

First, I make a list of all the xml files in the folder. I chose to use glob to find all xml files in the folder rather than asking the user for the file names because it is easier on the user. For the 5-6 xml files we had to parse for the project it isn't such a big deal to type the file names, but I wanted my solution to be scalable.

Then I go through all the files in that list. I use Python's ElementTree API to parse the data from the xml files. I skip any files that can't be parsed and print out a message notifying the user of which file has been skipped. To find the leaf components, I recursively search through the tree for elements that don't have children, and add them to my list of leaf components. I did it recursively because that is the simplest way to find them that I could think of.

I then try to open the png with a matching name and again skip & notify the user if opening that image fails. Then, I go through each leaf component and get the bounds of the component and draw a rectangle on the image around those bounds using PIL. Finally, I save the image to the same folder that everything else is in.