labelImg Tutorial

**Basics**

Opening an image: Click the ‘Open’ button on the sidebar and navigate to the image that you want to load into the program. Click OK.

Opening a directory of images: labelImg has the ability to load multiple images into the program to be annotated. To do this, click the ‘Open Dir’ button and navigate to the directory of images that you want to load. Click OK. To navigate through the images within labelImg, use the ‘Next Image’ and ‘Prev Image’ buttons.

Note: Either an image or directory of images must be loaded in order to draw boxes.

Drawing a box: click the ‘Create RectBox’ button or press ctrl+n then click on the image to begin drawing the box. Move the mouse to a desirable place so that the box covers the entire object that you are annotating, then click again. Type your desired label into the popup box that appears and click OK. If you are using a predefined label, then double click on it in the menu.

Note: to change the predefined labels, go into the ‘\labelImg\data’ and edit ‘predefined\_classes.txt’ to contain the necessary labels, each on a separate line.

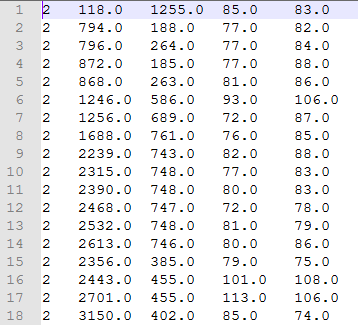
Resizing a box: Click and drag one of the circles shown in the corner of the annotation box.

Moving a box: Click and drag in the middle of the annotation box.

Deleting a box: Click on a box and click the ‘Delete RectBox’ button or press <delete> on your keyboard.

**Saving**

labelImg can save images in 2 formats: .txt and .xml. The txt format is shown below on the left, xml on the right.

The txt file is the format that labelImg saves in when you click ‘Save’. To save in xml, go to ‘File -> Export as XML’. The xml format has a lot of extra baggage and must be parsed to access the information, so the txt format is recommended. The txt file contains: label xmin ymin width height, where xmin and ymin make up the top-left corner of the box.

**Advanced Features**

Autosave

Autosave can be used when you have a directory of images loaded so that you don’t have to specify where to save each annotation. LabelImg will automatically save your annotations to a specified directory, and the annotations will be saved to this directory each time you click ‘Next Image’ or ‘Prev Image’. The name of the annotation file that is saved is the same as the name of the image. The autosave feature will only save in the txt format. Finally, it is time to specify the directory. Remember that a directory of images must already be loaded! Go to ‘File -> Change Default Saved Annotation Directory’ and navigate to the directory where you want the annotations to be saved.

Opening annotations

To open up and view the annotations that you have already drawn, there are 2 options. Which option you use depends on if you have a single image loaded or an entire directory of images.

*Single Image*

To load the annotations for a single image, you must first have that image loaded into the program. Then go to ‘File -> Open Annotation’ and navigate to the txt or xml file that contains the annotations. Click OK. The annotations should be loaded

*Directory of Images*

Loading the annotations for a directory of images is easy if you have already read about the autosave feature. To load the annotations, follow the steps for the autosave feature. Once you have specified the default saved directory, the annotations from that directory will load for the image of the EXACT same name. The annotations will not be displayed on the image until you hit ‘Next Image’ or ‘Prev Image.’ This is a minor issue that will be fixed in the future. For now, if you want to view the annotations for the image you currently have loaded, click ‘Next Image’ followed by ‘Prev Image’ or vice versa.

Advanced Mode

Advanced mode is implemented for those who have been annotating for a while. Advanced mode allows the user to draw multiple boxes without clicking the ‘Create RectBox’ or pressing ctrl+n every time. The user specifies what kind of object they are annotating up front.

To enter advanced mode, go to ‘View -> Advanced Mode’ and notice that the side bar changes. There is no longer a ‘Create RectBox’, ‘Edit RectBox’, or ‘Delete RectBox’, but a ‘Create Mode’ and ‘Edit Mode’. Click the ‘Create Mode’ button. LabelImg will ask for the object that is being annotated (Note: make sure you DO NOT leave the label blank or this will not work). After specifying the object label, draw as many boxes as you would like. All of these boxes will have the object label that you specified in the beginning. Click the ‘Edit Mode’ button when you are done.

Crop RectBoxes

LabelImg has a feature where you can save the ‘sub-image’ inside of each annotation box as their own image. To do this, go to ‘File -> Crop RectBoxes’ and navigate to the directory where you want all of these images to be saved. Click ‘Select Folder’ once you have selected the desired folder. If there are 30 annotation boxes, 30 images will be saved to that folder, each containing a cropped image inside of an annotation box.