent photo editors. Yet many people 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 basic features they want. And if they don't buy the subscription, access to a majority of the photo editing features are restricted. I propose building a photo editor to have features that allow the user to make changes to and edit their photos for those that want to edit photos without putting in a large investment of time and money or have complex photo editing knowledge.
- The purpose of this project is to construct a C++ project constructing a Bulk image manipulation tool. This manipulation tool would have features divided by categories, (e.g., 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 once.



PROJECT LANGUAGE(S), SOFTWARE, AND HARDWARE

- I used C++ within the QtCreator IDE on my own personal computer.

RESEARCH AND BACKGROUND

- I have a lot of experience with the C++ language but I had absolutely no background or knowledge of QtCreator. Therefore, I had to research and experiment with the interface of QtCreator to learn how to use and get familiarized with it since I had never used it or even heard of it prior to this project.
- I also had to do research on the specific classes built into QtCreator that I had never used before. Throughout the process I had to reference examples and tutorials built into the IDE in order to learn the format and the difference objects and classes that are built into the software. Classes such as QImage, QLabel, and many more were common topics that I dealt with and researched throughout the process.

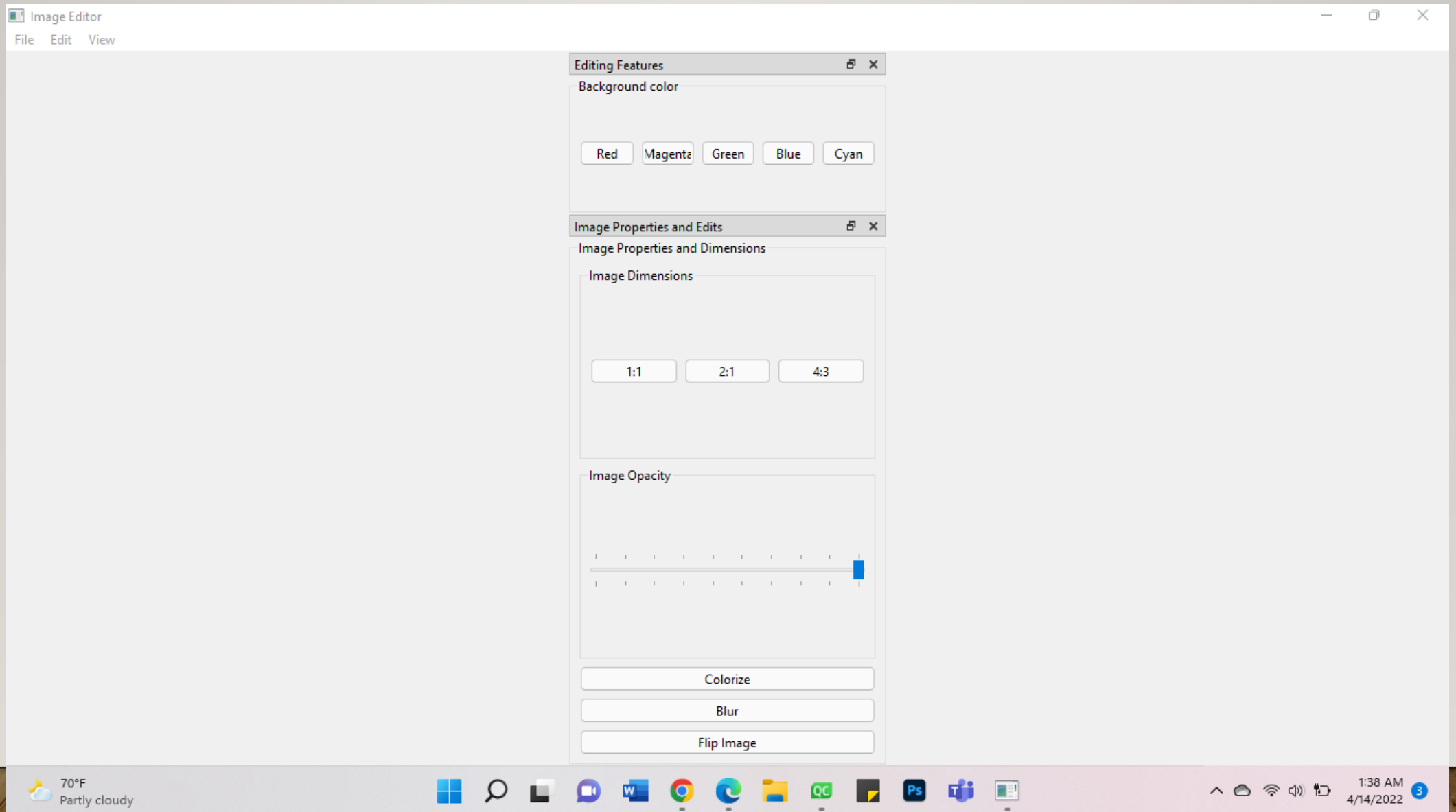
PROJECT REQUIREMENTS

- High priority requirements that I wanted application meet included:
 - The user should be able to upload their desired image
 - The product shall be easy to use by many demographics with little to no training
 - The application should allow the user to save and download the modified version of the image to their device
 - The editing features should be neatly organized by category
 - The program should have multiple basic editing functions to alter an image
 - The program should be easily accessible and readily available to anyone

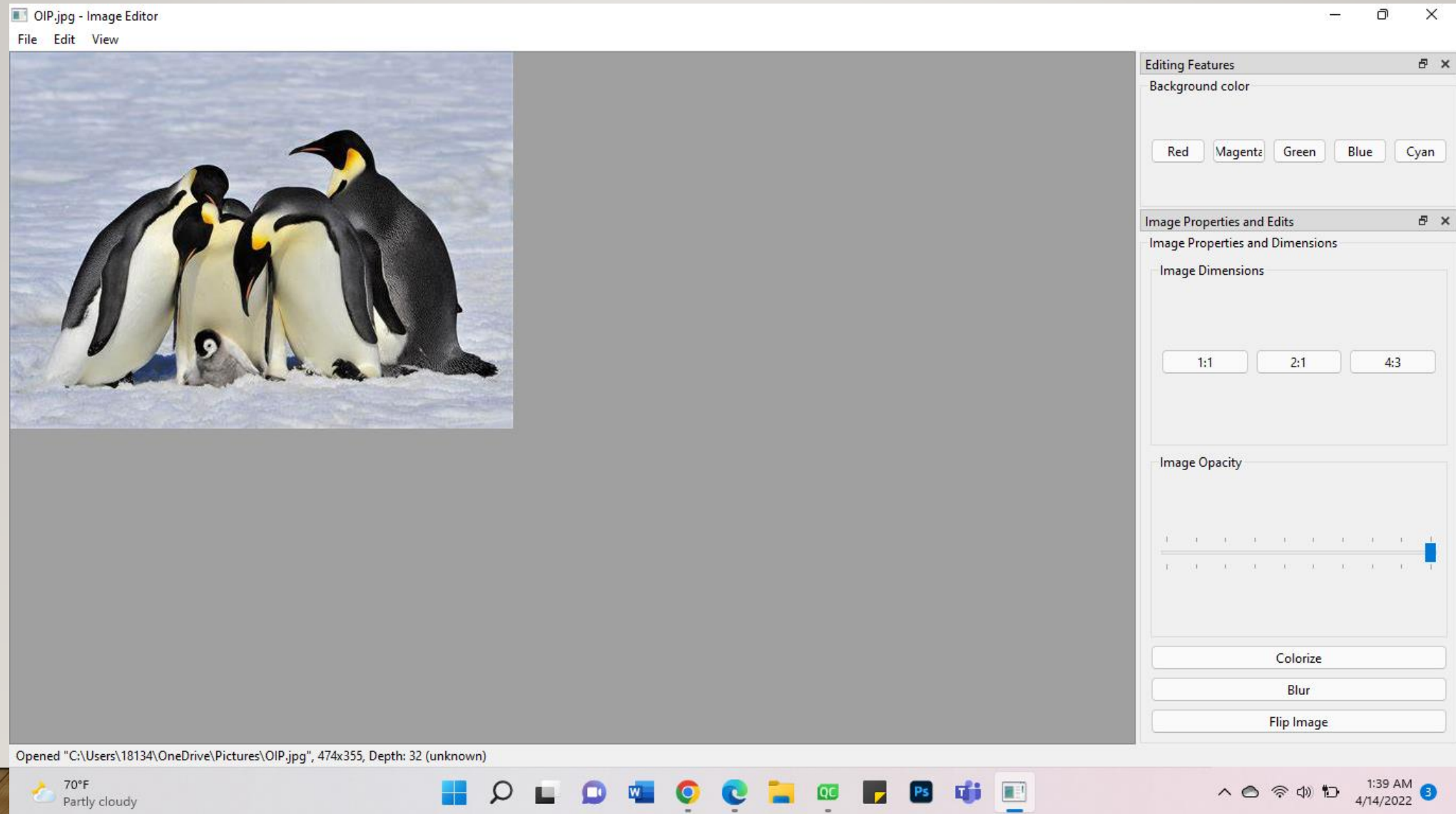
DESIGN AND FEATURES

- In the upcoming slides we will review the application interface and the features that can be utilized...

OPENING SCREEN OF THE APPLICATION



APPLICATION AFTER UPLOADING AN IMAGE




SCALING THE IMAGE USING FIT TO WINDOW OR ZOOM

OIP.jpg - Image Editor

File Edit View

- Zoom In (25%) Ctrl++
- Zoom Out (25%) Ctrl+-
- Normal Size Ctrl+S
- ☒ Fit to Window Ctrl+F



Editing Features

Background color

Red Magenta Green Blue Cyan

Image Properties and Edits

Image Properties and Dimensions

Image Dimensions

1:1 2:1 4:3

Image Opacity

Colorize

Blur

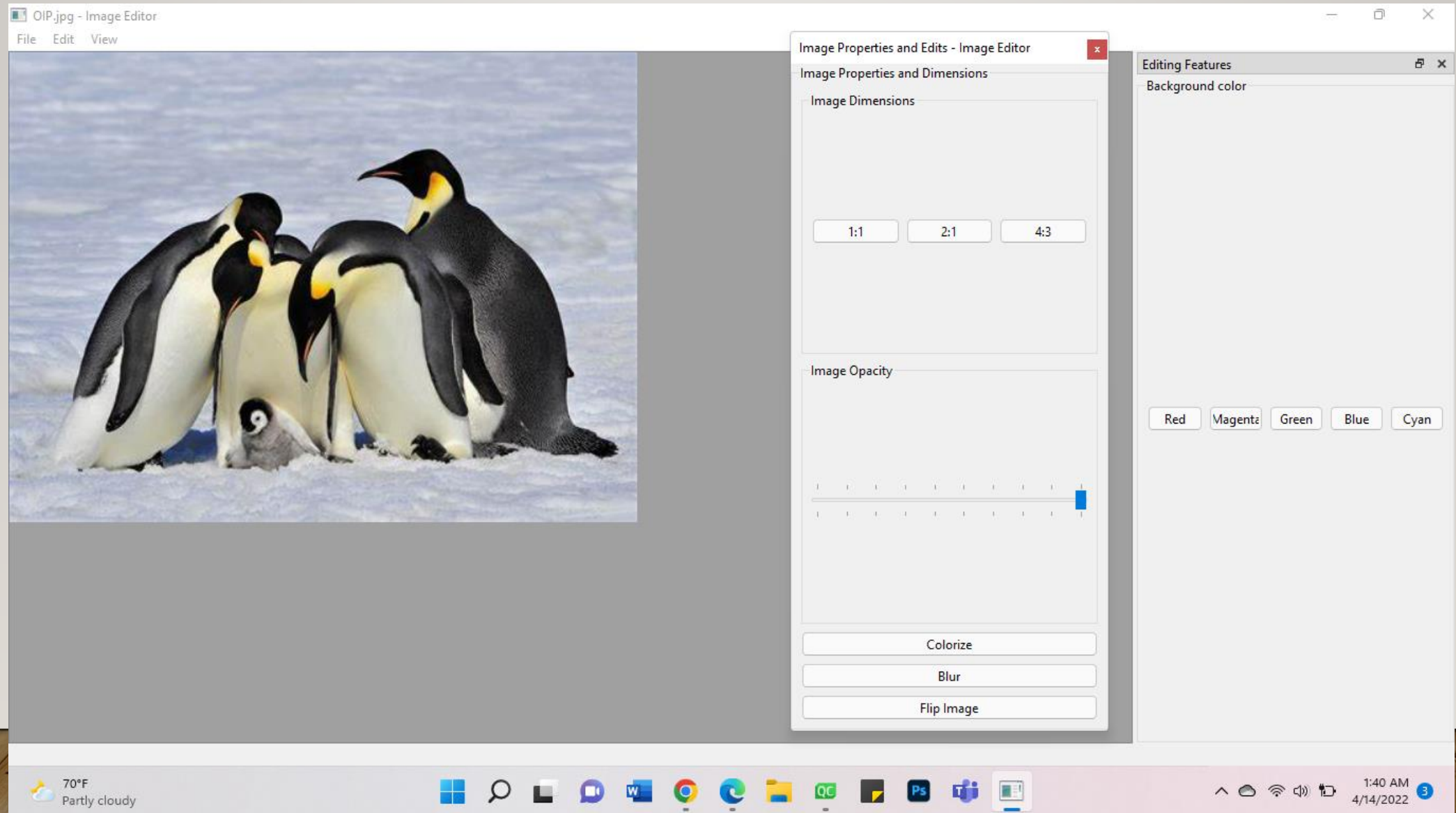
Flip Image

70°F Partly cloudy

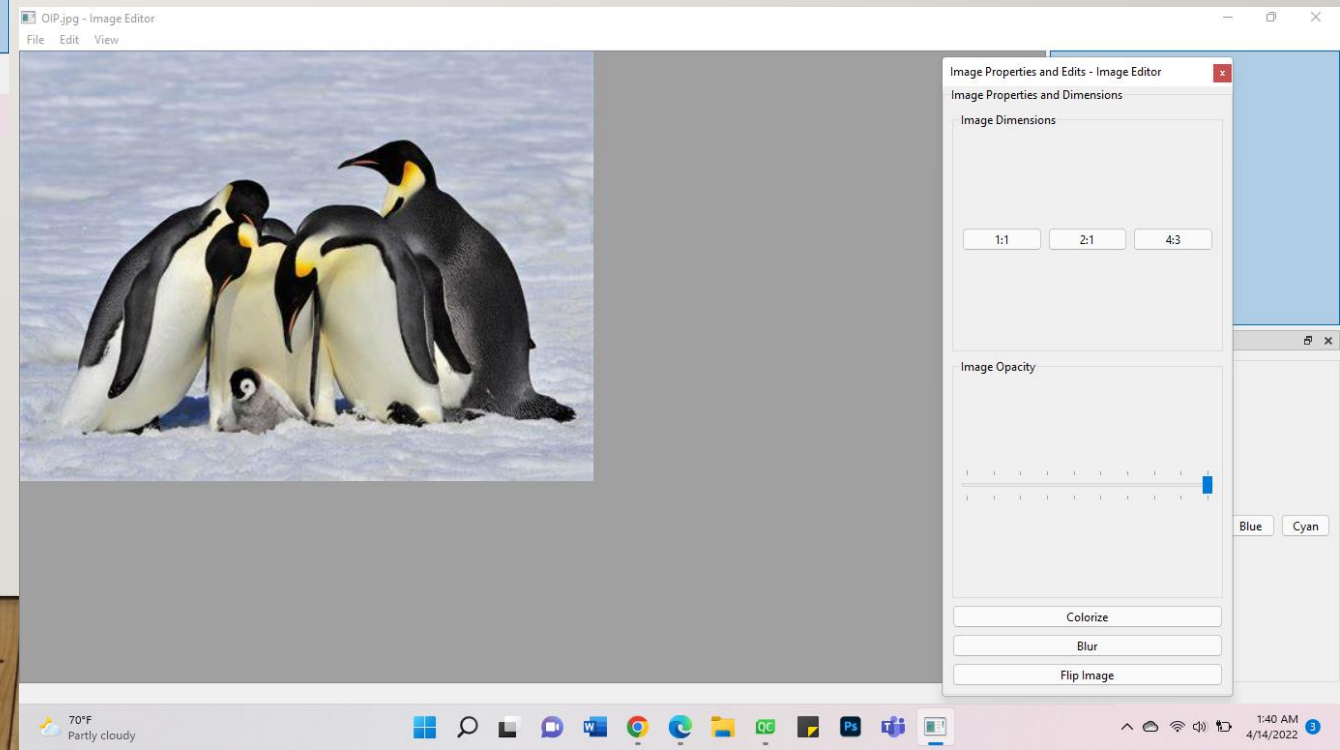
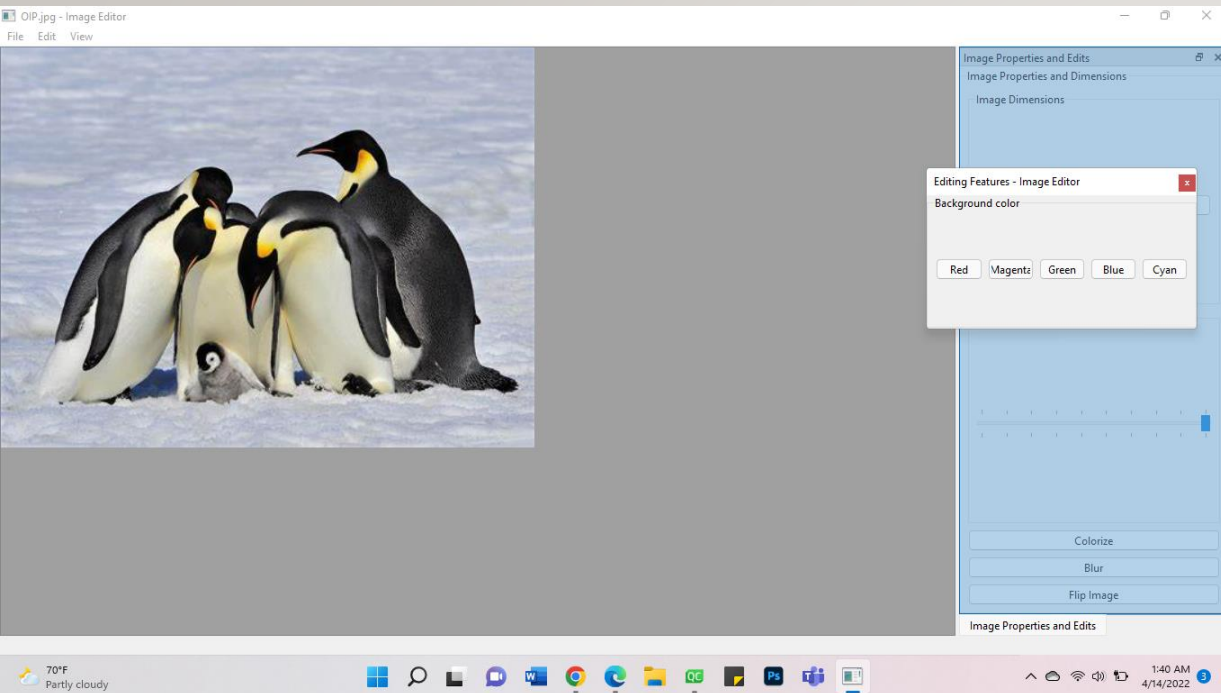
Windows taskbar icons: Start, Search, File Explorer, Microsoft Edge, Word, Google Chrome, OneDrive, File Explorer, OneNote, Photoshop, Teams, and the active Image Editor window.

System tray: 1:39 AM 4/14/2022

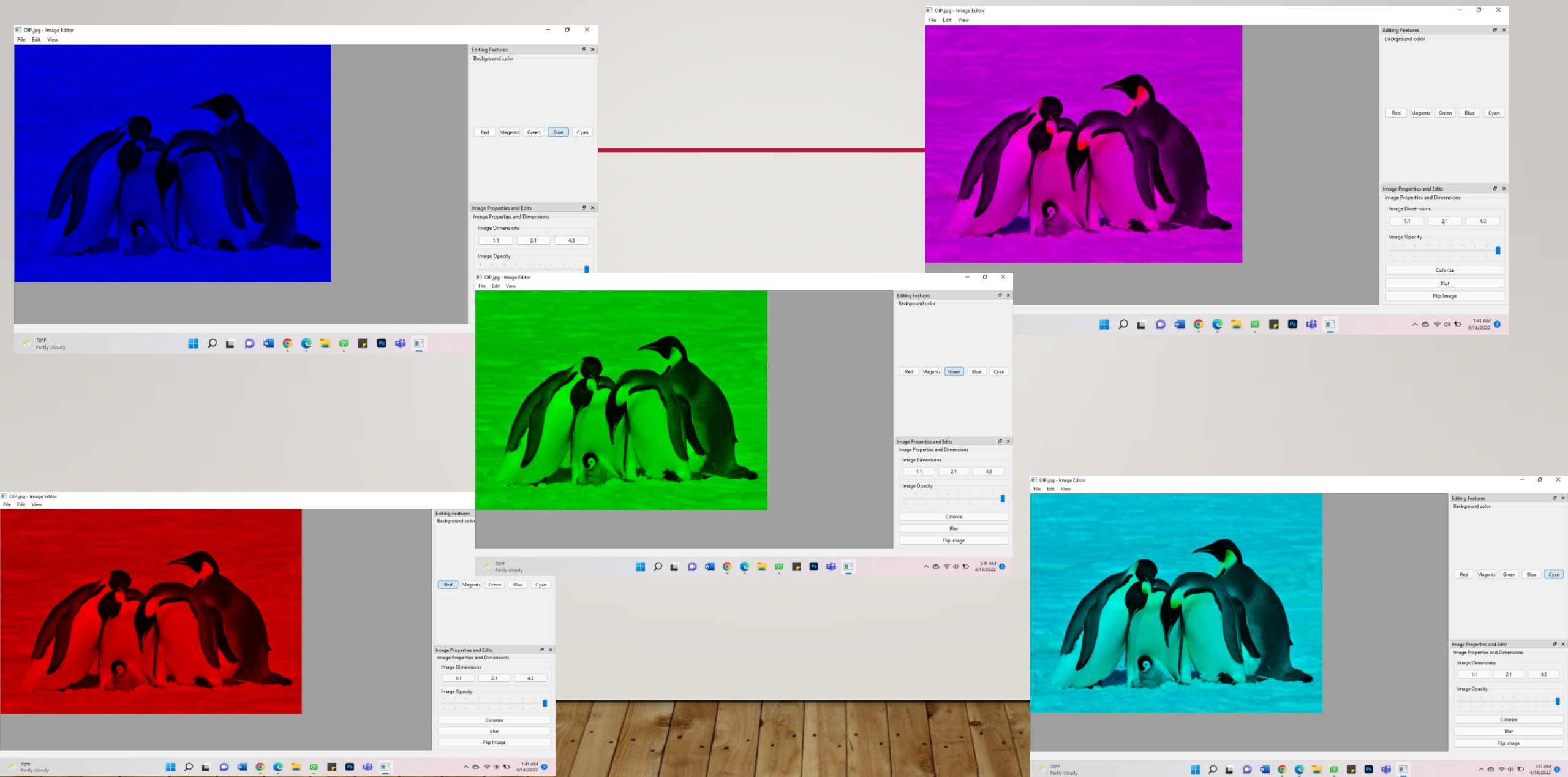
MOVING EDITING FEATURE TABS



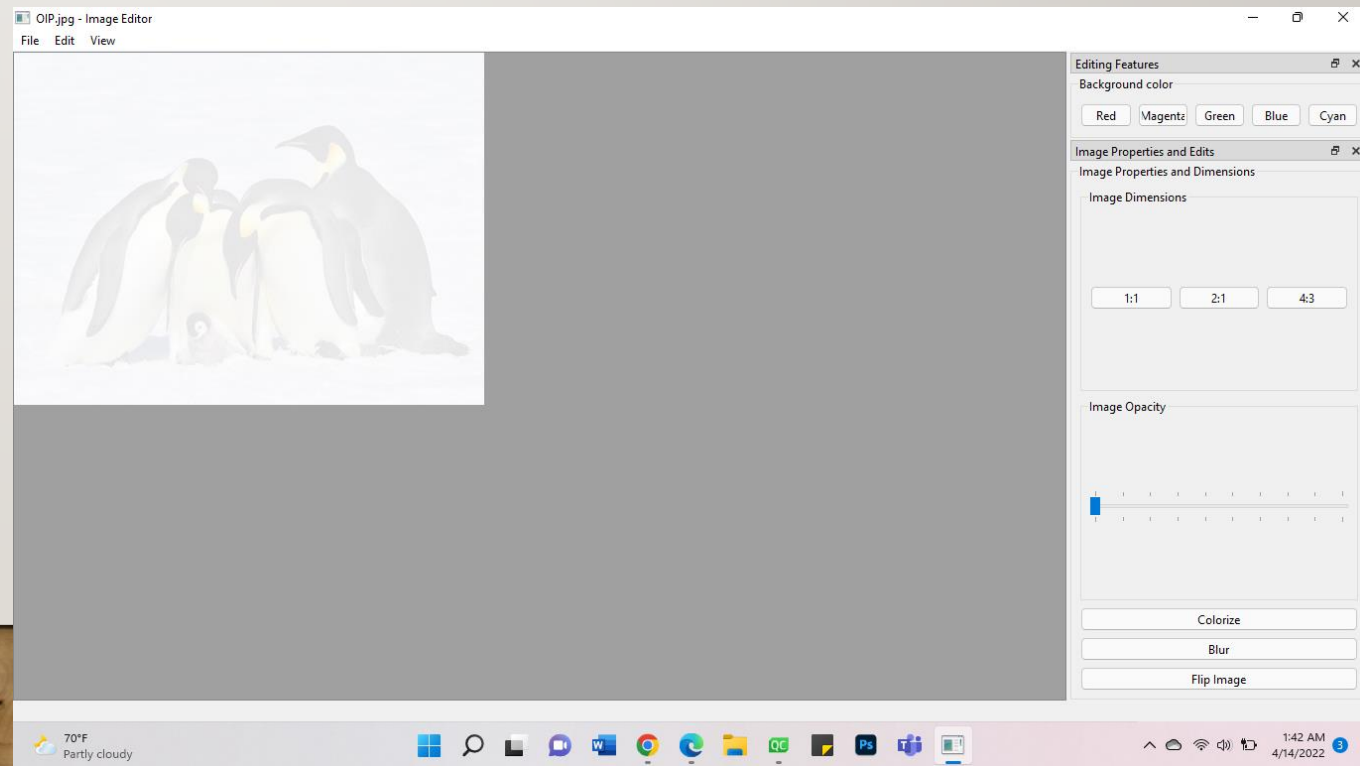
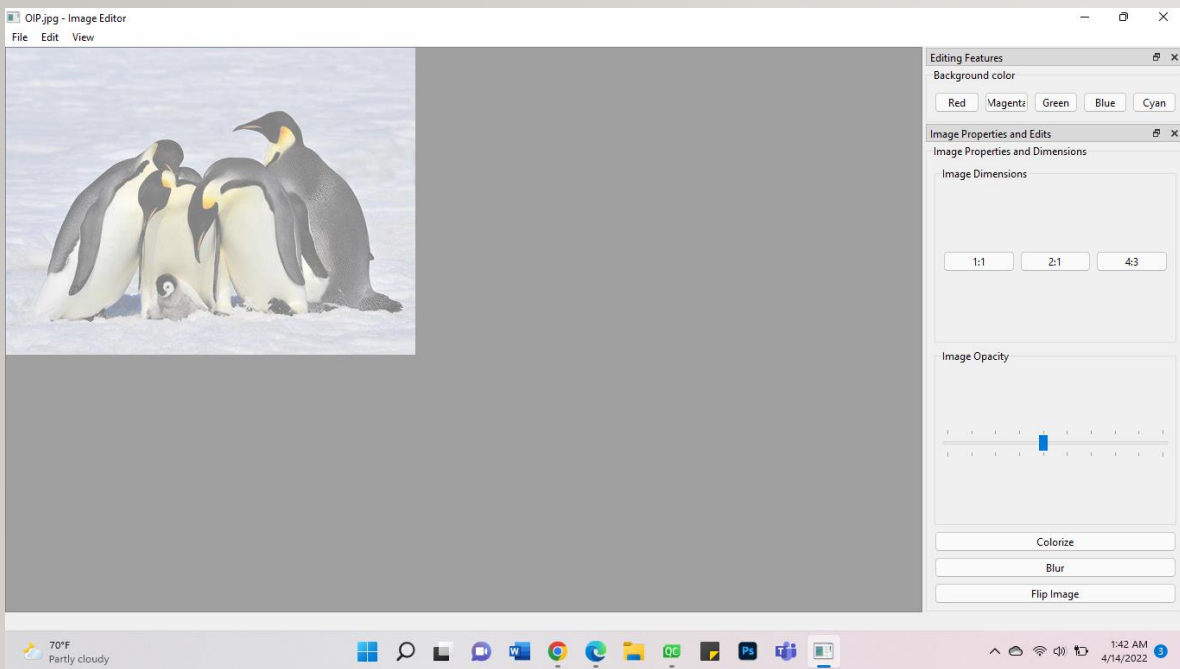
MOVING EDITING FEATURE TABS



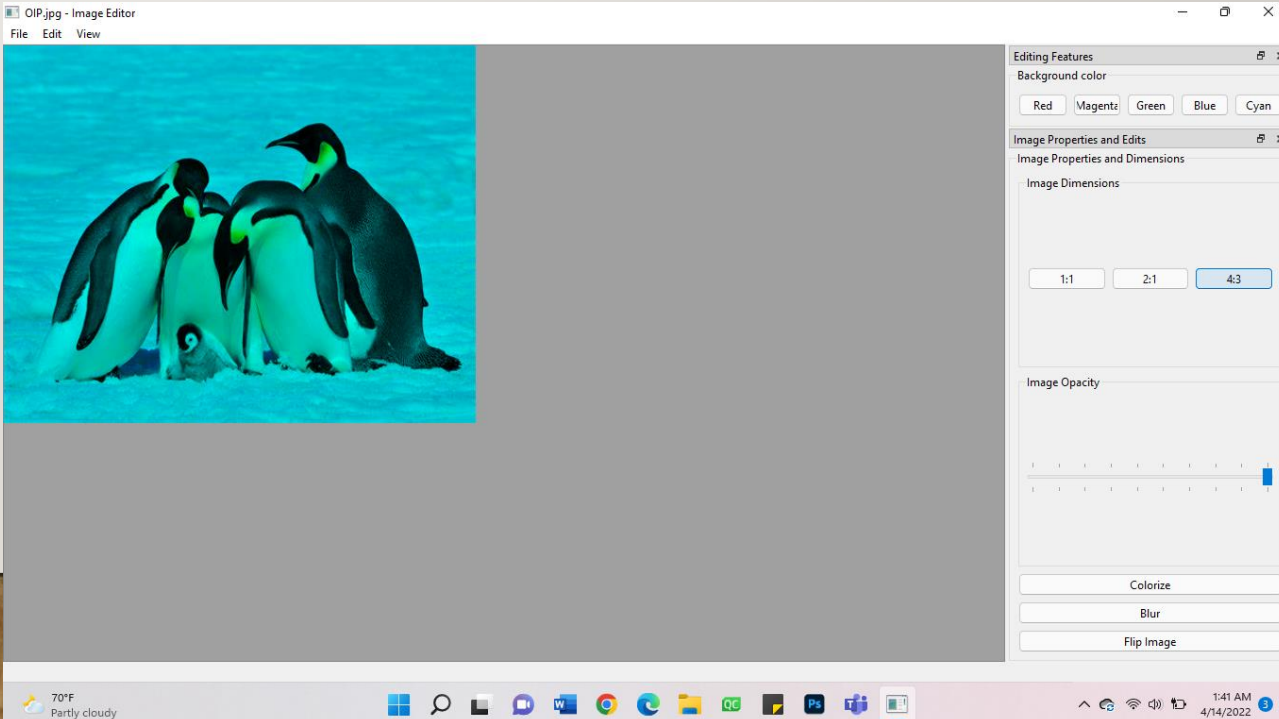
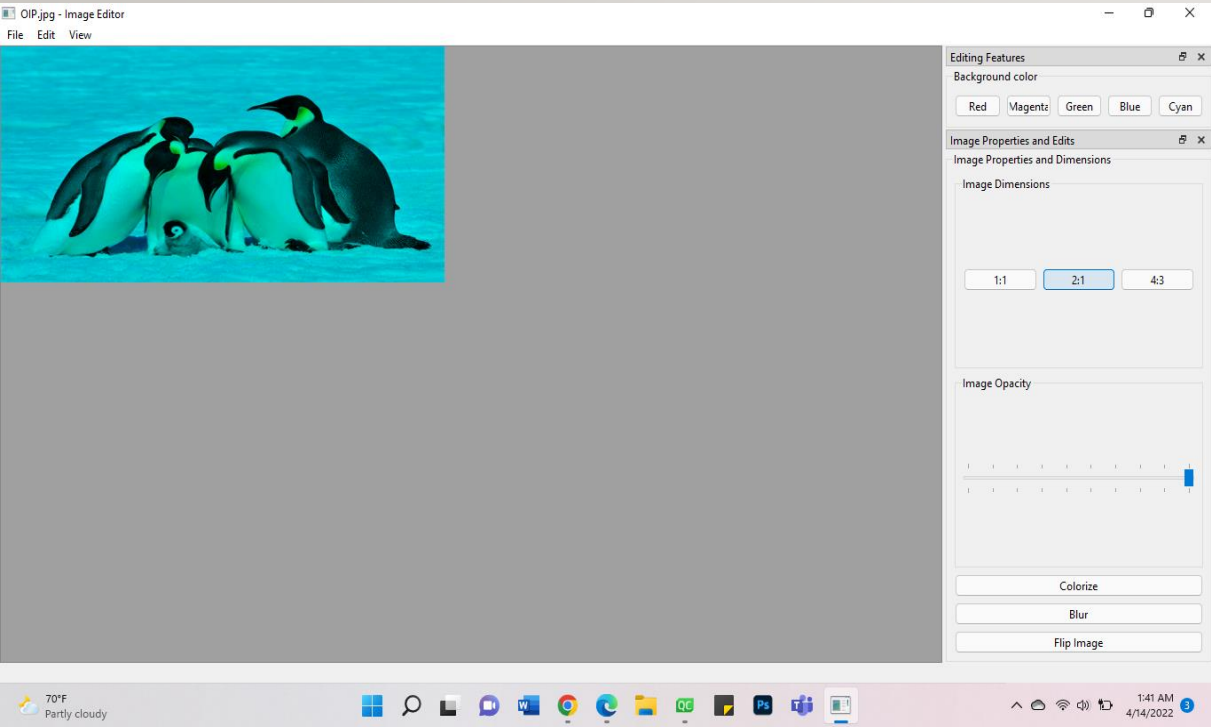
ADDING COLOR FILTERS



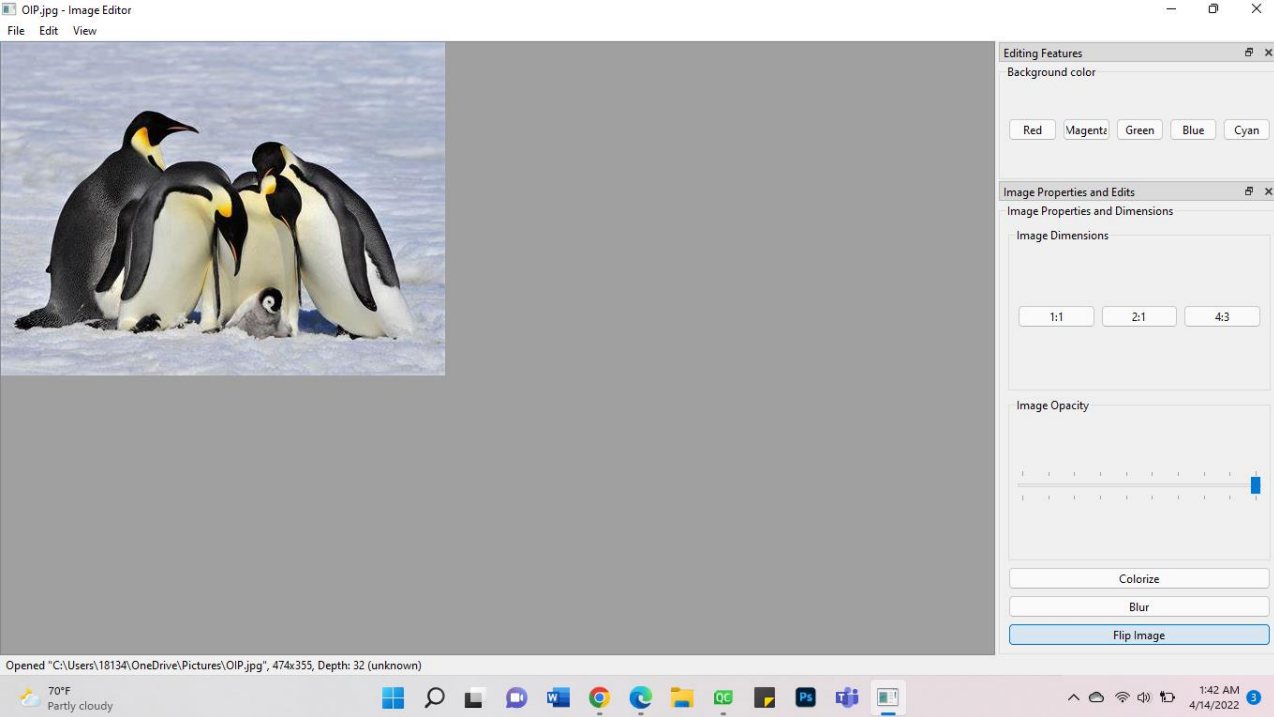
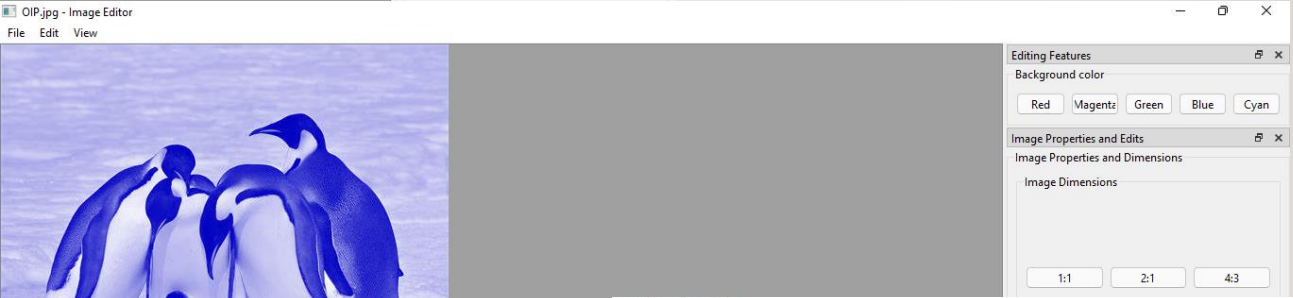
CHANGING THE OPACITY



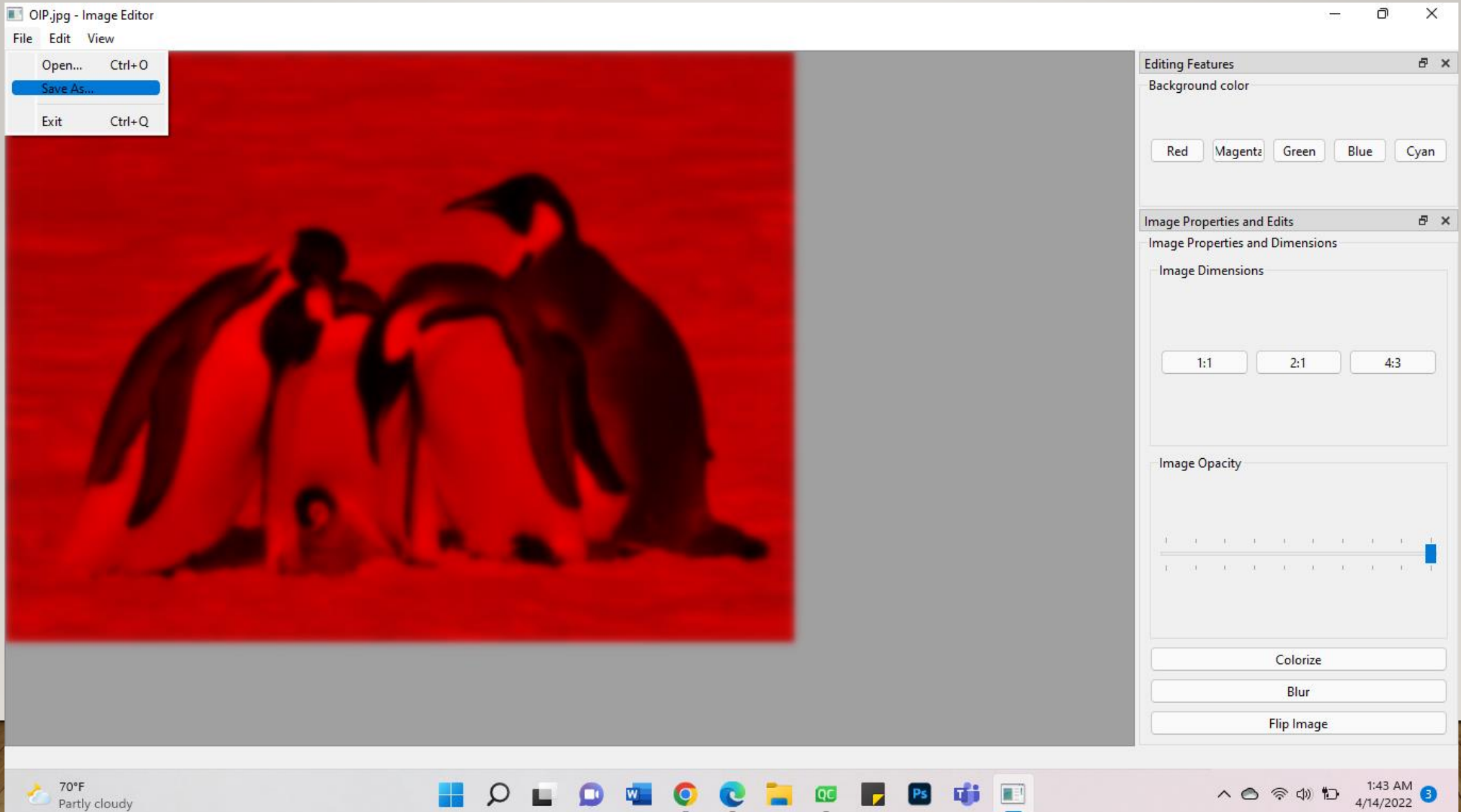
SCALING THE IMAGE WITH RATIO DIMENSIONS



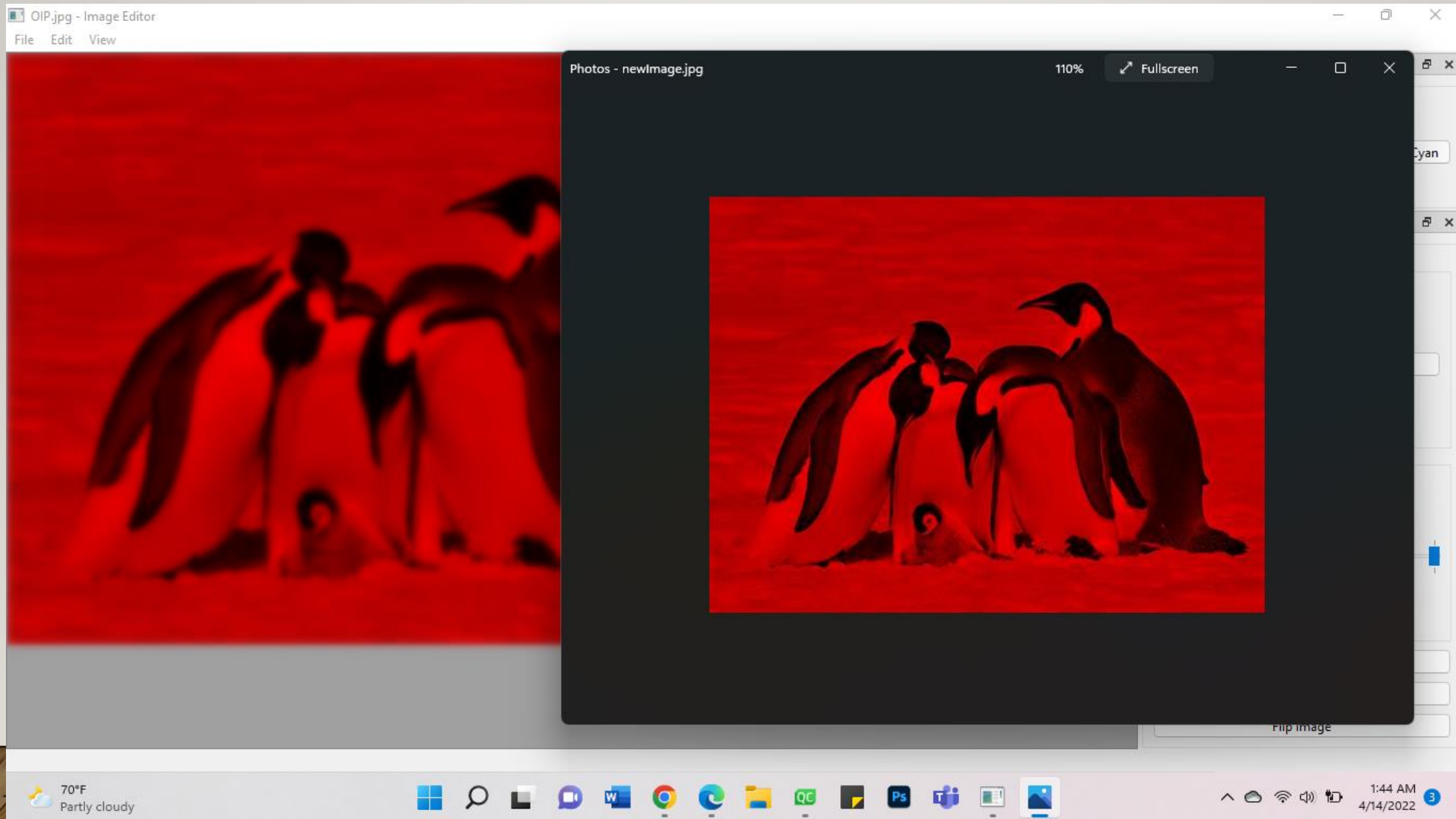
EDITING OTHER IMAGE PROPERTIES



SAVING THE IMAGE TO FILES



SUCCESSFULLY SAVED IMAGE



TESTING AND TEST RESULTS



CHALLENGES OVERCOME

- I mostly struggled with finding documentation to meet my specific needs for this project. That and getting familiarized with the QtCreator IDE in the first place.

FUTURE ENHANCEMENTS

- In the future, I would like to advance the interface by adding a drop down menu to remove or add the different function tabs from view. I would also like to add more advanced editing feature such as an undo button, and white balance for the images. I would also like to add a feature to view the before and after to access the changes and differences.