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The first step that I took in my solution was to sort the given .xml and .png files into lists. I thought that this was a good choice because the files were given together, in order, in the same folder. Therefore, by sorting them into lists each .xml file would have the same index as its corresponding .png file. If the files were not already in order, then I likely would have retrieved each file by name.

My next step was to create a function to parse the xml files. To do this I used the etree from the lxml library. I chose this library because it allowed me to set up a parser with the recovery attribute. The recovery attribute allows the parser to ignore errors in the xml file like the one seen in "com.apalon.ringtones.xml". I used the parser to find leaf nodes and extract the "bounds" attribute from each leaf node. The function returns a list of these bounds which is then passed to another function to draw boxes around the GUI elements.

To draw the boxes, I used the Pillow library. I used the image file path and the list of bounding boxes to do this. After drawing each box in the list, I saved each new image as "modified." + the original name of the .png file.