This software is the simplified MATLAB re-implementation of the algorithm in our paper published in IEEE Trans. on Cybernetics. Please run the demo code "distanceMeasurement.m" for measuring various types of distances.

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Note that all the experimental results in the above paper are based on the original IOS/Objective C implementation, and we are currently not allowed to distribute that original code.

Should you have any question regarding this software and its corresponding results, please contact:

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The demo process is shown below briefly for your convenience.

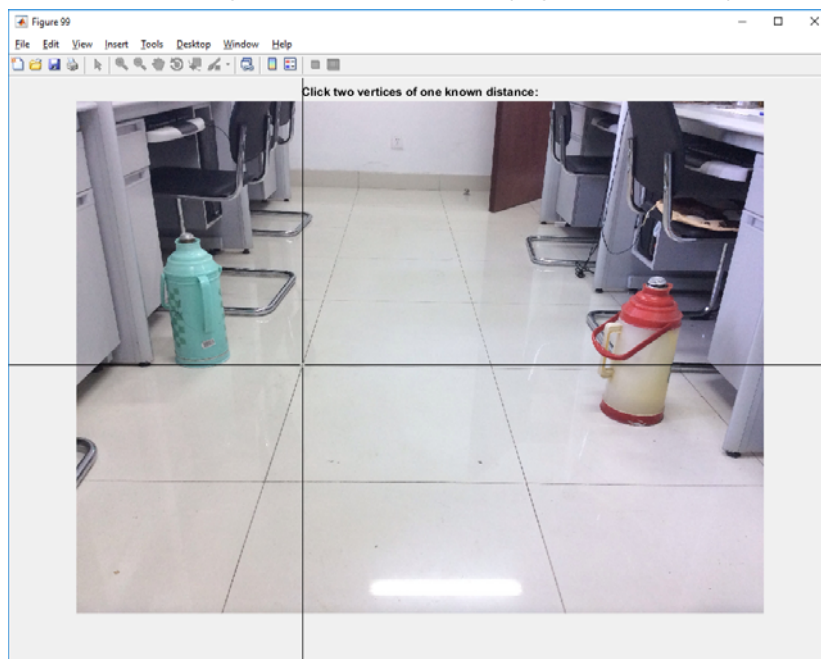1. Compute the magnification ratio using one known distance (Figure 1, 2 and 3).

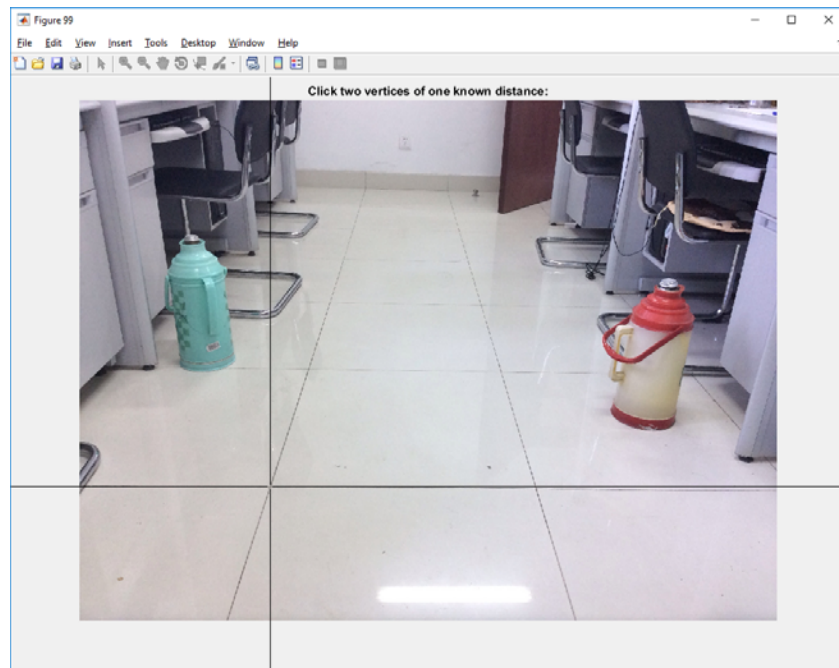Figure 1. Specifying the start position of the known distance

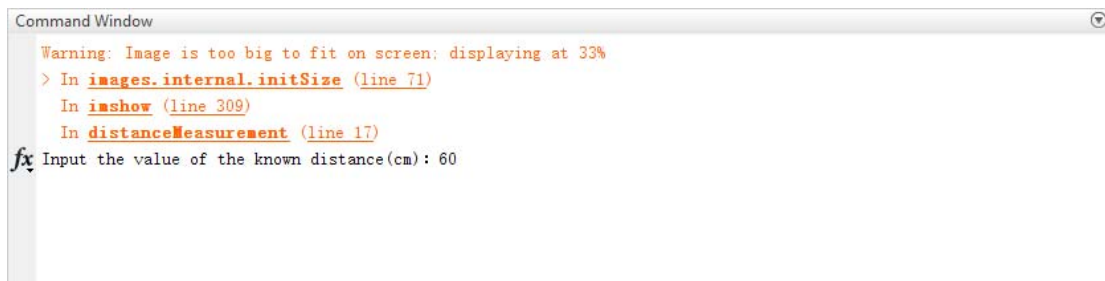Figure 2. Specifying the end position of the known distance

Figure 3. Specifying the real length of the known distance.

2. Measure ground distance by specifying the start and end position of the distance to measure (Figure 4, 5 and 6).
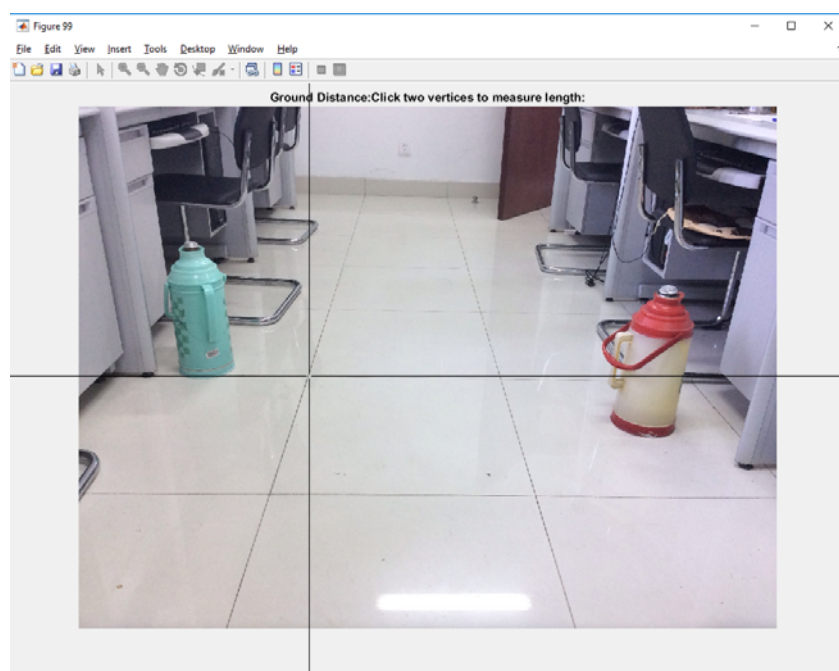

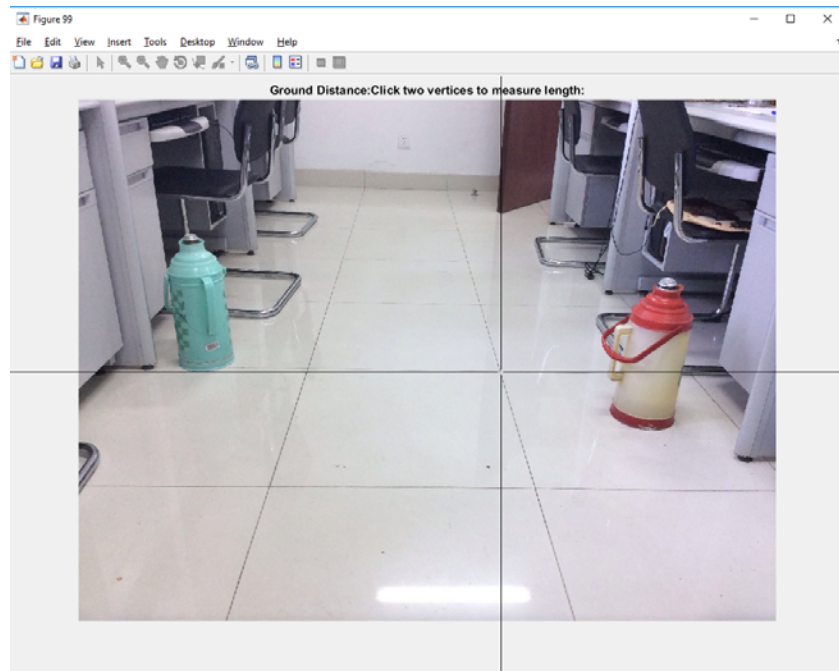Figure 4. Specifying the start position of the distance to measure

Figure 5. Specifying the end position of the distance to measure

Figure 6. Measurement result of the ground distance

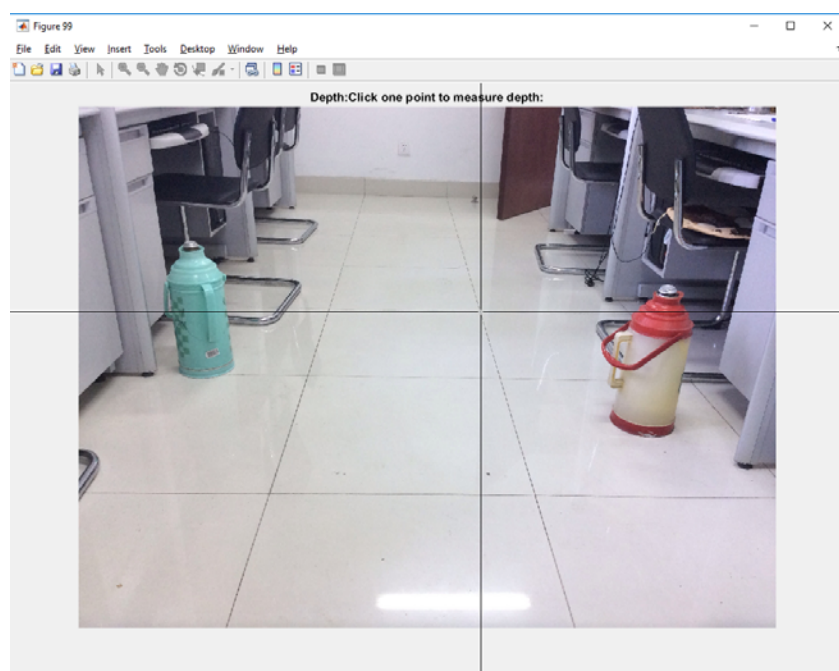3. Measure the depth of a user specified position in the image (Figure 7 and 8).

Figure 7. Specifying the depth to measure

Figure 8. Measurement result of the depth

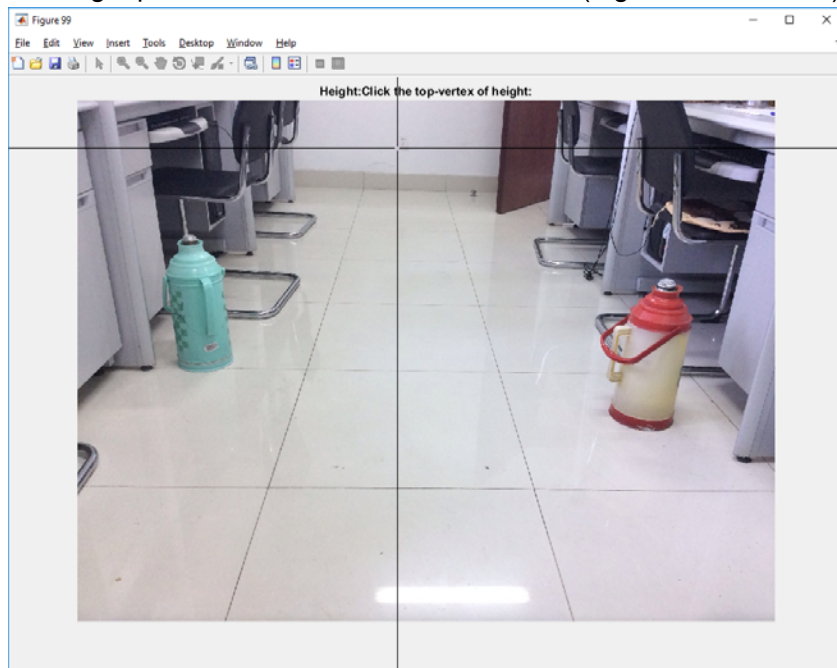4. Measure height by clicking top-vertex and bottom vertex in order (Figure 9, 10 and 11).

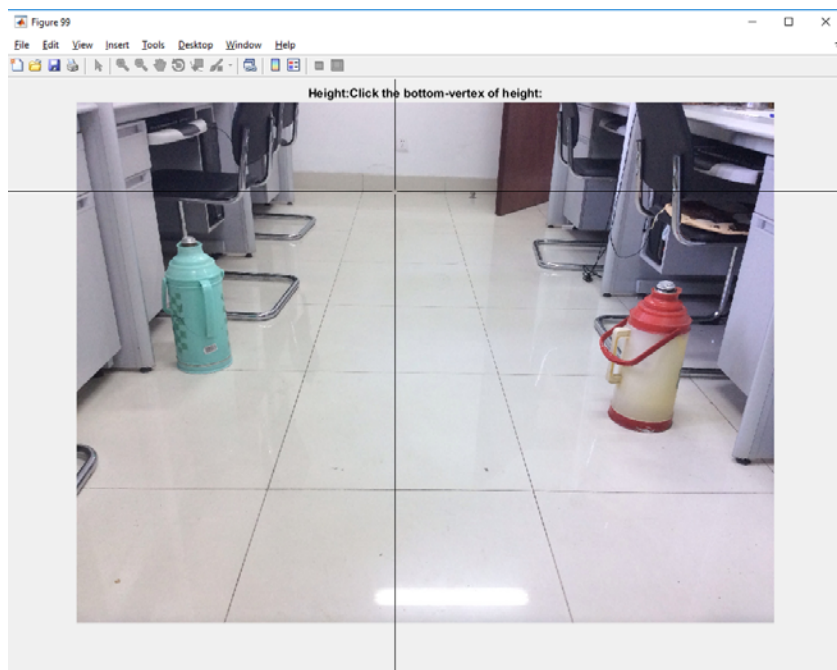Figure 9. Specifying the top-vertex of the height firstly

Figure 10. Specifying the bottom-vertex of the height secondly

Input the value of the known distance(cm): 60
Warning: Image is too big to fit on screen; displaying at 33%
> In images.internal.initSize (line 71)
  In imshow (line 309)
  In distanceMeasurement (line 49)
The ground distance between inputs points is: 60.4241(cm)
The depth of input point is: 252.1815(cm)
The height between inputs points is: 29.61(cm)

fx >>

Figure 11. Measurement result of the height