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.

Creating Parameter Sets

In Module 9 you learned how to set the parameter first then apply an action to that parameter. In this module, you will be taught how to set both the parameter and action on one command. It is called a parameter set. See Figure 10-1.
Creating Dynamic Blocks - Part 3
For AutoCAD 2011-2014 users

AutoCAD 2009-2010 users, skip to page 10-13

**Step 1** Start a new drawing using the template 2D Advanced Layout 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** Enter the UNITS command. In the Units dialogue box, set the Insertion Units to Inches. 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)

---

**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.

---

![Block Editor](image_url)
**Step 7**  Click the Linear Stretch with one Grip icon.  (Figure Step 7)

**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)

**Step 10**  Locate the Distance1 parameter by eye.  (Figure Step 10)
Step 11  Place the Graphic cursor on the Stretch icon, and right click the mouse. In the Right-click menu, select New Selection Set. (Figure Step 11)

Author's Comments:  The Stretch icon will display the ‘! ’ icon. The ‘!’ icon means that an action has not been applied yet.

Step 12  Using what you learned in Module 9, select the two corners of the crossing window and then select the three objects to be affected by the stretch. (Figure Step 12A and 12B)
Step 13  Using what you learn in Module 9, create a list for the stretch as shown in the figure. (Figure Step 13A and 13B)

Figure Step 13A

Figure Step 13B

Step 14  Click the Lookup Set command and when prompted, place the icon by eye. (Figure Step 14A and 14B)

Figure Step 14A

Figure Step 14B
**Step 15** 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 15A and 15B)
When a list has been assigned to a parameter, the Block Editor will indicate each item in the list with a small construction line. In this figure, they are stretch locations.

**Step 16**  Click the **Add Properties** box and it will open the **Add Parameter Properties** dialogue box. In it, select **Linear** and click **OK**. (Figure Step 16)

**Step 17**  Pull down the list under **Distance** and select **60.0000**. (Figure Step 17)

**Author's Comments:**  The Distance list is the Dist value list property of the block.
Step 18  Under **Lookup Properties**, enter the name **60'' Desk** on the 60.0000 distance line. (Figure Step 18)

![Figure Step 18](image)

Step 19  Repeat the same for each distance. When complete, your table should match the figure. (Figure Step 19)

![Figure Step 19](image)
Step 20  Using the Right-click menu, rename the lookup action icon to *Lookup Length*. (Figure Step 20)

![Figure Step 20](image)

Step 21  Click the *Visibility Set* icon in the *Parameters Sets* tab. Locate the *Visibility* action icon by eye. (Figure Step 21A and 21B)

![Figure Step 21A](image)

![Figure Step 21B](image)

Step 22  Click the *Manage Visibility States* icon in the top right corner of the Block Editor. (Figure Step 22A and 22B)

![Figure Step 22A](image)

![Figure Step 22B](image)
**Step 23** In the Visibilities States dialogue box, rename Visibility State0 to Desk and Telephone. (Figure Step 23)

(Figure Step 23)

**Step 24** Click the New button and in the New Visibility States dialogue box, enter Desk and click OK. (Figure Step 24A and 24B)

(Figure Step 24A)

(Figure Step 24B)
Step 25  In the top right corner of the Block Editor, select Desk from the visibility pull down list. Click the Make Invisible icon. (Figure Step 25)

Step 26  To the Select objects prompt, use a window and select the telephone symbol. (Figure Step 26)

Step 27  Save the block and close the Block Editor.

Step 28  Insert the block into the drawing and select it. (Figure Step 28)
**Step 29**  
Click the **Size** lookup icon. It will display a list of the available desk sizes. (Figure Step 29)

![Figure Step 29](image)

**Step 30**  
Click the **Visibility** lookup icon and select **Desk**. (Figure Step 30)

![Figure Step 30](image)

**Step 31**  
The block should now display without the telephone symbol. (Figure Step 31)

![Figure Step 31](image)

**Step 32**  
Save and close the drawing.
WORK ALONG

AutoCAD 2011-2014 users, skip to page 10-23

Step 1   Start a new drawing using the template 2D Advanced Layout 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   Enter the UNITS command. In the Units dialogue box, set the Insertion Units to Inches. 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)

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)

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)

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)

**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.

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

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

**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)

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)

**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.
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)
**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](image)

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

![Figure Step 20](image)

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

![Figure Step 21](image)
Step 22 Using the right-click menu, rename the lookup action icon to **Lookup Length**. (Figure Step 22)

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)

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

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

![Figure Step 27](image)
Step 28  The Visibility States dialogue box should now appear as the figure. Close the dialogue box (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)

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

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)

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)

Step 35  Save and close the drawing.

The Key Principles in Module 10

1  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

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<thead>
<tr>
<th>Drawing Name</th>
<th>Template</th>
</tr>
</thead>
<tbody>
<tr>
<td>AutoCAD 2D Advanced Lab 10-1</td>
<td>2D Advanced Layout English.dwt</td>
</tr>
</tbody>
</table>

**Time Allowed: 90 Min.**

**Step 1**  Start a new drawing using the information above.

**Step 2**  Enter the UNITS command. In the Units dialogue box, set the Insertion Units to Inches. 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. (Figure Step 3A and 3B)

---

**Figure Sep 3A**
The Completed Dynamic Block in the Block Editor

**Figure Step 3B**
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. (Figure Step 4)

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

Step 6  Draw a 4 inch wall in the drawing and insert the block using the Align parameter. (Figure Step 6)
**Step 7** Check the doors rotation parameters. (Figure Step 7)

![Figure Step 7]

**Step 8** Check the doors stretching parameters. (Figure Step 8)

![Figure Step 8]
Learning Outcomes

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

1. Describe attributes and explain how they are defined and edited in a block.
2. Apply the ATTDEF and ATTEDIT commands to define and edit attributes assigned to inserted blocks in a drawing.

Attributes

An **attribute** is a tag or label that is attached to a block and contains data assigned by the user. The data contained in an attribute can be anything from numbers, prices, colors, etc. Think of each attribute assigned to a block as a column in a database which can be extracted into a table on the drawing, a spreadsheet, or in an external document.

Blocks containing attributes are defined and inserted into the drawing by the operator. The data attached to them can then be extracted. For example, assume you must insert telephone symbols into floor plans of a large office building. The name of the person assigned to the telephone, the telephone number, and the office number where they are located are assigned as attributes to each telephone block. After all of the blocks are inserted, you could extract a list containing all the information listed above, sorted by name, telephone number, or room number. You are now working smarter, not harder.

Attributes are defined with Tags and Prompts. See Figure 13-1. After the attributes are inserted, they will appear as tags as shown in Figure 13-2. In the figure three attribute tags are assigned. The block is then created including the attributes.

When the block is inserted into the drawing and the values assigned to the attributes, it will appear as shown in Figure 13-3. The attributes can be visible or invisible.

Figure 13-1
Defining a Block with a Tab and a Prompt

Figure 13-2
Attribute Tags

Figure 13-3
Attribute Values
AutoCAD Command:  **ATTDEF**
The ATTDEF command is used to define attribute definitions to a block.

Shortcut:  **ATT**

---

**WORK ALONG**

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

**Step 2**  Save the drawing with the name AutoCAD 2D Advanced Workalong 13-1.

**Step 3**  Enable Dynamic Input.

**Step 4**  Enter the UNITS command. In the Drawing Units dialogue box set the Insertion Units to Inches. Using the INSERT command, insert the block Small Office. Use 0,0 for the insert point. Do not scale or rotate the block.

**Step 5**  Zoom the drawing to its extents.

**Step 6**  Explode the block and your drawing should appear as shown in the figure. (Figure Step 6)

**Step 7**  Zoom in on the Bookshelf. (Figure Step 7)
Step 8  Set the current layer to 0.

Step 9  Enter the ATTDEF command to open the Attribute Definition dialogue box.  Set the dialogue box to match the figure.  Ensure that the Text Height is set to 6.000.  (Figure Step 9)

Author’s Comments:  Setting the Invisible mode will disable the display of the attribute assigned to the block when the block is inserted in the drawing.

Step 10  Enter the Tag and Prompt to match the figure and click OK.  (Figure Step 10)

The system variable ATTMODE is used to control the display of attributes.  It has the following three settings:

0  Off: Makes all attributes invisible.
1  Normal: Retains current visibility of each attribute; visible attributes are displayed; invisible attributes are not displayed.  This is the default.
2  On: Makes all attributes visible.
**Step 11** When prompted for the start point, locate the attribute tag beside the bookshelf as shown in the figure. The exact location is not important. (Figure Step 11)

![Figure Step 11](image)

**Step 12** Repeat the same thing for the Color tag and the Cost tag and locate them to match the figure. (Figure Step 12)

![Figure Step 12](image)

**Step 13** Repeat the same thing for the other three objects. Note the added Number tag for the telephone. Your drawing should appear as shown in the figure. (Figure Step 13)

![Figure Step 13](image)

**Author's Comments:** All the tags are the same except for the telephone. It has an extra tag named Numbers.
Step 14  Enter the BLOCK command to open the Block Definition dialogue box. Enter the name Bookshelf and pick a Base point for the block. (Figure Step 14)

![Figure Step 14]

Step 15  When you select the objects for the block, select the bookshelf objects and the tags as shown in the figure. It is easiest to select them in a crossing window. Do not include the BOOKSHELF title. (Figure Step 15)

![Figure Step 15]

Step 16  Repeat the same thing for the other three blocks. When complete, your drawing should appear as shown in the figure. (Figure Step 16)

![Figure Step 16]
**Step 17**  Enter the ATTDIA system variable as shown below. Ensure it is set to 1.

Command:  **ATTDIA**
Enter new value for ATTDIA <0>: 1

**Author's Comments:** The ATTDIA system variable controls whether the INSERT command uses a dialog box or the command line window prompts for attribute value entry.

**Step 18**  Enter the INSERT command. Set the Insert dialogue box to match the figure.  (Figure Step 18A and 18B)

**Author's Comments:** Locate the block by eye. The exact location is not important.

**Step 19**  In the Edit Attributes dialogue box, enter the values as shown in the figure.  (Figure Step 19)
Step 20  Insert a Desk, Chair and Telephone block as shown in Figure Step 20D. The values are shown in the figures. (Figure Step 20A, 20B, 20C, 20D)
**Step 21** Insert one of each block into all of the other offices. Keep the values the same as Room 102 except for the telephone number which is as follows:

Room 101 - 1101  
Room 103 - 1103  
Room 104 - 1104  

(Figure Step 21)

**Step 22** Save and close the drawing.

---

**AutoCAD Command:**  **ATTEDIT**

The ATTEDIT command is used to edit attribute values of an existing block.

Shortcut: None

---

**USER TIP**

When a block, that has attributes assigned, is exploded it will convert the attribute values back to the original tags. If you want to redefine a tag or add a tag, you can explode the block, complete the edits, and redefine the block and the attributes.
**Editing Attributes**

**Step 1**  Open the drawing AutoCAD 2D Advanced Workalong 13-1 that you completed in first workalong. Using the SAVEAS command, save it with the name AutoCAD 2D Advanced Workalong 13-2. Your drawing should appear as shown in the figure. (Figure Step 1)

**Step 2**  Check the current profile and if required, set it to AutoCAD 2D Advanced.

**Step 3**  Enable Dynamic Input.

**Step 4**  Enter the ATTDISP command as shown below.

Command: ATTDISP
Enter attribute visibility setting [Normal/ON/OFF] <OFF>: ON
Regenerating model.
Command:

**Author's Comments:** Your drawing should appear as shown in Figure Step 4.

**Author's Comments:** Setting the ATTDISP command to ON will enabled the display of all attributes in the drawing. Setting it to OFF will disable the display of the attributes and setting to Normal will retain the current visibility of each attribute. When set to Normal, visible attributes are displayed and invisible attributes are not displayed.

**Step 5**  Enter the ATTDISP command again as shown below.

Command: ATTDISP
Enter attribute visibility setting [Normal/ON/OFF] <ON>: N
Regenerating model.
Command:

**Author's Comments:** Your drawing should now appear a Figure Step 1.
Step 6  Enter the ATTEDIT command and when prompted, select the bookshelf in Room 101. This will open the Edit Attribute dialogue box displaying the attributes for that block. (Figure Step 6A and 6B)

Step 7  Change all three values as shown in the figure. (Figure Step 7)
Step 8  Repeat the same for the Desk, Chair and Telephone blocks in the Room 101 and edit them as shown in the figures. (Figure Step 8A, 8B, and 8C)

Step 9  Enter the EATTEDIT command and when prompted, select the bookshelf in Room 104. This will open the Enhanced Attribute Editor dialogue box displaying the attributes for that block. Repeat for the desk and make the changes shown in the figures. (Figure Step 9A, 9B, and 9C)

Author’s Comments: The Enhanced Attribute Editor and the Properties window can also be used to edit attributes.
Step 10  Open the Properties window and without entering a command, select the chair in Room 104. In the Attributes area, change the attributes as shown in figure. (Figure Step 10)

Author's Comments: As you can see, there are three ways to edit attributes.
**Step 11** Select the telephone block and edit the attributes as shown in the figure. (Figure Step 11)

![Figure Step 11](image)

**Step 12** Save and close the drawing.

---

**USER TIP**

The system variable AFLAG sets the options for the attributes.

Type: Integer  
Saved in: Not-saved  
The default is 16

The value is the sum of the following:

- 0  No attribute mode selected
- 1  Invisible
- 2  Constant
- 4  Verify
- 8  Preset
- 16 Lock position in block
- 32 Multiple lines

---

**The Key Principles in Module 13**

1. An attribute is a tag or label that is attached to a block and contains data assigned by the user. The data contained in an attribute can be anything from numbers, prices, colors, etc.
2. Setting the ATTDISP command to ON will display all attributes in the drawing.
3. Attributes can edited with the ATTEDIT, EATTEDIT and in the Properties window.
4. When a block that has attributes assigned to it is exploded, it will convert the attribute values back to tags.
Lab Exercise 13-1

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<th>Template</th>
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<tbody>
<tr>
<td>AutoCAD 2D Advanced Lab 13-1.dwg</td>
<td>2D Advanced Layout English.dwt</td>
</tr>
</tbody>
</table>

**Step 1**  Start a new drawing using the template shown above.

**Step 2**  Enter the UNITS command. In the Drawing Units dialogue box set the Insertion Units to Inches. Insert the block Floor Plan 2 at the insert point 0,0.

**Step 3**  Zoom the drawing to its extents.

**Step 4**  Explode the block and your drawing should appear as shown in the figure. (Figure Step 4)
Step 5  Using the ATTDEF command, insert the attributes tags shown below, include an appropriate prompt. Set the attributes to invisible. Make a block for each one. (Figure Step 5)

Step 6  Figure Step 6 shows the attribute values that you must assign when you insert them in Step 7. (Figure Step 6)
Step 7  On layer Furniture, insert the blocks into the floor plan as shown in the figure. The attribute values for each block are shown in Figure Step 6. (Figure Step 7)

Figure Step 7

Step 8  Using the appropriate command, display all the assigned attribute values and check that they are correct. After you check them and edit them, if you find errors, disable the display of the attributes.

Step 9  Save and close the drawing.
Learning Outcomes
When you have completed this module, you will be able to:

1. Create customized toolbars that include flyouts using predefined commands and macros.

Customizing Toolbars
Toolbars can easily be created, customized, and saved using predefined commands and macros using the Customize User Interface. See Figure 18-1.

![Figure 18-1](image1.png)

**Figure 18-1**
Toolbar Menu

Toolbars with Flyouts
Custom toolbars can be created with a flyout(s). See Figure 18-2.

![Figure 18-2](image2.png)

**Figure 18-2**
Toolbar Menu With Flyout
Creating and Customizing Toolbars

Step 1  Start a new drawing using the template 2D Advanced Layout English.dwt.

Step 2  Check the current profile and if required, set it to AutoCAD 2D Advanced.

Step 3  Set 2D Workalong as the current workspace. (Figure Step 3)

Step 4  Pull down the workspaces list and click Customize. (Figure Step 4)

Step 5  In the Customizations in All Files area, expand ACAD and select Toolbar to highlight it. While it is selected, right click it. In the Right-click menu, select New Toolbar. (Figure Step 5)
**Step 6** Enter the name **Workalong** for the name of the new toolbar. (Figure Step 6)

**Step 7** Set the **Command List** to **All Commands Only**. Scroll down and select the **Arc** command. While holding down the left mouse button, drag the **Arc** command into the **Workalong** toolbar. The **Arc** command should now appear under the **Workalong** toolbar. (Figure Step 7A and 7B)

**Author’s Comments:** To speed up finding the ARC command in the list, click inside the command area and then type the first two letters, **AR**. The list will jump to that position. This will work for any command in the list.
**Step 8**  Do the same thing with the Circle and the Line commands.  (Figure Step 8)

**Step 9**  Set the Command List to File and scroll down to the Close command.  (Figure Step 9)

**Step 10**  From the File command list, add the Close, New, and Open commands to the Workalong toolbar as you did in Step 7.  (Figure Step 10)
**Step 11** Set the Command List to All Command and Controls, and add Layer Control to the Workalong toolbar. (Figure Step 11)

**Step 12** Select and right click the Workalong toolbar. In the Right-click menu, click Insert Separator twice to add two separators. (Figure Step 12A and 12B)
Step 13 Drag the separators and the command names to change their locations as shown in the figure. (Figure Step 13)

Author’s Comments: The position of all items in a toolbar can be change by dragging them.

Step 14 Remove the Close command by using the Right-click menu. The completed Workalong toolbar should match the figure. (Figure Step 14A and 14B)
Step 15 Using what you learned in Module 17, check to ensure that the Workalong toolbar has been automatically added to the 2D Workalong workspace. (Figure Step 15)
Step 16  Click OK to close the Customize User Interface dialogue box. Test the Workalong toolbar. (Figure Step 16)

![Figure Step 16]

Step 17  Open the Customize User Interface dialogue box. Expand the toolbars and select the Workalong toolbar. In the Properties area, click the small More icon in Aliases line. (Figure Step 17)

![Figure Step 17]
**Step 18**  In the Aliases dialogue box, change the alias TOOLBAR1 to WORKALONG. (Figure Step 18A, 18B, and 18C)

**Author’s Comments:** The alias TOOLBAR_1 may have a different name on your computer.

**Step 19**  Click **OK** to close the CUI dialogue box.

**Step 20**  Close the drawing without saving it.

---

When you create new toolbars, ensure that you rename the alias that is automatically assigned by the CUI. This will avoid a lot of confusion in future menu customization.
**Creating Flyout Toolbars**

**Step 1** Start a new drawing using the template 2D Advanced Layout English.dwt.

**Step 2** Check the current profile and if required, set it to AutoCAD 2D Advanced.

**Step 3** Set the current workspace to 2D Workalong. (Figure Step 3)

**Step 4** Open the Customize User Interface dialogue box. Using what you learned in the first workalong, add a toolbar Workalong-Modify and change its aliases to WORKALONG-MODIFY. (Figure Step 4)
**Step 5** Add the commands and separators as shown in the figure. (Figure Step 5)

![Figure Step 5](image1.png)

**Step 6** Select and right click the Workalong-Modify toolbar that you just created. In the Right-click menu, click **Copy**. (Figure Step 6)

![Figure Step 6](image2.png)
Step 7  Select and right click the Workalong toolbar. In the Right-click menu, click Paste. (Figure Step 7)

Step 8  The Workalong-Modify toolbar should now appear as a submenu in the Workalong toolbar as well as being a toolbar itself. (Figure Step 8)
Step 9  Close the CUI dialogue box.

Step 10  Test the toolbars, including the flyout. (Figure Step 10A and 10B)

![Figure Step 10A](image1)

![Figure Step 10B](image2)

Step 11  Close the drawing without saving it.

The Key Principles in Module 18

1  When you create a new toolbar, ensure that you rename the alias that was automatically assigned by the CUI.
Lab Exercise 18-1  Time Allowed: 40 Min.

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<tr>
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<tr>
<td>N/A</td>
<td>2D Advanced Layout English.dwt</td>
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</table>

**Step 1**  Start a new drawing and ensure that the current profile is set to AutoCAD 2D Advanced.

**Step 2**  Set the current workspace to 2D Advanced

**Step 3**  Using the figures, create the custom toolbars 2D Advanced and 2D Advanced-File. Make the 2D Advanced-File to be a flyout on the left side of the 2D Advanced toolbar. (Figure Step 3A, 3B, 3C, and 3D)

**Step 4**  Change the aliases to 2DADVANCED and 2DADVANCED-FILE.

---

**Figure Step 3A**

**Figure Step 3B**

**Figure Step 3C**
Figure Step 3D