Instructions for running the token colorizer on Windows.

Installation:

1. Install Python 3.6 from https://www.python.org/downloads/

2. This application uses two modules that must be downloaded in order to run. To install them, we will have to you the command line. In windows, search for "cmd" or "command line".

   a. type in "pip". It should give you a list of commands. If so, you are ready to move to step 3.

   b. If that failed, you will have to add the path to pip from your CMD line. The easiest way is to simply follow this video:

   https://www.youtube.com/watch?v=Jw_MuM2BOuI

   NOTE: The appdata folder might be hidden. You will need to force it to be shown in the folder section. Alternatively you can also search for it in windows 10 by clicking the search/cortana icon and searching "%appdata%".

3. Now that pip is working, you will type in the following command into your Windows Command Prompt.

   pip install Pillow

   That will install Pillow as a Python script. Next you will need to install Easygui. From the command prompt type in the following.

   pip install easygui

   This will install easygui. Once that is finished, the program can be run by simply clicking its icon.

Table 1: How does the program work?

	Token pixel		Pattern Pixel	New Pixel Identity
R	150 / 255	*	15	8
G	150 / 255	*	200	117
B	150 / 255	*	100	58

Running the Program

1. The program will launch and ask you to choose a black and white token. Click okay.

2. A new window will pop up and you will be able to select a file. Click ok.
   a. Navigate to your token folder. Select a token and hit ok.
   b. A new window will ask you if you would like to select another token. Clicking Yes will take you back to step 2a. Clicking no will take to the next step.

3. The program will pop up a new window asking you to select a pattern. Click ok.
   a. In the file select window, navigate to your pattern folder. Select a pattern and hit ok.
   b. A new window will ask you if you would like to select another pattern. Clicking Yes will take you back to step 3a. Clicking no will take to the next step.

4. The program will apply each pattern to each token. It will then ask you for a folder to put all of the tokens in. Hit OK.
   a. In the file select window, choose a folder to place the tokens into. The standard place to select is the "finished tokens" folder inside the original tokens and patterns folder, but you may choose whatever folder your heart desires.

5. The program will close and your files will be located in the folder you selected.

FAQ:

Where did the included tokens and camos come from?

These tokens and patterns came from an application called MegaMek which is designed to play Battletech games online. Their system does something very similar and I wanted to make a more portable version that gave me direct access to those completed files. Many of the patterns and token designs are built by the community.

How does it work?

The program opens a token image file and goes pixel by pixel to look at the RGB values. If the values are not equal or are an alpha value(transparent), the program moves on. If the RGB values are not equal, the program applies the pattern color to it and multiplies the RGB values by the percentage of the grayscale images RGB value. This darkens certain shades to make the decal look more realistic (albeit still pixelated). See Table 1.

What are the limitations?

Tokens can be any size. Technically the pattern can be any size but it only takes the necessary size based off of the token. If the token is small, it only takes that small area. If the token is larger, it increases the size of the pattern but it only adds white space. It does not stretch the actual image. The tokens are currently a little too small to expand into better tokens.Technically, this can work with any token so long as it is true grayscale.

What can I do to help? (You ask...)

Currently, I am unhappy with the resolution of the tokens.They look okay in a single square on roll20. They do not look good when stretched into three squares. Unfortunately they are supposed to be large and I would like **higher resolution tokens**. That means **I also need higher resolution patterns** to go along with it. If you can make those and contribute, I'd be very happy.