Additionalscript guide

The additional script is meant to help get the information for the database that the automatedtoolbox program needs. It requires a human to double check its work, and it may not be very helpful with some drawers, in which case the person will need to get the information manually. In most case the human will still need to make some modifications, to the output that the additional script makes, at a minimum the drawer can't automatically detect the drawer symbols, so thoat will need to be added to the output. The output should include a folder called drawer that contains, the template pictures, other supplementary pictures, tools.json, and drawer.json.

How to use:

1. Take video using the IP camera in the position it would be during use of the automatedtoolbox program. You can also just get a frame with the drawer devoid of tools and a frame with all tools in the drawer, in their proper places, but by taking the video you can also double check the information you put in the database using the -test mode of the automated toolbox program.
    a. The steps to follow to get the necessary information in the video are:
        i. Open drawer all the way with either all tools checked in or all tools checked out .
        ii. Wait a second without your hands in or on the drawer.
        iii. Check all tools in or check all tools out.
        iv. Wait a second without your hands in or on the drawer.
        v. Close the drawer completely.
    b. During the above steps make sure that you are not inbetween the drawer and the camera.
2. Take two frames from the video, one with all tools checked in and one with all tools checked out. Make sure all tools are visible during these frames and all drawer symbols are visible(ie, no hands in or on the drawer).
    a. These can not be screenshots they have to be actual frames from the video or the pixel locations will not be correct.
3. Use the two frames as command line input.
    a. python additonalscript.py <file location of one frame> <filelocation of other frame> [optional]<fiel location of configuration file>
        i. Ex:python additonalscript.py "drawer330_0_0_empty.jpg" "drawer330_0_0_full.jpg"
            1. The first frame given to the the program (in the example "drawer330_0_0_empty.jpg") , will be the frame that is thresholded and used to find where the drawer and tools are.
                a. If this is the frame with no tools set the 'segment' variable in the configuration file to 1 before running. If this frame is

the frame with no tools set the 'segment' variable in the configuration file to 0 before running.
    i. This just makes it so the correct picture is put in the correct location to the json if you forget just fo through the drawer and tool jsons and swap the picture location in 'PicWithAllTools' and the picture location in PicWithNoTools
2. The second frame will just have the same locations found in first frame cropped into individual pictures.
3. The optional third argument is the file ocation of the drawer configuration file, if you do not give it one it will assume the file ocation is 'conf.yaml'.

4. If you are happy with the work that the additional script has done, do nothing for this step. If you are not happy with the work that the additional script has done change the configuration file and try step 3 again.
    a. Keep in mind it will never be prefect.
5. Modify drawer.json and tools.json to include all the neceassriy information for the automatedtoolbox program.
    a. Add drawer symbol locations and file location of pictures to the drawer json under the “"drawersymbols" list into “picall” “x” “y” “w” “h” for all three drawer symbols.
    b. Double check the drawer location (look at the picture and confirm that it is correct, it should be just the drawer not the entire frame). If incorrect recrop the picture and modify the tool locations to match.
        i. If the drawer exposes the inner front of the drawer like below, you want that included in the pixel locations of the drawer, and to ensure that ____ is at a minimum the width of that.
        ii. You want to try to set up the camera to avoid that.
        1. 
    c. Double check the tool locations and make sure all tools are in the file, if all tools are not in the tools json add them, and crop pictures for them from the two frame pictures.
        i. It is recommended that if you modify or add a tool to change that tool to have the “manual” variable be true, to track that a person did it in case

their are miscalculated pixel values or mismatches between the tool checked in and the tool checked out pictures.

6. If you want the drawer to not look for extra tools change the segment to be -1
7. Put the pictures and drawer configuration file on the webserverAPI, and change the tools.json and drawer.json picture file locations and the drawer configuration file location to be their file location on the APIwebserver starting after the APIWebserverurl in the global configuration automatedtoolbox program.

How to manually find pixel locations:

1. Open image editing software with the frame with no tools, and frame with all tools
2. Note the size of the frame
3. Move the start of the pictures (so the leftmost part) from the x side to the start of the tool.
    a. Subtract the current width from the size of the frame.
        i. That is the starting X of the tool.
4. Move the start of the pictures (so the uppermost part) from the y side to the start of the tool.
    a. Subtract the current height from the size of the frame.
        i. That is the starting Y of the tool.
5. Move the other sides of the pictures (so the rightmost and downmost sides) until only the tool is visible.
    a. The new width and height, are the tools W and H respectively.
6. Crop the pictures, be careful that it does not replace the picture it is taking it from, if you do not want it to, and put the file locations in the tools.json, or drawer.json dpeending on what it is.
7. Try to have the two pictures x,y,w,h values be as close as possible if not exactly the same, and try not to have the part of any other tool in the image.
8. To get symbols just crop the symbol and put the file location in the tools.json, you do not need the x,y,w,h.