

AutoCAD® Self-paced Learning Modules
AutoCAD 2D Advanced
Module 10
Dynamic Blocks - Part 2

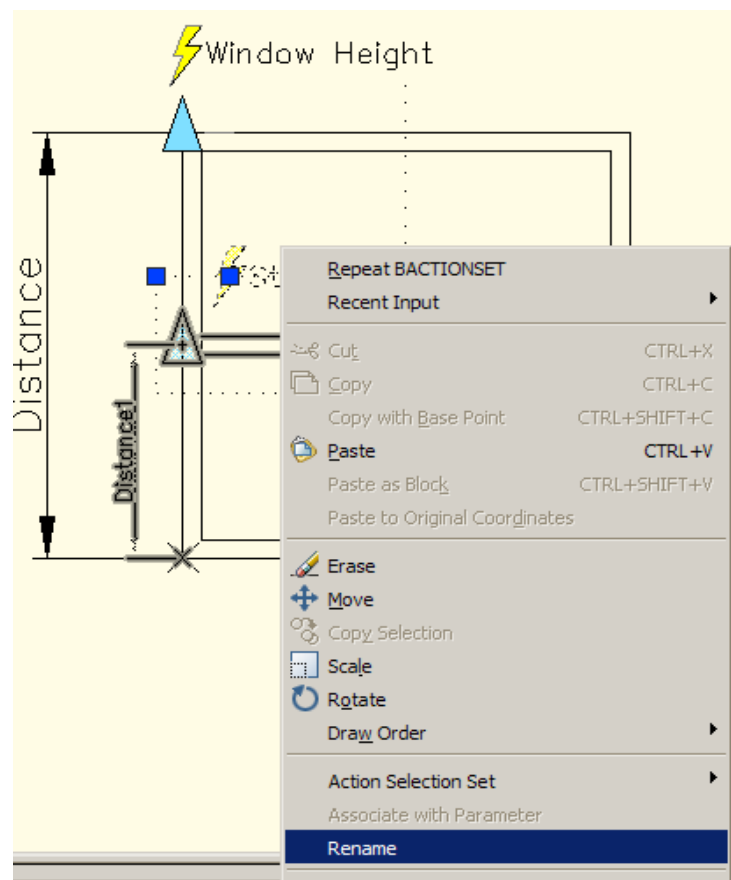
Learning Outcomes:

When you have completed this module, you will be able to:

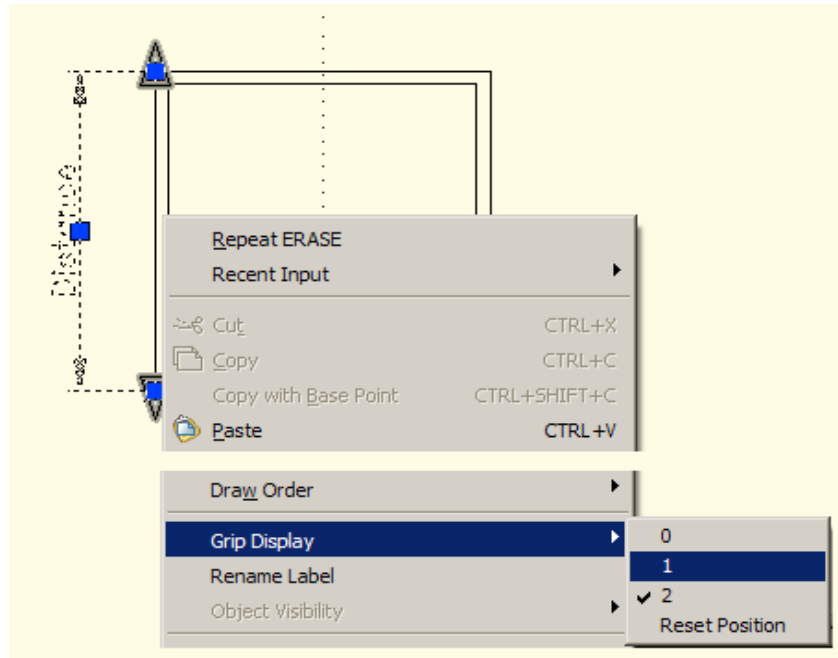
1. Create dynamic blocks by applying parameter sets.
2. Create dynamic blocks using lookup actions and visible state.

Editing the Properties of Dynamic Blocks

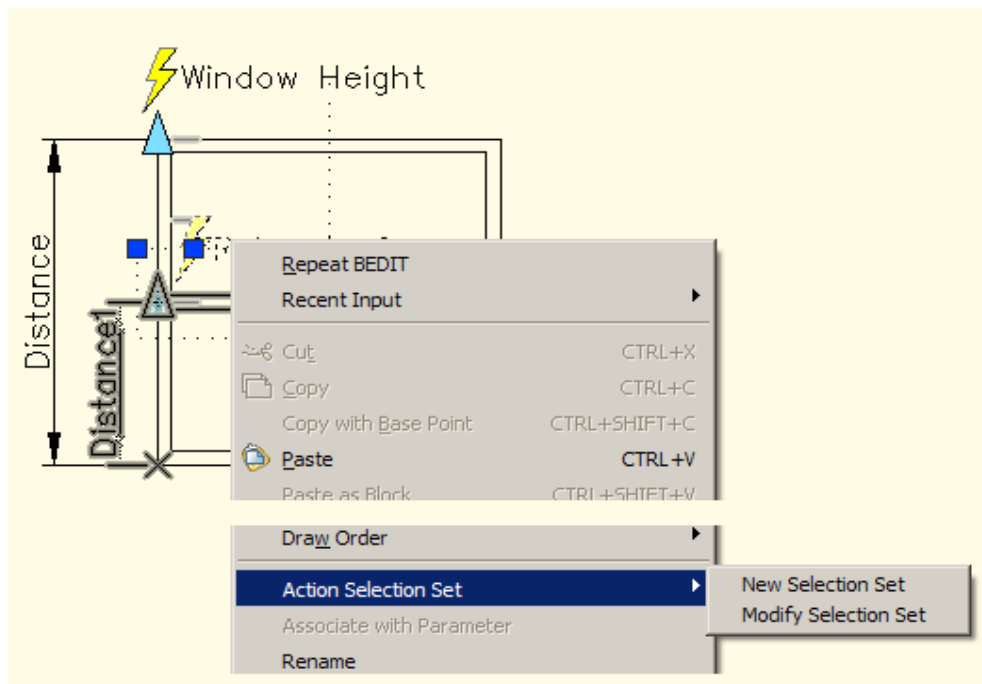
Instead of using the Properties window some of the properties of dynamic blocks can be changed in the right-click menu as shown in the following examples.



Renaming an Action



Setting the Number of Grips



Modifying a Selection or Creating a New Selection Set

WORK ALONG

Creating Dynamic Blocks - Part 3

Step 1 Start a new drawing using the template Template 2D Advanced English.dwt. Check the current profile and if required, set it to AutoCAD 2D Advanced.

Step 2 Enable Dynamic Input.

Step 3 Save the drawing with the name AutoCAD 2D Advanced Workalong 10-1.

Step 4 Using the INSERT command, insert the block Desk and Telephone. The insert point can be anywhere on the drawing. Do not scale or rotate the block.

Step 5 Double click the block to open the Edit Block Definition dialogue box. Select the Desk and Telephone block and click OK.

Step 6 Your Block Editor should now appear as shown in the figure. Enable the Parameter Set tab. (Figure Step 6)

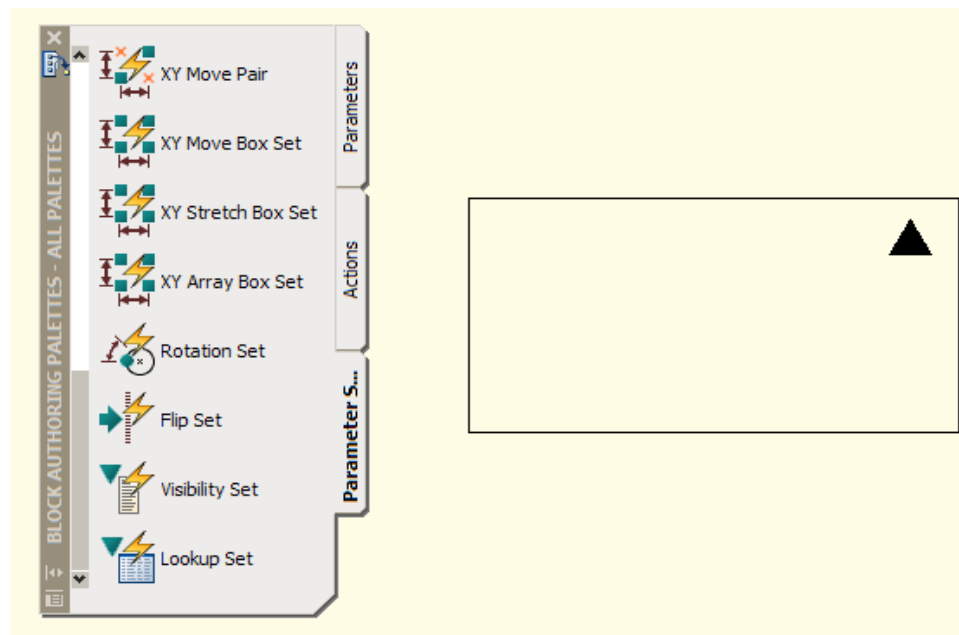


Figure Step 6

Author's Comments: As you get better at creating dynamic blocks you can use the icons on the Parameter Set tab to create a parameter and an action at the same time. Using them will save you a lot of time when creating dynamic blocks.

Step 7 Click the Linear Stretch with one Grip icon. (Figure Step 7)

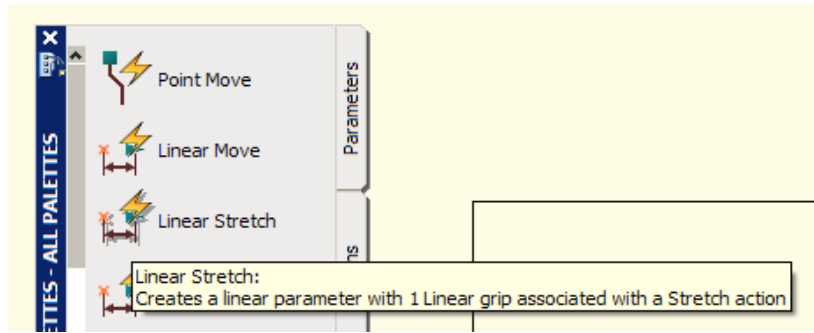


Figure Step 7

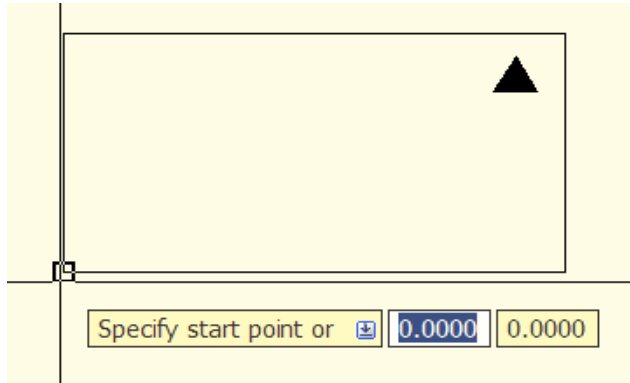


Figure Step 8

Step 8 For the start point, snap to the bottom left corner of the desk. (Figure Step 8)

Step 9 For the other end, snap to the bottom right corner. (Figure Step 9)

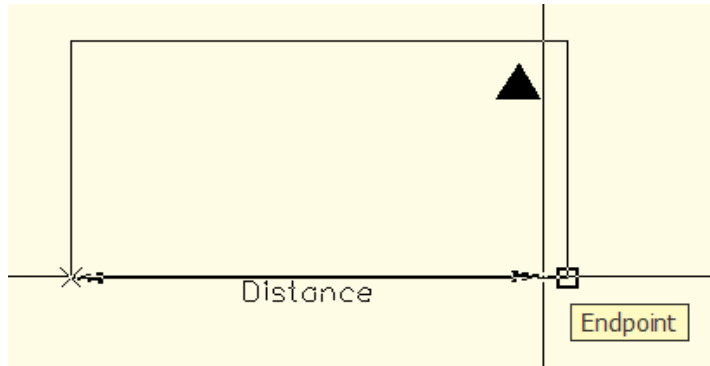


Figure Step 9

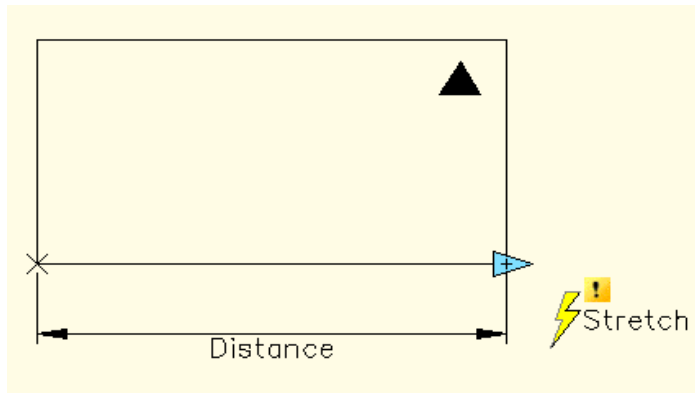


Figure Step 10

Step 10 Locate the Stretch icon by eye. (Figure Step 10)

Step 11 Double click the "!" icon to apply the stretch action. Use a crossing window to locate the stretch window. (Figure Step 11)

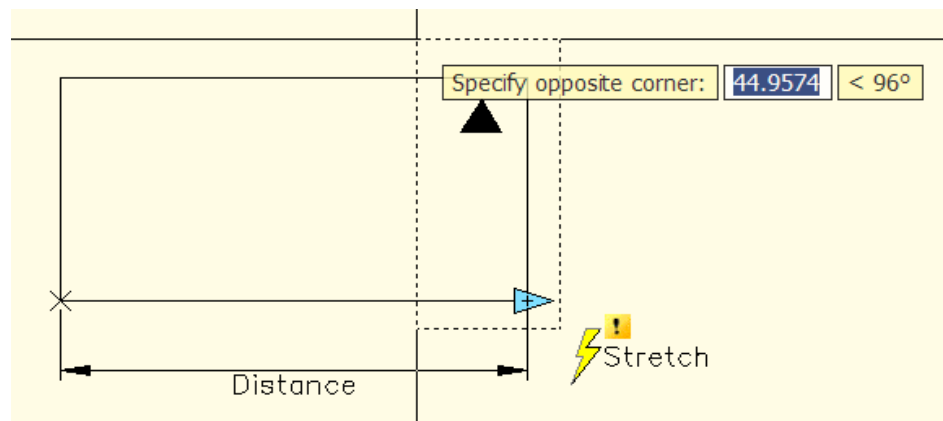


Figure Step 11

Author's Comments: After you locate the Stretch icon notice that the "!" icon appears. That means that an action has not be applied yet. All you have to do now is double click the "!" icon and apply the stretch action.

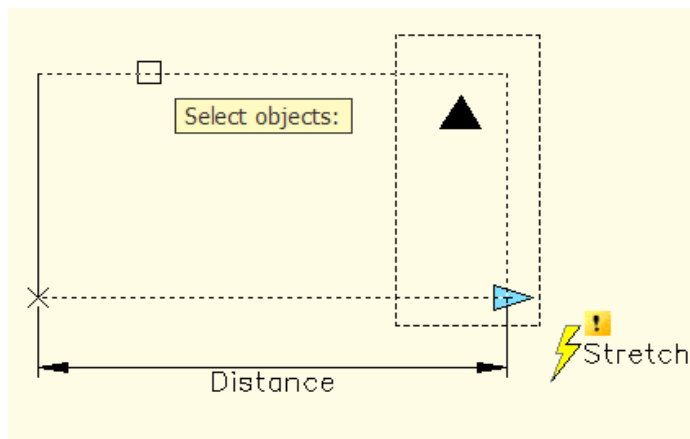


Figure Step 12

Step 12 Select the three objects. (Figure Step 12)

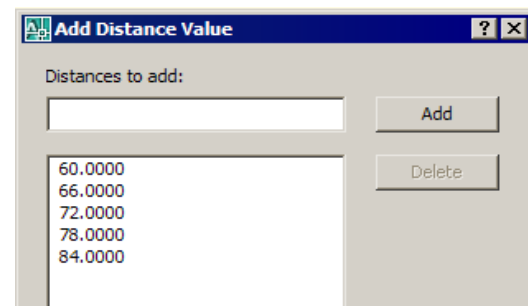


Figure Step 13

Step 13 Using what you learn in Module 9, create a list for the stretch as shown in the figure. (Figure Step 13)

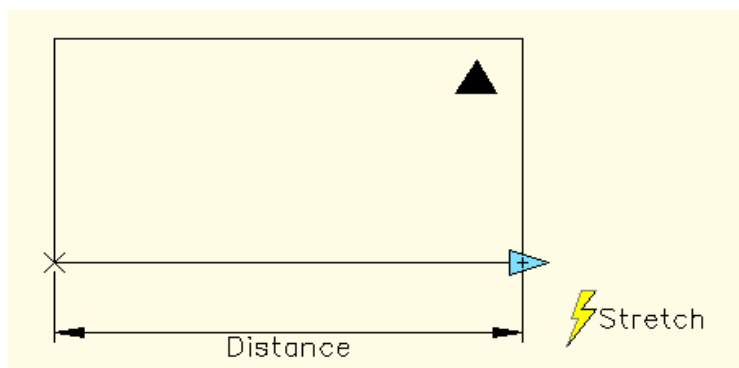


Figure Step 14

Step 14 Your block should now appear as the shown in the figure. (Figure Step 14)

Step 15 Click the Lookup Set icon.
(Figure Step 15)

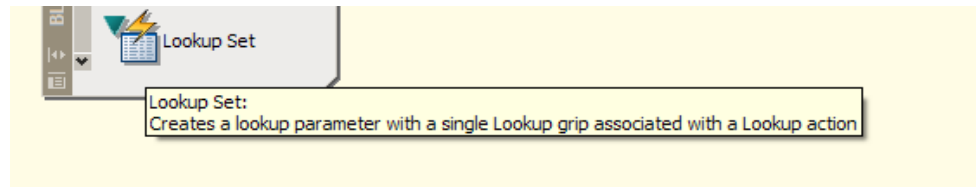


Figure Step 15

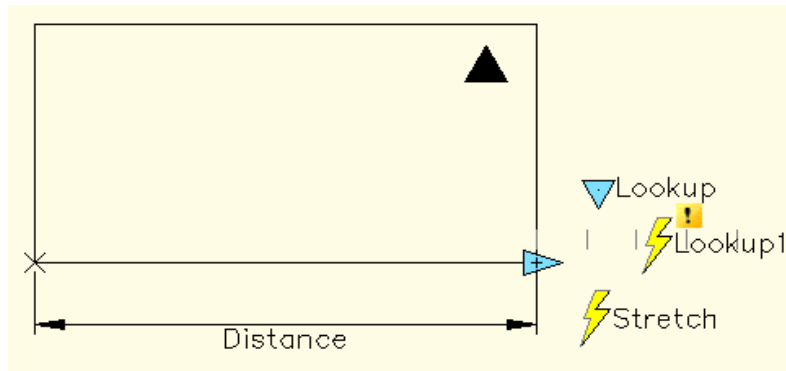


Figure Step 16

Step 16 Locate it by eye as shown in the figure.
(Figure Step 16)

Step 17 Open the Properties window and select the Lookup1 action icon. While it is selected, expand the Misc area and select the Lookup table icon to open the Property Lookup Table dialogue box. (Figure Step 17A and 17B)

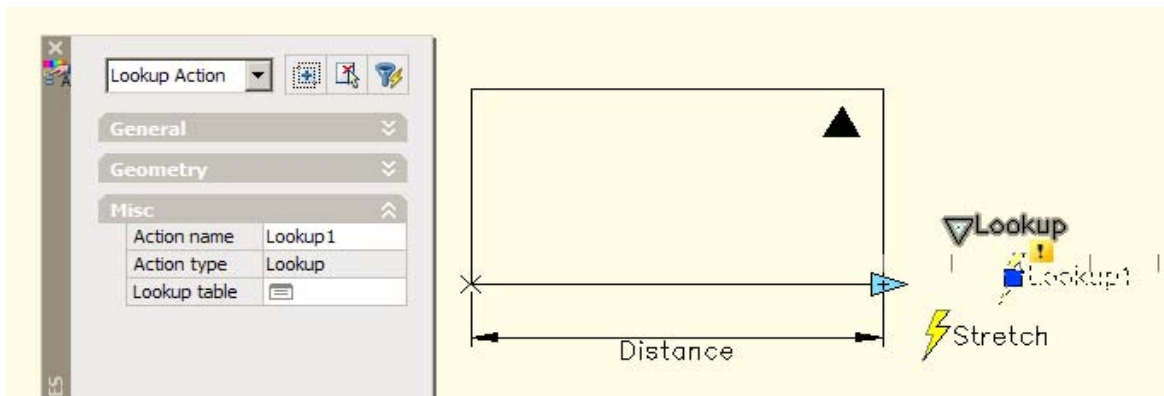
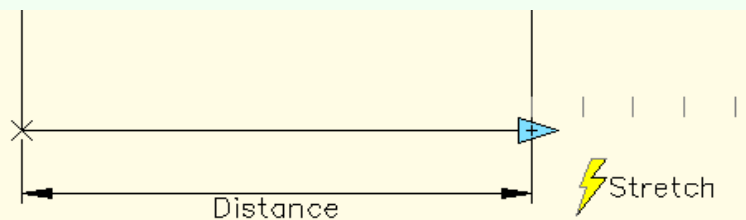


Figure Step 17A

USER TIP

When a list has been assigned to a parameter, the Block Editor will indicate each item in the list with a small construction object. In this figure they are stretch locations.



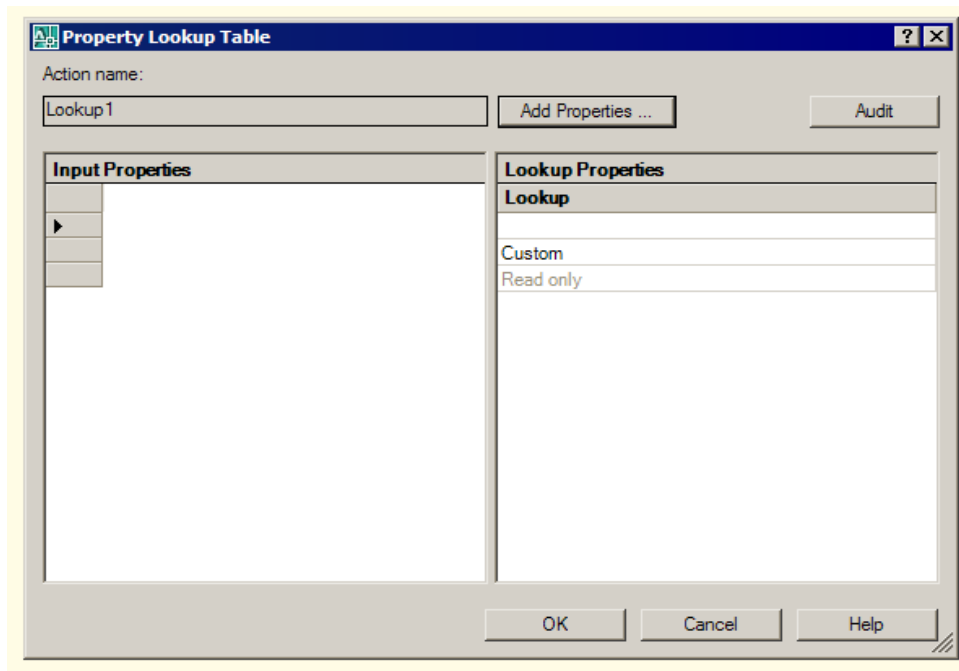


Figure Step 17B

Step 18 Click the Add Properties box and it will open the Add Parameter Properties dialogue box. In it, select Linear and click OK. (Figure Step 18)

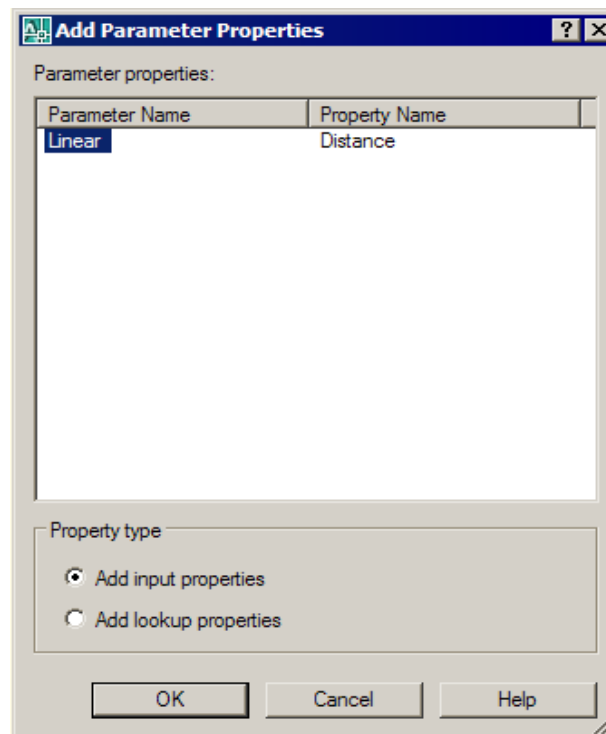


Figure Step 18

Step 19 Pull down the list under Distance and select 60.0000. (Figure Step 19)

Author's Comments:
The Distance list is the Dist value list property of the block.

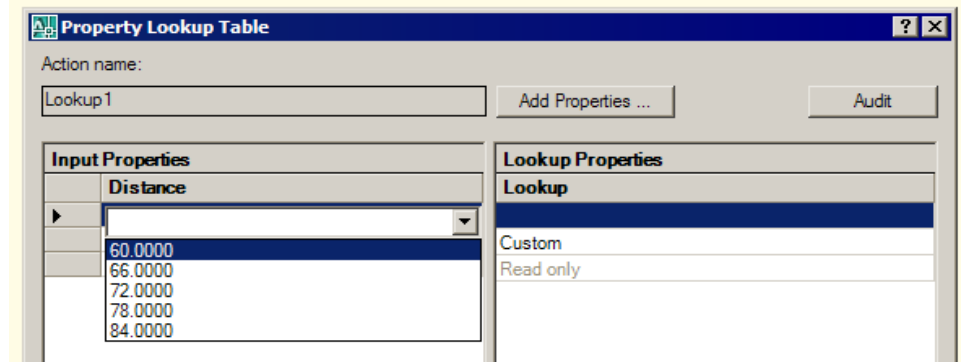


Figure Step 19

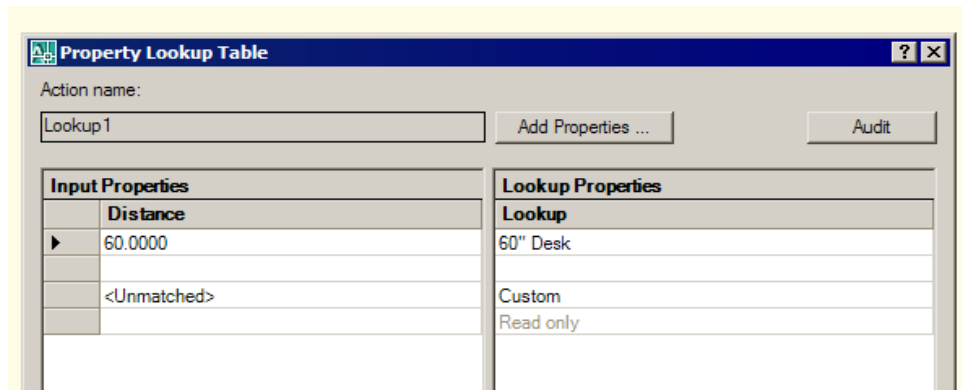


Figure Step 20

Step 20 Under Lookup Properties, enter the name 60" Desk on the 60.0000 distance line. (Figure Step 20)

Step 21 Repeat the same for each distance. When complete, your table should match the figure. (Figure Step 21)

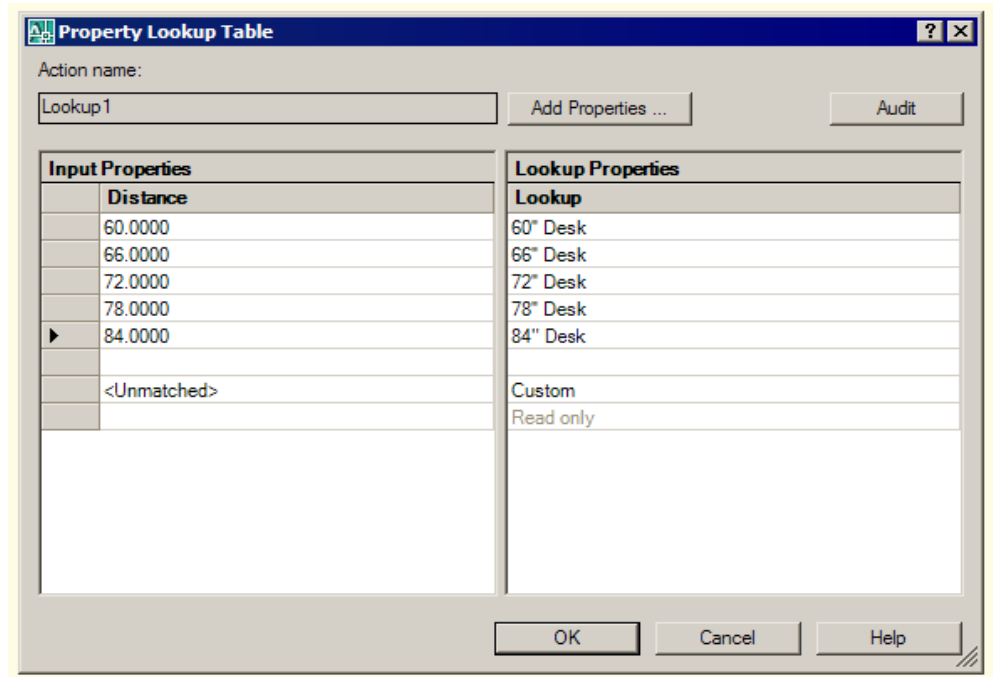


Figure Step 21

Step 22 Using the right-click menu, rename the lookup action icon to Lookup Length. (Figure Step 22)

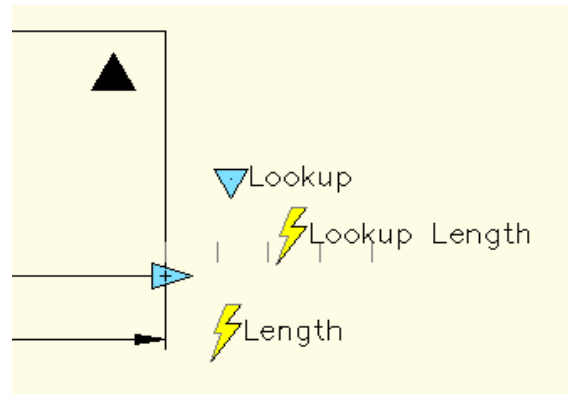


Figure Step 22

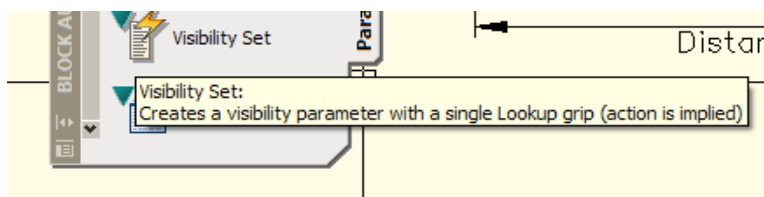


Figure Step 23

Step 23 Click the Visibility Set icon in the Parameters Sets tab. (Figure Step 23)

Step 24 Locate the Visibility action icon by eye. (Figure Step 24)

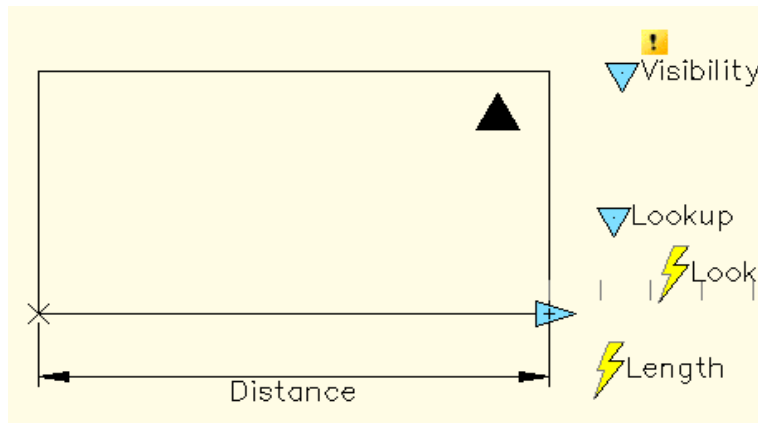


Figure Step 24

Step 25 Click the Manage Visibility States icon in the top right corner of the Block Editor. (Figure Step 25)

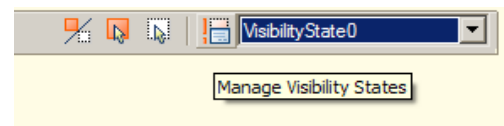


Figure Step 25

Step 26 In the Visibilities States dialogue box, rename Visibility State0 to Desk and Telephone. (Figure Step 26A and 26B)

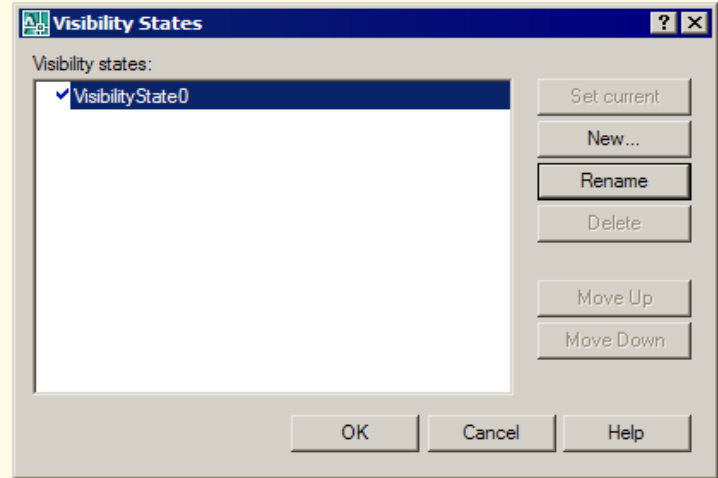


Figure Step 26A

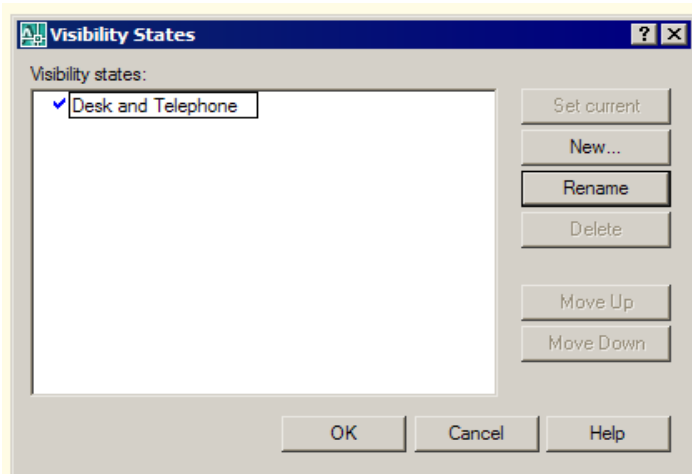


Figure Step 26B

Step 27 Click the New button and in the New Visibility States dialogue box enter the name Desk. (Figure Step 27)

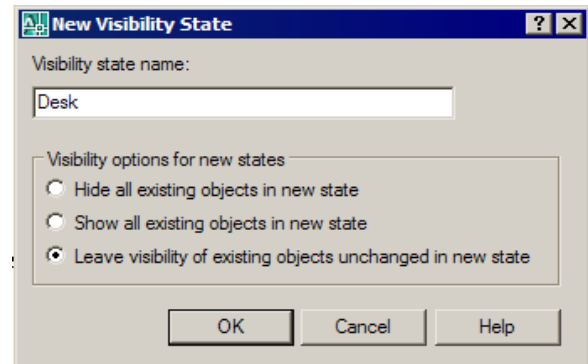


Figure Step 27

Step 28 The Visibility States dialogue box should now appear as the figure. Close the dialogue box (Figure Step 28)

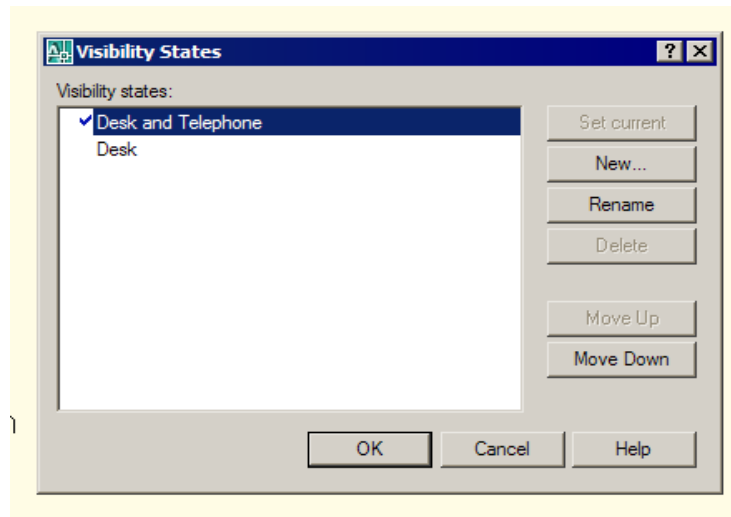
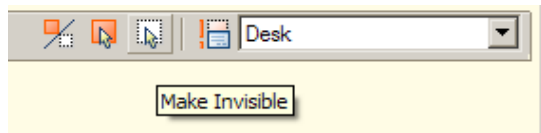


Figure Step 28



Step 29 In the top right corner of the Block Editor select Desk from the visibility pull down list. Click the Make Invisible icon. (Figure Step 29)

Figure Step 29

Step 30 Using a window, select the telephone symbol. (Figure Step 30)

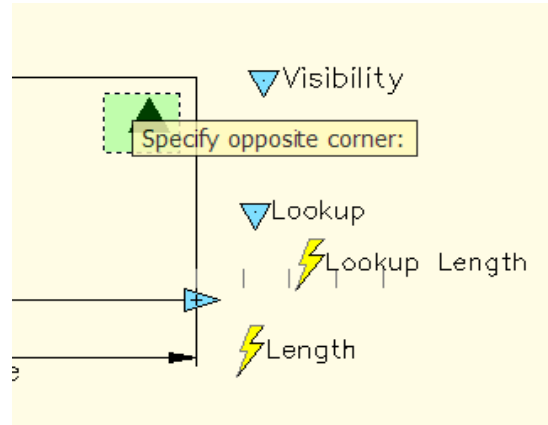


Figure Step 30



Figure Step 31

Step 31 Save the block and close the Block Editor. Insert the block into the drawing and select it. (Figure Step 31)

Step 32 Click the Lookup icon. It should display a list of the available desk sizes. (Figure Step 32)

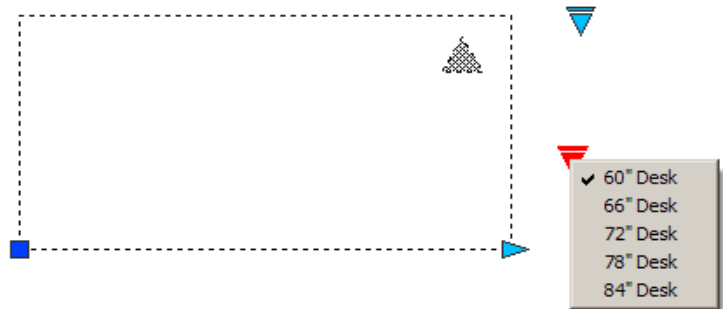


Figure Step 32

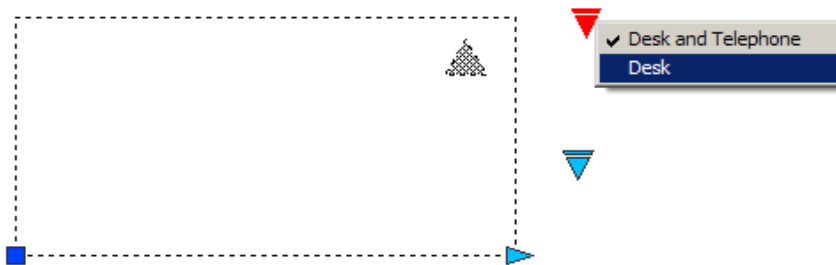


Figure Step 33

Step 33 Click the Lookup icon for the visibility and select Desk. (Figure Step 33)

Step 34 The block should now display without the telephone symbol. (Figure Step 34)



Figure Step 34

Step 35 Save and close the drawing.

The Key Principles in Module 10

1. Instead of using the Properties window some of the properties of dynamic blocks can be changed in the right-click menu.
2. To save time when creating dynamic blocks, use the icons on the Parameter Set tab to create a parameter and an action in one step.

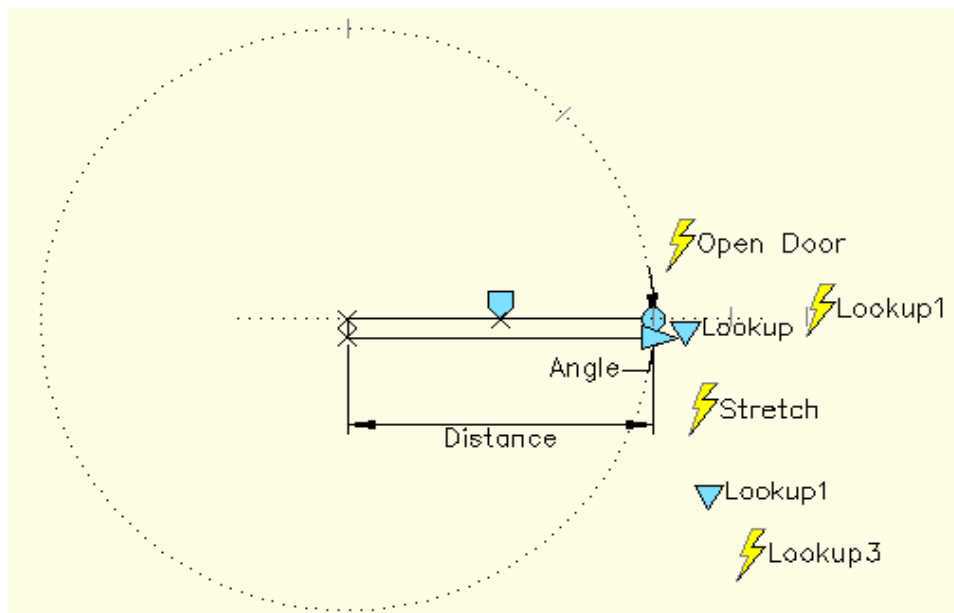
Lab Exercise 10-1**Time Allowed: 90 Min.****Name****Template**

AutoCAD 2D Advanced Lab 10-1

Template 2D Advanced English.dwt

Instructions:

- STEP 1** Start a new drawing using the information above.
- STEP 2** Insert the block Door into the drawing at any location. Do not rotate or scale the block.
- STEP 3** Add dynamics to the block by adding an alignment as shown in figure below. The alignment will allow you to align the door to a wall on a floor plan.



The Completed Dynamic Block in the Block Editor

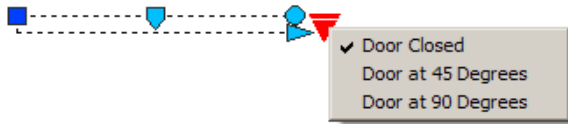


The Block Selected in a Drawing

STEP 4 Add the dynamics so that the block can be stretched using a Lookup table to 24, 30 and 36 inches.



The Lookup for Stretching the Door

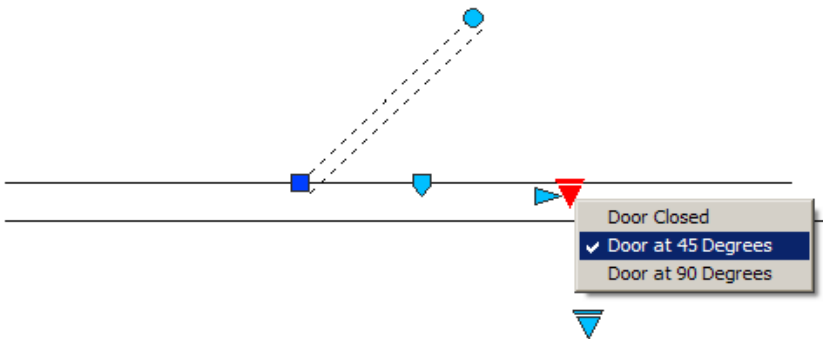


STEP 5 Add the dynamics so that the block can be rotated using a Lookup table to 0, 45 and 90 degrees.

The Lookup for Rotating the Door



STEP 6 Draw a 4 inch wall in the drawing and insert the block using the Align parameter.



STEP 7 Check the doors rotation parameters.

STEP 8 Check the doors stretching parameters.

