Introduction:

For this lab you will create a PyQt GUI that use OpenCV to find the distance of a ball given left and right images. You will need to read in both images, find the centroid of the ball in each image, and use the centroid data to find the X,Y,Z position of the ball in 3D space. Your module:

- shall be able to detect the ball distance with all five sets of provided stereo images
- shall display the X,Y,Z distance of the ball

Tips:

- OpenCV does not have a good GUI, only basic sliders. Use the provided 'pyqt-opencv-simplified' code as a starting point.
- Work with your group to investigate different techniques of finding the centroids of the ball
  - Different color spaces
  - Based on shape
  - Region of interest based on the first frame
  - AI
  - Blob size

Due Date:

You have exactly 14 days [336 hrs] till you need to submit the lab.

Lab Submission:

There are two ways to submit the lab:

      1] Demonstrate functionality in the physical lab classroom and receive a signoff

      2] Submit a video demonstrating functionality to the below link:

            https://u.pcloud.com/#page=puplink&code=jIPkZxBXrCfhr5hJMKttFFqASru9AlcKX

Grading:

Labs will be graded against the below rubric. Late labs will get a 0.

Grade	Description
0	Lab handed in late, or not handed in
1	Poor quality
2	Good quality