Outlining Program

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1 Preparation

- You need MATLAB on your computer. Including the curve fitting toolbox.
- Download the files from "OutliningProgram" which contains this PDF document and the three .m files:
  - `outlinerMain.m`
  - `outliner.m`
  - `removeBG.m`
- Preferably, save these files in a subfolder of your MATLAB folder.

2 Setup

1. Start MATLAB
2. Change directory to the folder in which you saved the files and open the following file:

   `outlinerMain.m`

3. Change all paths of folders and files to ones that are correct for your file setup. All folders need to exist before running the program, files do not.
4. Make sure to not accidentally overwrite already existing files unless you want to. MATLAB will do this without asking for permission.
5. Choose what type of output you are interested in, and change values in the file to match
   - What is the background colour you need to remove? Currently only works for pink and green.
   - Fully automatic, i.e. running with no user input?
   - Save low resolution versions of the images with outlines superimposed?

- Do you need the size? This needs manual input for each image.
- Only interested in running for a subset of the images in your folder?
- Do you want the black and white segmented images as an output?

3 Running the program

Run the program by either pressing F5 or the big green arrow button in the tool strip. Make sure to do the above setup first. If you get asked you if you want to "add to path", then do it.

3.1 Without input

If you put "checkoutline = 0" the program will run through all chosen images in alphabetical order, and output the outline for each of them in a single .tps file. If you save the outlined images by having "savingOutlineImage = 1", they can be found in the folder indicated as "outputpath". The command window will indicate each finished image, so you will know how many have been done, and when completely finished it will display "Done!".

3.2 With user input

1. A new window opens containing an image with an outline. A dialogue window will open on top of this image asking if the outline is good enough. You have 3 options:
   - Yes. This is good, save outline and image, go to next one.
   - No. This is not good, save image with outline but not outline coordinates in .tps file, then go to next one. This also saves the file names and numbers in a separate text file so you know which ones were bad.
   - Quit. I am done for now, do not save current outline nor image, quits program.
2. If you are including scale, then you should now click on two point with known distance between them, then press enter, and input their distance in the new window appearing. If you are not including the scale, this step is skipped.
3. The program will now display the name of the image and its number in the command window and then automatically go to the next image.
4. If you need to quit before finishing all shells, make a note of the number and name displayed after pressing "quit". When you restart it the next time, use this number as "startNumber" to start where you left off.
5. When you reach the end of the list of images (or your choice of lastNumber), the program will indicate it is finihed by outputting "Done!" in the command window.