AUTODESK. UNIVERSITY

CS322897

Smarter AutoCAD drawings: Using attributes to automate text data

Presenter: Volker Cocco - Autodesk, Inc.

Learning Objectives

Learn how to create an attribute definition

Learn how to modify and update attributes

Learn how to add document and field information to attribute definitions

Learn how to extract attribute data to an AutoCAD table or external file

Class Description:

Add intelligence to your drawings with attribute data. This session will show you the tools and techniques used to work effectively with block attributes. Learn how to define attributes using document properties and fields, redefine existing attribute data, and then take your documentation to the next level by extracting the attribute data to an external file or a table in the drawing.

About the Speaker

Volker Cocco has been working with AutoCAD software since 1991 (that's R10 in CAD speak) and is currently employed at Autodesk, Inc., as a product support specialist and Knowledge Domain Expert. Volker has had extensive experience troubleshooting and supporting Autodesk products and in addition to having a background in CAD drafting and management, previous working experience includes tenures with various Autodesk Resellers.

Volker has instructed basic to advanced AutoCAD technical classes, including sessions at AUGI CAD Camp and Autodesk University.

volker.cocco@autodesk.com

About Attributes

An AutoCAD drawing is a database of information. Much of that information is graphical, geometry which has been placed in the drawing. This includes, but is not limited to linework, text, hatching and blocks. This geometry gives a great visual of what the design work is conveying. One can create a more intelligent drawing by attaching non-graphical information to the drawing database. The easiest way to do this is by using attributes.

Attributes give greater flexibility in tracking data which is a priority in many disciplines. Attributes are text and numeric data attached to blocks. For example, one may need to include model numbers, location data, cost and quantity for project data. Attributes are also commonly used in the development and update of an organizations title block. Using a form-based dialog with information such as Revision Dates, Project Name, 'Drawn By' and Sheet Number, among other values, can be easily added to their respective fields in the title block.

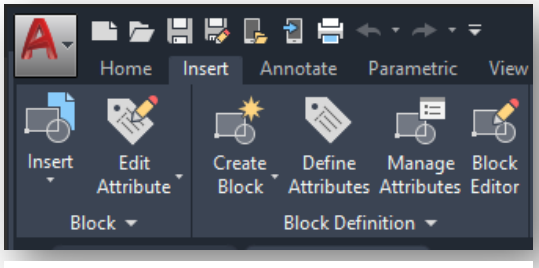
Attribute data can also be easily extracted to an external file such as an Excel spreadsheet or placed as a table within the drawing. This makes it easy to gather information for a Bill of Material or Parts List.

Another benefit of Attribute data is consistency in how information is added or displayed in the drawing file, a great way to enforce company standards. For example, one user in the organization may place text in a drawing using one style of text with a text height of .1, another user may enter the same information using a different style of text with a text height of .125, and this of course is very inconsistent. Attributes enforce consistency because they have been defined with a specific text style and height.

Think of attributes as "labels" attached to blocks. In fact, the attribute can be the defined block without drawing geometry. It's up to the designer of the block as to what information is displayed in that label when the block is inserted in the drawing. When a block attribute is inserted in the drawing AutoCAD prompts the user for the values for the attribute.

About Defining Attributes

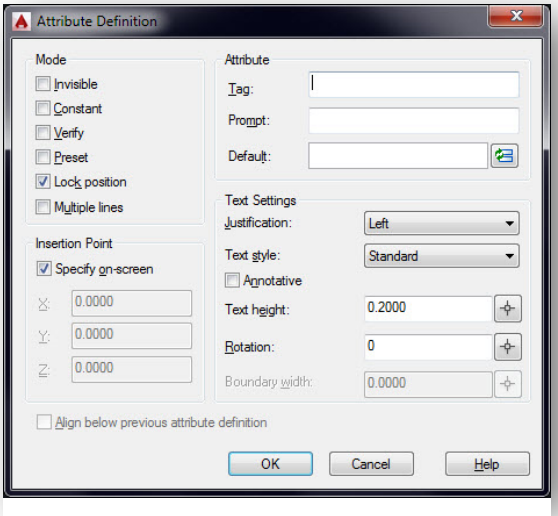
Attributes are defined using the Attribute Definition dialog, **ATTDEF** or **AT** command at the command prompt. One can also find commands to Define, Edit and Manage attributes on the Insert tab of the Ribbon.



Define and Manage Attributes

There are three components to an attribute definition:

- A unique tag that identifies the attribute by name
- A prompt that can be displayed as the block is inserted
- A default value that is used if a variable value is not entered at the prompt



Attribute Definition Dialog

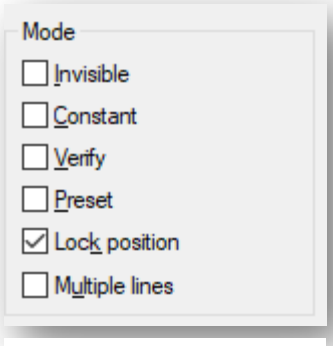
When one defines an attribute one specifies its features, such as an identifier, an initial value, its appearance, its location relative to the associated block, as well as other properties.

The attribute becomes part of a block definition, and when one inserts an attributed block into a drawing, the attributes are also inserted.

An attribute's value can be the same or different for each insertion of the block depending on how the attribute was defined. A block can have multiple attributes.

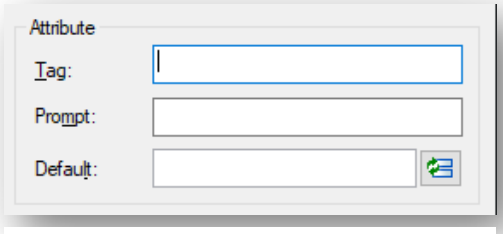
The properties of the attribute definition are set through the following options:

- **Mode -** Sets options for attribute values associated with a block when you insert the block in a drawing. The default values are stored in the AFLAGS system variable. Changing the AFLAGS setting affects the default mode for new attribute definitions and does not affect existing attribute definitions.
    - **Invisible -** Specifies that attribute values are not displayed or printed when you insert the block. The ATTDISP command overrides the Invisible mode.
    - **Constant -** Assigns attributes a fixed value for the attribute when you insert the block. This setting is used for information that never changes.
    - **Verify -** Prompts you to verify that the attribute value is correct when you insert the block.
    - **Preset -** Sets the attribute to its default value without displaying a prompt when you insert the block. The Preset option applies only when prompts for attribute values are set to be displayed at the Command prompt (ATTDIA is set to 0).
    - **Lock Position -** Locks the location of the attribute within the block reference. When unlocked, the attribute can be moved relative to the rest of the block using grip editing, and multiline attributes can be resized.
    - **Multiple Lines -** Specifies that the attribute value can contain multiple lines of text, and lets you specify a boundary width for the attribute.



Attribute Definition: Mode

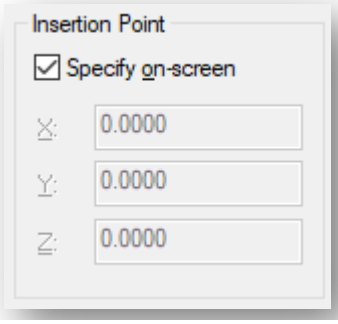
- **Attribute -** Sets attribute data.
    - **Tag -** Specifies the name with which to identify the attribute. Enter the attribute tag using any combination of characters *except* spaces. Lowercase letters are automatically changed to uppercase.



Attribute Definition: Attribute Data

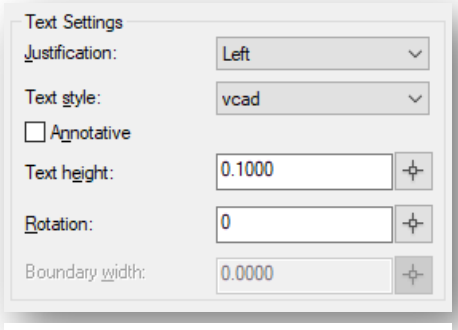
    - **Prompt -** Specifies the prompt that will be displayed when you insert a block containing this attribute definition.
    - If you do not enter a prompt, the attribute tag is used as a prompt. If you select Constant in the Mode area, the Prompt option is not available.
    - **Default -** Specifies the default attribute value.
        - **Insert Field Button -** Displays the Field dialog box, in which you can insert a field as all or part of the value for an attribute.
        - **Multiline Editor Button -** When Multiple Line mode is selected, displays an in-place text editor with a text formatting toolbar and ruler. The ATTIPE system variable controls whether the Text Formatting toolbar displayed is the abbreviated version or the full version.

- **Insertion Point -** Specifies the location for the attribute. Enter coordinate values or select Specify On-screen and use your pointing device to specify the location of the attribute relative to other objects.
    - **Specify On-Screen -** Displays a Start Point prompt when the dialog box closes. Use the pointing device to specify the location of the attribute relative to other objects.
        - **X -** Specifies the *X* coordinate of the attribute insertion point.
        - **Y -** Specifies the *Y* coordinate of the attribute insertion point.
        - **Z -** Specifies the *Z* coordinate of the attribute insertion point.



Attribute Definition: Insertion Point

- **Text Settings -** Sets the justification, style, height, and rotation of the attribute text.
    - **Justification -** Specifies the justification of the attribute text.
    - **Text Style -** Specifies a predefined text style for the attribute text. Currently loaded text styles are displayed.
    - **Annotative -** Specifies that the attribute is annotative. If the block is annotative, the attribute will match the orientation of the block.
    - **Text Height -** Specifies the height of the attribute text. Enter a value or choose Height to specify a height with your pointing device. The height is measured from the origin to the location you specify.

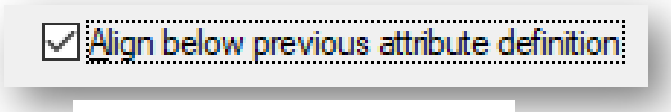


Attribute Definition: Text Settings

- If you select a text style that has fixed height—any value other than 0.0—or if you select Align in the Justification list, the Height option is not available.
- **Rotation -** Specifies the rotation angle of the attribute text. Enter a value or choose Rotation to specify a rotation angle with your pointing device. The rotation angle is measured from the origin to the location you specify. If you select Align or Fit in the Justification list, the Rotation option is not available.
- **Boundary Width -** Specifies the maximum length of the lines of text in a multiple-line attribute before wrapping to the next line. A value of 0.000 means that there is no restriction on the length of a line of text.

  NOTE: The Boundary Width option is not available for single-line attributes.

- **Align Below Previous Attribute Definition -** Places the attribute tag directly below the previously defined attribute. If you have not previously created an attribute definition, this option is not available.



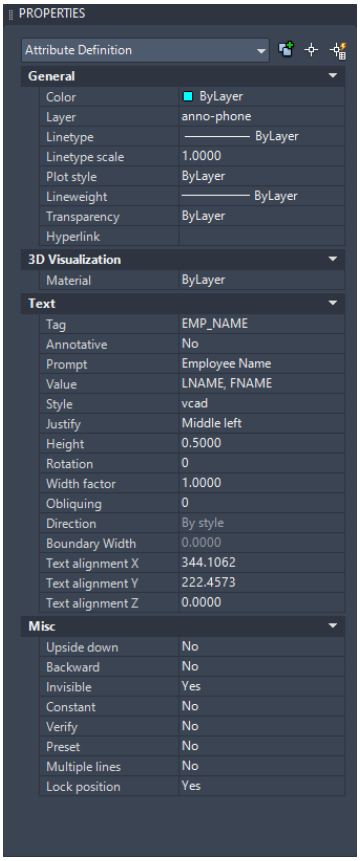
Attribute Definition: Align below previous attribute definition

After the attribute has been defined, one may find it necessary to change some of the properties. This can easily be done prior to defining the block. Select the attribute and modify it using the Properties Manager (CTRL+1). One can also double-click the attribute which will invoke the Edit Attribute Definition dialog where one can make the appropriate changes.

If changes are required after the block has been defined one can easily make the changes using the Block Editor or one of several attribute editing tools discussed later.

After one has defined the desired attributes, use the BLOCK command to select the block geometry and the attributes which will be associated with that block. Then proceed to define the block as one normally would.

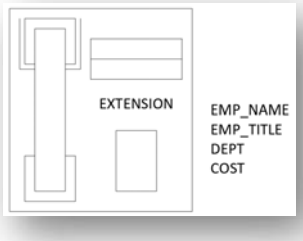
When selecting the geometry to create the block, select the non-attribute geometry for the block, then select the attributes in the order in which one would want them to display. If one randomly places a selection window around multiple attributes to select them, they will appear in a random order. This can be corrected using the Block Attribute Manager (**BATTMAN**) command or the **BATTORDER** command; however, **BATTORDER** is only available within the block editor.



Properties Palette

Exercise: The Desk Phone - Defining the Attribute

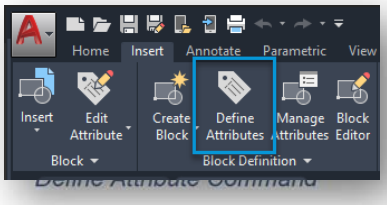
In the following tutorial five attribute definitions with various modes are added to linework depicting a desk phone. Once completed, the linework and attribute definitions will be converted as a block definition.



Phone block with attributes

To execute the command to define the attributes type **ATTDEF** at the Command prompt or from the Ribbon → Insert tab → Block Definition panel, select *Define Attributes*.

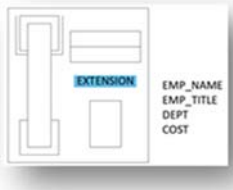
For simplicity, the first option to type the command **ATTDEF** will be used to describe the steps.



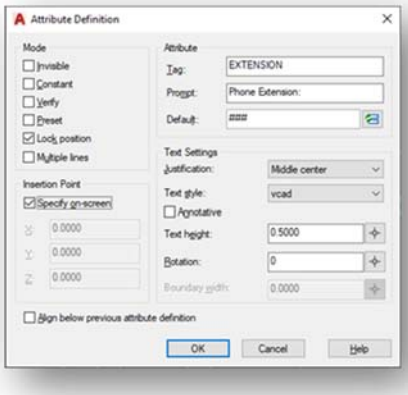
Define Attribute Command

1. Open the drawing “AU 2019 Attributes”
2. Set the view “Phone” current
3. Type **VIEW** at the Command prompt
4. Select “Model Views -> Phone”
5. Select “Set Current”
6. Select “Apply” and select “OK
7. Set the layer “anno-phone” current
8. Type **ATTDEF** to display the Attribute Definition dialog

Use the Phone Extension data table shown below to populate the attribute definition dialog as shown.
Click Ok and place the attribute definition as shown in the desk phone image on the right.



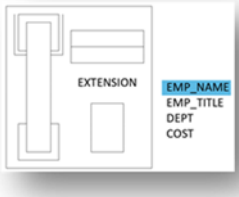
Attribute Tag:	EXTENSION
Attribute Prompt:	Phone Extension:
Attribute Default”	###
Text Justification:	Middle Center
Text Style:	vcad
Text Height:	0.5
Text Rotation:	0
Attribute Mode:	Lock Position
Insertion Point:	Specify on-screen



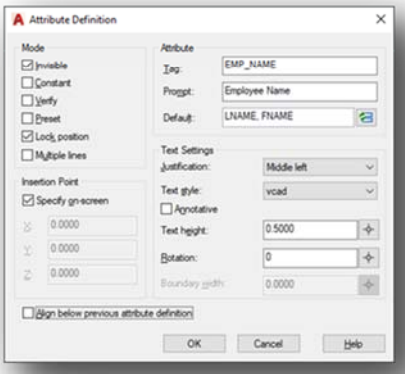
9. Press ENTER or the Space bar to repeat the command (or type ATTDEF)

Use the previous instructions to add the second attribute.

Note the Mode property and Text Justification change. Place the attribute definition to the right of the phone as shown.



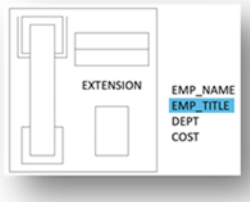
Attribute Tag:	EMP_NAME
Attribute Prompt:	Employee Name:
Attribute Default”	LNAME, FNAME
Text Justification:	Middle Left
Text Style:	vcad
Text Height:	0.5
Text Rotation:	0
Attribute Mode:	Invisible Lock Position
Insertion Point:	Specify on-screen



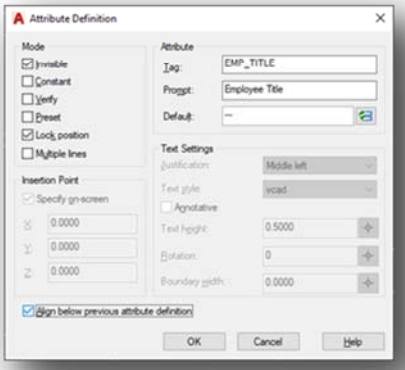
10. Press ENTER or the Space bar to repeat the command (or type ATTDEF)

For the third attribute definition instead of specifying the insertion point, use the option to “Align below the previous attribute definition”. The previous text settings will also be used.

Click OK to automatically place the attribute as shown.

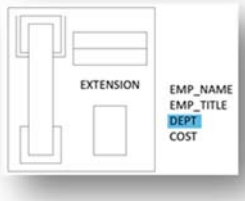


Attribute Tag:	EMP_TITLE
Attribute Prompt:	Employee Title:
Attribute Default”	--
Text Justification:	Middle Left
Text Style:	vcad
Text Height:	0.5
Text Rotation:	0
Attribute Mode:	Invisible Lock Position
Insertion Point:	Align below previous attribute definition

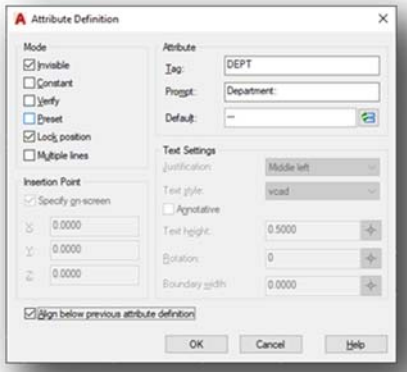


11. Press ENTER or the Space bar to repeat the command (or type ATTDEF)

Continue using the previous instructions to place the fourth attribute definition.



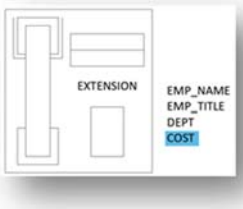
Attribute Tag:	DEPT
Attribute Prompt:	Department:
Attribute Default”	--
Text Justification:	Middle Left
Text Style:	vcad
Text Height:	0.5
Text Rotation:	0
Attribute Mode:	Invisible Lock Position
Insertion Point:	Align below previous attribute definition



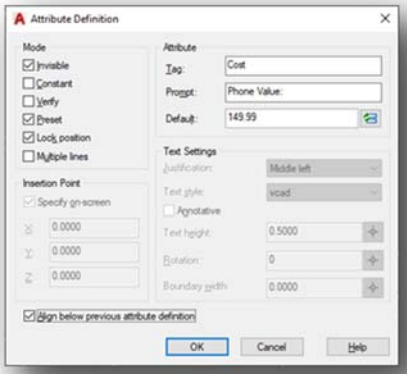
12. Press ENTER or the Space bar to repeat the command (or type ATTDEF)

Use the previous instructions for the fifth attribute definition.

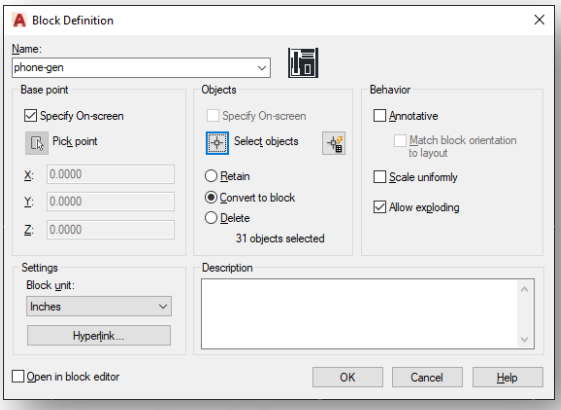
Note the addition to the Mode property.



Attribute Tag:	Cost
Attribute Prompt:	Phone Value:
Attribute Default”	149.95
Text Justification:	Middle Left
Text Style:	vcad
Text Height:	0.5
Text Rotation:	0
Attribute Mode:	Invisible Preset Lock Position
Insertion Point:	Align below previous attribute definition



13. Once the attributes have been defined, use the BLOCK command to define a block as one normally would. Be sure to select the linework first and then the attributes in the order that the prompts should appear.
14. Block Name: Phone-Gen
15. Specify the MID point top of phone
16. Delete objects after creating the block
17. Save the drawing



Block Definition Settings

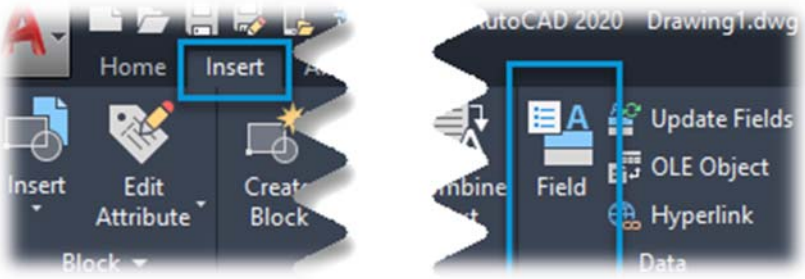
Defining an Attribute with Fields

About Fields

Until the release of AutoCAD 2005 which introduced fields, attribute data consisted of static text, either a default value or a value which the user was prompted to enter. Field functionality allows one to augment attribute data with special text fields which update dynamically to reflect the value of the property to which they were assigned. For example, one can easily create an

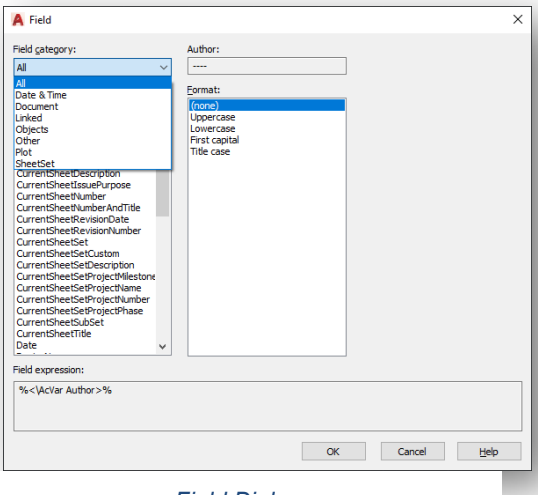
attribute field which would pull information from the drawing properties to populate a title block with the current date, the drawing name, and the current user's login name.

The **FIELD** command can be typed at the Command prompt or selected from the Ribbon → Insert tab → Data panel. In the Attribute Definition dialog select the button next to the value field or Right-Mouse click within that field and select *Insert Field*….



Field Command

The Field dialog lists fields available for use within an attribute or as standalone fields. By default, all fields are displayed. Use the Field Category list filter display fields by category. For example, for fields related to the document, choose the Document Category.



Field Dialog

Drawing Properties

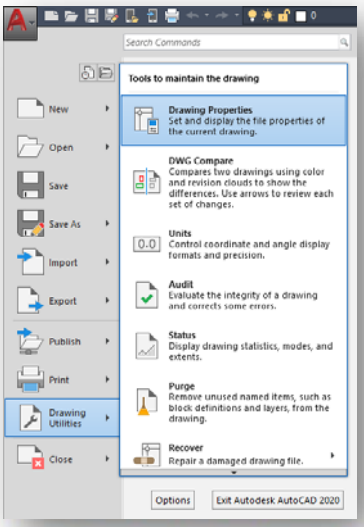
About Drawing Properties

Drawing properties can help you identify a drawing. Some drawing properties are stored by the operating system; for example, drawing type, location, and size. These values are read-only in the drawing file and can only be changed through Windows Explorer or File Explorer.

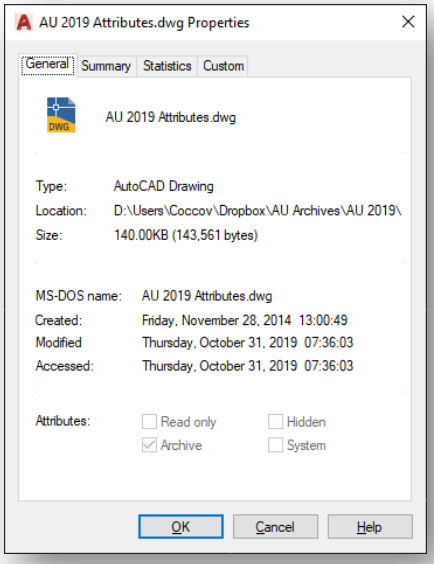
You can create additional properties in drawing files. You can store author, title, subject, and custom properties to your drawings.

Drawing Properties can be accessed from the Application Browser menu → Drawing Utilities → Drawing Properties or by typing **DWGPROPS** at the command prompt, which will display the Drawing Properties dialog.

The Drawing Properties dialog allows one to add additional information to the drawing's properties. Custom fields can also be defined. This dialog is the same dialog one sees when Right-Mouse clicking over any file in Windows Explorer and selecting Properties. The information from this dialog can be inserted into an AutoCAD drawing using a Document category field.



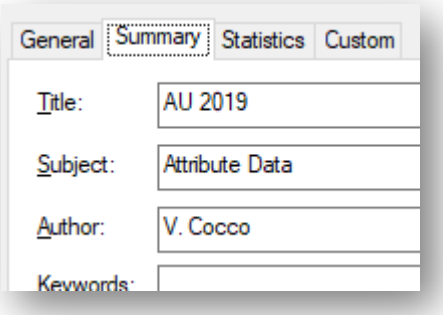
Application Browser Menu: Drawing Properties



Drawing Properties Dialog

Exercise: Working with Fields

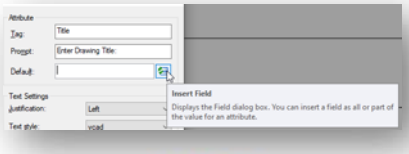
1. Open or continue working in the “AU 2019 Attributes.dwg”
2. Set the layout tab “D Size” current
3. Select the title block
4. Right-Mouse click and select “Block Editor” from the context menu
5. In the Block Editor set the layer “Anno-Tblock” current
6. Type **DSETTINGS** at the Command prompt to open the Drafting Settings dialog
7. Select the NODE Osnap (verify OSNAPs are enabled)
8. Close the Drafting Settings dialog
9. Zoom into the area of the title block with the labels Title, Subject, Drafter
10. Type **DWGPROPS** at the Command prompt
11. In the Summary tab of the Drawing Properties dialog enter the following
12. Title: *AU 2019*
13. Subject: Attribute Data
14. Author: (Your first initial and last name)
15. Select OK to close the Drawing Properties dialog
16. Type **ATTDEF** at the command line to open the Attribute Definition dialog.



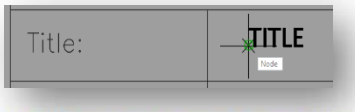
Drawing Properties dialog

Use the below data to create three attribute definitions for Title, Subject, and Author.

- To insert the Field in the value field, select the Field icon to the right of the Value input field.
- In the field next to the label is a point object which you can reference for an insertion point of the attribute using the NODE Osnap. If you cannot see the point object, then type PTYPE at the Command prompt and choose a desired point style. Note that these points are on a non-plottable layer and will not appear in the plot output, or if preferred the point style can be set to show no point.



Insert Field



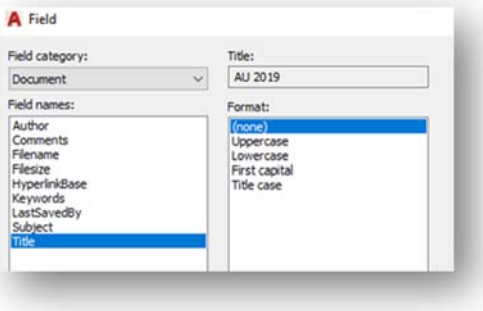
Use the Node Osnap to insert the attributes

17. Add the “Title” attribute definition

Use the “Title” data table shown below to populate the attribute definition dialog. In the Field dialog:

- Select the Document Category
- Select the Field name: Title
- Click OK

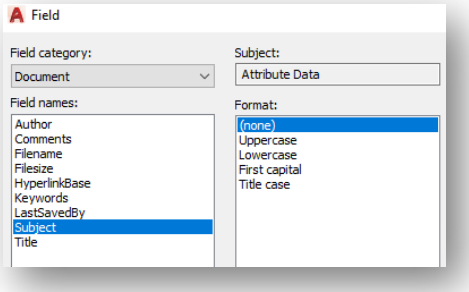
Once all the settings are in place, Click Ok and place the attribute definition using the Node Osnap as shown in the lower right image.



Attribute Tag:	Title
Attribute Prompt:	Enter Drawing Title:
Attribute Default”	*Insert Field*
Text Justification:	Middle Left
Text Style:	vcad
Text Height:	0.1
Text Rotation:	0
Attribute Mode:	Lock Position
Insertion Point:	Specify on-screen



18. Press Enter to repeat the ATTDEF command
19. Add the “Subject” attribute definition

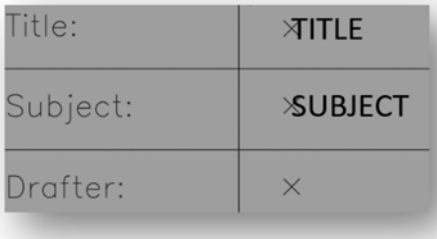


Use the “Subject” data table shown below to populate the attribute definition dialog. In the Field dialog:

- Select the Document Category
- Select the Field name: Subject
- Click OK

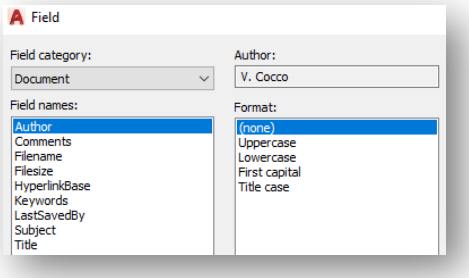
Once all the settings are in place, Click Ok and place the attribute definition using the Node Osnap as shown in the lower right image.

Attribute Tag:	Subject
Attribute Prompt:	Enter Subject:
Attribute Default”	*Insert Field*
Text Justification:	Middle Left
Text Style:	vcad
Text Height:	0.1
Text Rotation:	0
Attribute Mode:	Lock Position
Insertion Point:	Specify on-screen



20. Press Enter to repeat the **ATTDEF** command

21. Add the “Drafter” attribute definition

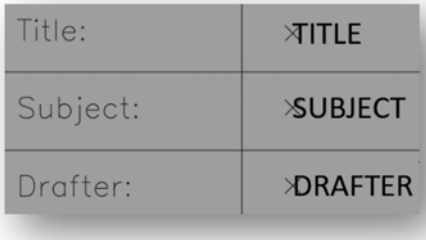


Use the “Subject” data table shown below to populate the attribute definition dialog. In the Field dialog:

- Select the Document Category
- Select the Field name: Author
- Click OK

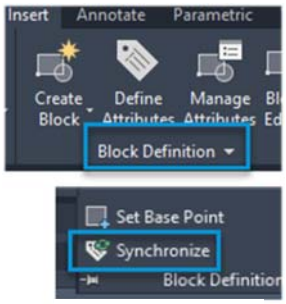
Once all the settings are in place, Click Ok and place the attribute definition using the Node Osnap as shown in the lower right image.

Attribute Tag:	Drafter
Attribute Prompt:	Enter Drafter Name:
Attribute Default”	*Insert Field*
Text Justification:	Middle Left
Text Style:	vcad
Text Height:	0.1
Text Rotation:	0
Attribute Mode:	Lock Position
Insertion Point:	Specify on-screen



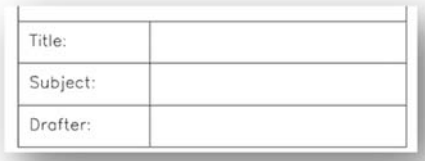
22. Close the Block Editor (saving changes)

Notice that the title block does not show the added attributes. To display the attributes the block attribute definitions will need to be synchronized (Updated). This can be done using the ATTSYNC command which can be found on the *Ribbon → Insert Tab → Block Definition → Synchronize*.

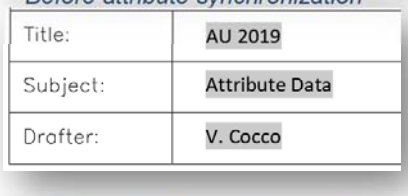


Attsync Command

23. Type ATTSYNC at the command prompt
24. Enter to accept the <Select> option
25. Select the title block
26. The document properties now appear.



Before attribute synchronization

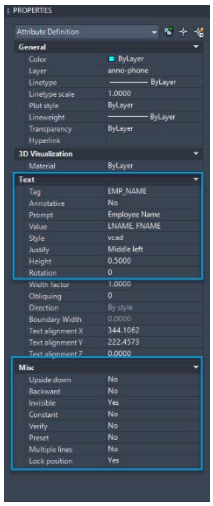


After attribute synchronization

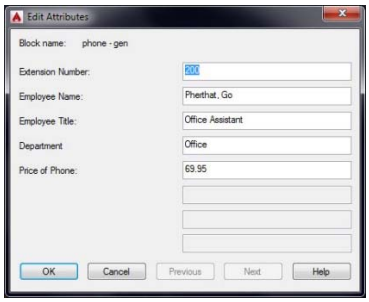
Modifying Attributes

AutoCAD has several commands available for modifying attributes. In addition to typing the command for these tools, or accessing them from the Ribbon, one can Right-Mouse click over a selected attributed block and select these options from the context menu.

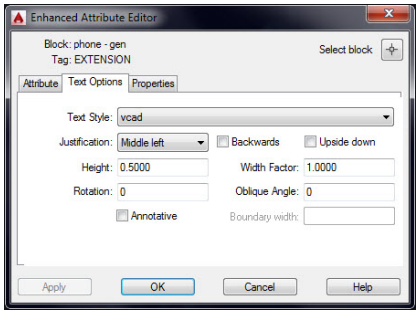
Properties Palette – In addition to modifying properties of the attributed block, the Properties palette allows one to modify the values of the attribute data. Modifying these values affects only the selected block.



ATTEDIT – The Edit Attributes dialog is the same dialog one sees when initially inserting an attributed block. One can change the value of the attribute fields. Modifying these values affects only the selected block.

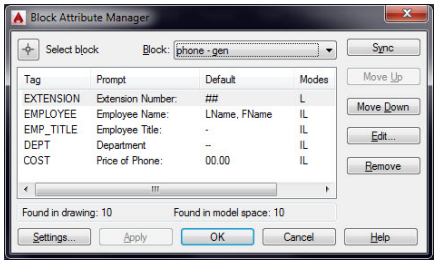


EATTEDIT – In addition to modifying the values of the selected attributed block, one can also modify additional items such as text options, i.e., style, height, rotation, etc. The Properties tab allows the user to modify object properties such Layer, Color, Plot Style and more. This dialog appears as a default when double-clicking an attributed block.



BATTMAN – this command edits attributes and properties in the block, like the **EATTEDIT** command, but in all block definitions. In other words, it makes global changes to all insertions of a single block. Additionally, it allows one to add or remove attributes, as well as reorder them.

Note that after modifying a block one needs to use the "Sync" option to update all block references. The "Sync" option is also a standalone command as previously mentioned, called **ATTSYNC**.



Another option for modifying attributed blocks is to use the Block Editor. Just as the objects which make up a block are shown as individual linework when modifying a block with **BEDIT** attribute data appears as it would prior to defining the block; therefore, all properties of the attribute can be modified. Once a block with attributes has been modified in the Block Editor, the **ATTSYNC** command should be used to update the existing blocks in the drawing.

Modify Attributes Summary

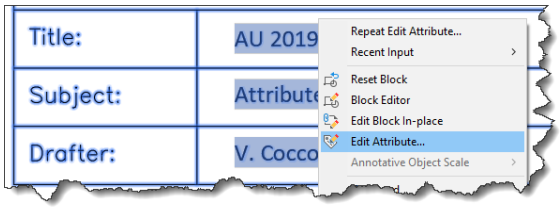
The Properties palette, **ATTEDIT**, and **EATTEDIT** commands all modify a single instance of a block, while **BATTMAN** affects all blocks of the same name. **ATTSYNC** was used to update the attribute definitions in the title block in the previous exercise. To summarize, **ATTSYNC** will update the attributes within the block definition after using **BATTMAN** as well as when attributes have been modified using the Block Editor.

Exercise: Modifying Attributes Using **EATTEDIT** (Enhanced Attribute Editor)

Attributes have been added to the title block; however, in this case the color of the text needs to be modified to CYAN in order to apply a different lineweight. This modification can be done using the Block Editor, The Properties palette, **BATTMAN** or the **EATTEDIT** command.

For this example, the **EATTEDIT** command is used to demonstrate changing the color properties of the attributes.

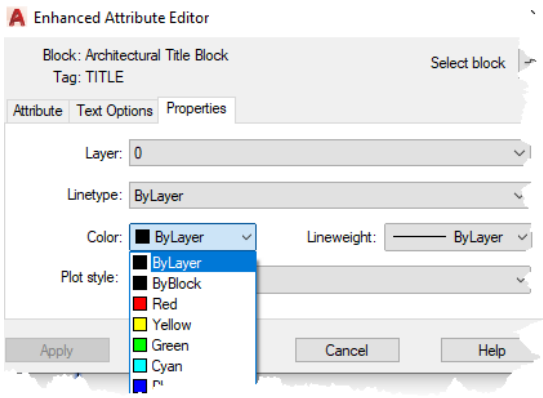
1. Open or continue working in the “AU 2019 Attributes.dwg”
2. Select the title block and Right-Mouse Click
3. From the context menu select “Edit attribute…”



option for EATTEDIT command

All attributes for the title block will be listed under the Attribute tab

4. Select one of the attributes listed in the Attribute tab of the list
5. Switch to the Properties tab
6. Select the color drop down control and select the color CYAN
7. Repeat for remaining attributes
8. Select OK to close the Enhanced Attribute Editor
9. Save the drawing



The attributes will update automatically since the Enhanced Attribute Editor only updates one instance of a block. Had there been numerous types of the same block, **BATTMAN**, followed by the **ATTSYNC** command would have been a better choice as that will update all instances of the block.

Inserting Attributed Blocks

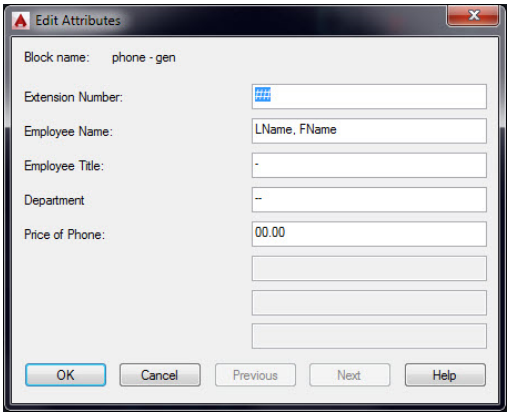
System Variables and Commands

When one inserts an attributed block, in addition to providing an insertion point, scale factors, and rotation angle, one is also prompted to supply values for all the block's attributes unless they have a mode of constant or preset.

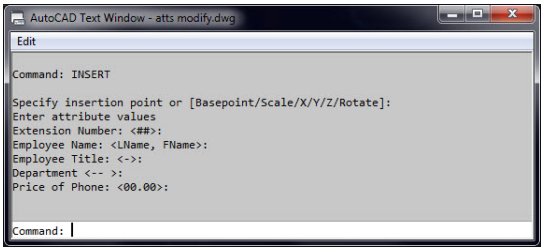
As with most commands in AutoCAD system variables* and command settings will affect the prompting as well as the visibility of attribute values.

ATTDIA (System Variable) - Controls whether the INSERT command uses a dialog box for attribute value entry or whether one is prompted for the values at the Command prompt. This variable is saved in the Windows Registry and once set remains that way for all drawings until changed.

Default value = 1 (uses a dialog), setting this value to 0 (zero) issues a Command prompt.



ATTDIA = 1: The user is prompted to enter values after the block has been inserted



ATTDIA = 0: The user is prompted to enter values during the block insertion process

ATTREQ (System Variable) – controls whether the user is prompted for attribute values while inserting the block. Its values are **0** (zero) and **1** (default).

- **0**: The user is not prompted for attribute values, instead the initial value defined in the attribute is used
- **1**: The user is prompted for attribute values, either via the dialog or the Command prompt as dictated by the **ATTDIA** system variable.

This variable is useful if one needs to insert multiple blocks repetitively or if one does not have the information available at the time of insertion. One can insert the blocks as needed without being prompted and then supply the values later.

ATTDISP (Command) – controls the visibility display of attributes in the drawing and on a plot output. There are three options:

- **Normal (default):** Turns off attributes defined with the invisible mode and leaves all other on
- **Off:** Turns off the display of all attributes regardless of how they were defined
- **On:** Turns on the display of all attributes regardless of how they were defined

This command is useful if you have sensitive information defined within the attribute value such as cost or other proprietary information. It should be noted that when sending the file to someone else they can easily toggle this command.

Exercise: Inserting the Phone block

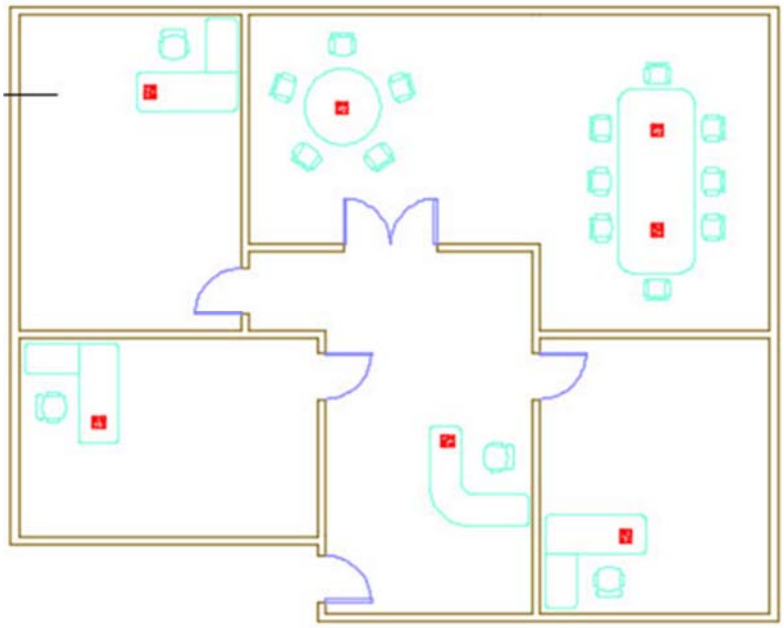
For this exercise use the information in the following table to populate the attribute data when inserting a phone block. Note that step six will have you insert the block without being prompted and you will need to modify the values after the block insert.

Phone Index					
Name	Cost	Department	Employee Title	Employee	Extension
phone - gen	149.95	Conference Room	Conference Room	Conference Phone 2	CNF02
phone - gen	149.95	Conference Room	Conference Room	Conference Phone 1	CNF01
phone - gen	149.95	Conference Room	Conference Room	Conference Phone 3	CNF03
phone - gen	69.95	Office	Office Assistant	Pherthat, Go	200
phone - gen	49.95	Widget Design	Pencil Pusher	Newguy, Bob	203
phone - gen	49.95	Accounting	Senior Bean Counter	Kidney, Red	202
phone - gen	49.95	Research & Development	Senior Designer	DooHickey, John	201

1. Open or continue working in the “AU 2019 Attributes.dwg”
2. Set the “Model” tab current
3. Set the layer “A-Phone” current
4. Using the INSERT command, insert one instance of the block “Phone – Gen” where the original linework for the phone drawing was located.

The “Edit Attribute” dialog will appear.

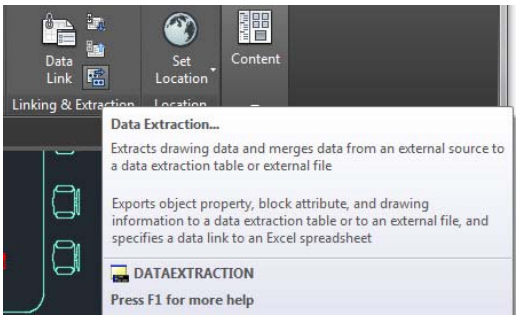
5. Fill in the appropriate values and select OK to close the dialog.
6. Type ATTREQ at the Command prompt
7. Set the value to 0 (zero)
8. Insert the “Phone – Gen” block on another desk/table in the drawing. Note that there is no prompt to enter attribute values.
9. Repeat the insert command and populate the rest of the desks/tables.
10. Type ATTREQ at the Command prompt
11. Set the value back to 1.
12. Type ATTEDIT at the Command prompt
13. Select one of the inserted blocks and fill in the values
14. Repeat for all block instances
15. Save the drawing.



Finished floor plan with Phone block placed

About Extracting Attribute Data

The **EATTEXT** (Command) or Data Extraction Wizard is used to choose the data source (drawings) to extract property data from selected objects. You can output the data to a table or external file.



The Data Extraction Wizard is located on the Ribbon → Insert tab → Linking and Extraction panel.

The EATTEXT (Command) is not available in AutoCAD LT.

The Data Extraction wizard guides you through the process of

- Selecting the data source, which can be a drawing, set of drawings, or folders.
- Filtering objects (non-blocks and blocks) are extracted and selecting properties from which data is extracted.
- Organizing and refining the extracted data.
- Merging information from an Excel spreadsheet with the extracted data.
- Choosing an output format for the data (a table and/or an external file).
- Formatting the extracted data in a table by specifying a table style or selecting an existing pre-formatted table.

The first time you extract data, you are prompted to save the data extraction settings in a data extraction (DXE) file. Later, if you need to edit the data extraction, you select the DXE file, which

contains all the settings (data source, selected objects and their properties, output format and table style) that you used to create the extraction. For example, if you wanted to remove some property data from the extraction, you would select the DXE file that was used to create the extraction and made the desired changes.

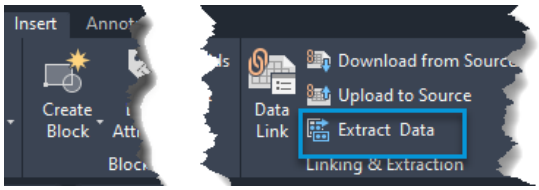
A data extraction file can also be used as a template to perform the same type of extraction in a different drawing. The DXE file stores drawing and folder selections, object and property selections, and formatting choices. If you need to extract the same type of information repeatedly, using a DXE file is time-saving and convenient.

You can also edit a DXE file. You can add or remove drawings, add or remove objects, or select different properties from which to extract data. Tables that reference the same DXE file, even if those tables are in other drawings, display the changes when those tables are updated.

Note: You can use an attribute extraction (BLK) file as a template for extracting data from blocks and attributes. When using a BLK file for extracting data or editing an existing extraction, you are prompted to save the data extraction to a DXE file in order to proceed with the extraction.

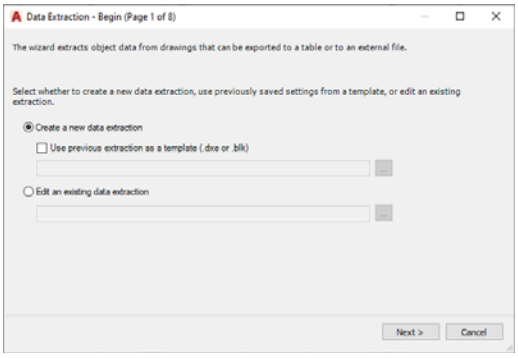
In the following example a data extraction is created for the phone-gen information and then inserted as a table in paper space. Additionally, an Excel spreadsheet is exported to the local drive.

Exercise: Data Extraction



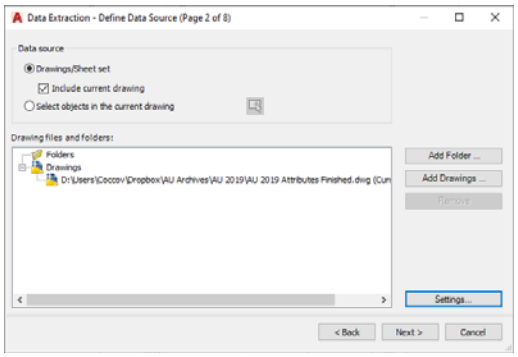
Insert Tab – Data Panel – Extract Data (EATTEXT)

1. Open or continue working in the “AU 2019 Attributes.dwg” “D Size” layout tab
2. Set layer “Anno-Table” Current
3. From the Ribbon → Insert tab → Linking and Extraction panel, select Data Extraction (or type **EATTEXT** at the Command prompt)
4. The Data Extraction dialog appears



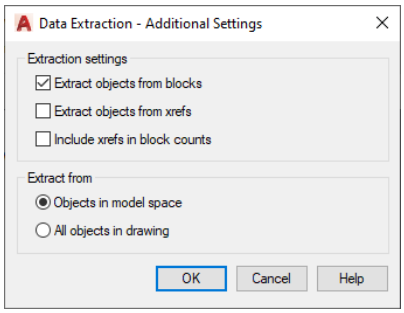
Data Extraction 1 of 8

5. Select “Create a new data extraction” (Default)
6. Name the data extraction template, “AU2019.dxe”
7. Select Next…
8. Select Data Source → Drawing/Sheet Set → Include current drawing

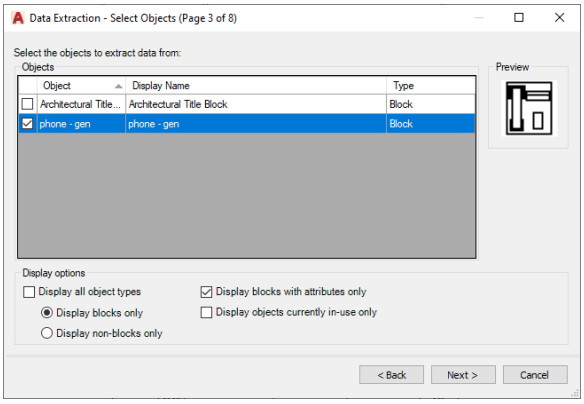


Data Extraction 2 of 8

9. Select Settings…
10. For Additional settings → Extraction settings:
11. Select “Extract objects from blocks”
12. Optional: Select “Extract objects from xrefs”
13. Deselect “Include xrefs in block counts”
14. Select “Extract from → Objects in model space” (only model information is necessary since that is where the phone-gen block has been inserted)
15. Select OK to close the Additional Settings dialog
16. Select Next…
17. In the Select objects dialog, under display options



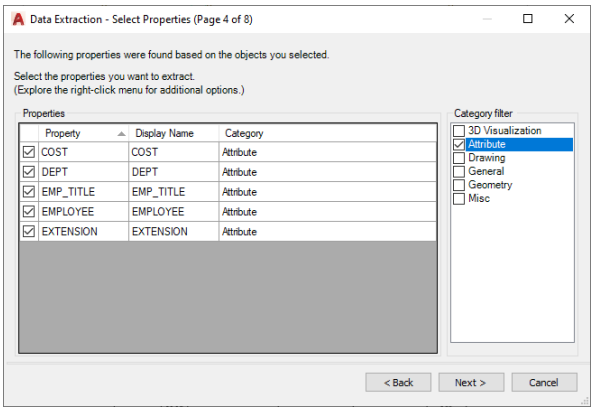
Data Extraction 2 of 8 - Settings



Data Extraction 3 of 8

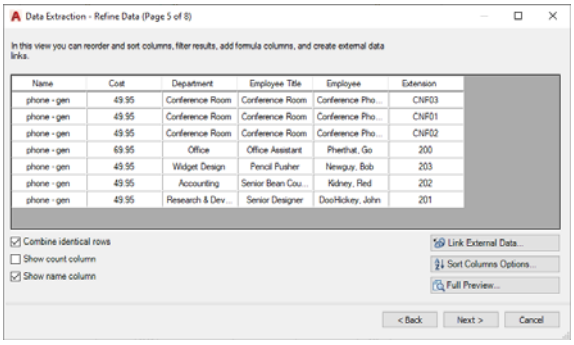
18. Deselect “Display all object types”
19. Select “Display blocks only”
20. Select “Display blocks with attributes only”
21. Select “Display objects currently in-use only”
22. Deselect “Architectural Title Block” (top of dialog)
23. Select Next…

24. In the Select Properties dialog → Category Filter, deselect everything except the “Attribute” category



Data Extraction 4 of 8

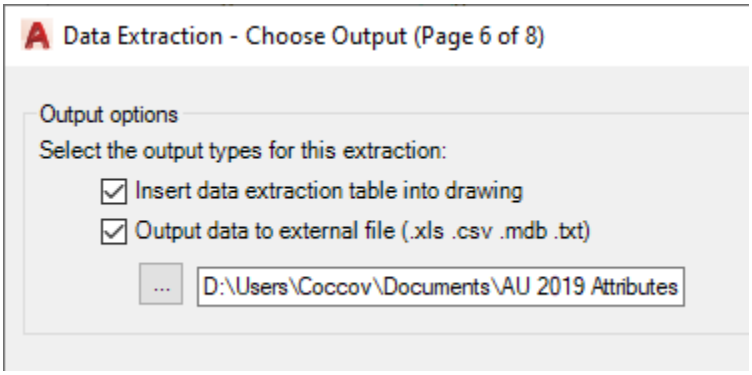
25. Leave all properties selected
26. Select Next…
27. In the Refine Data dialog



Data Extraction 5 of 8 (data may differ)

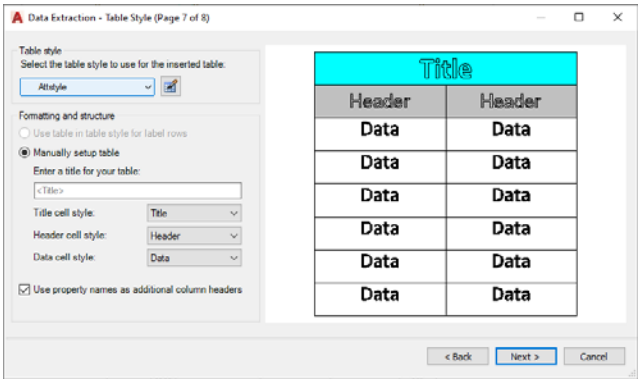
28. Deselect “Show count column”
29. Rename all the columns as follows (This can be done by Right-Mouse clicking over a column and choosing “Rename”):
30. Name
31. Cost

32. Department
33. Employee Title
34. Employee
35. Extension
36. Select Next…
37. In the Choose Output dialog



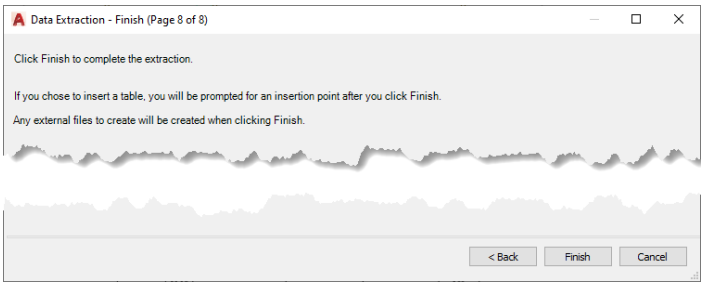
Data Extraction 6 of 8

38. Select “Insert data extraction table into drawing”
39. Select “Output data to external file (.xls, .csv, .mdb, .txt)
40. Browse to your data folder, name the file “AU2019 Atts extract.xls”
41. Select Next…
42. In the Table Style dialog,



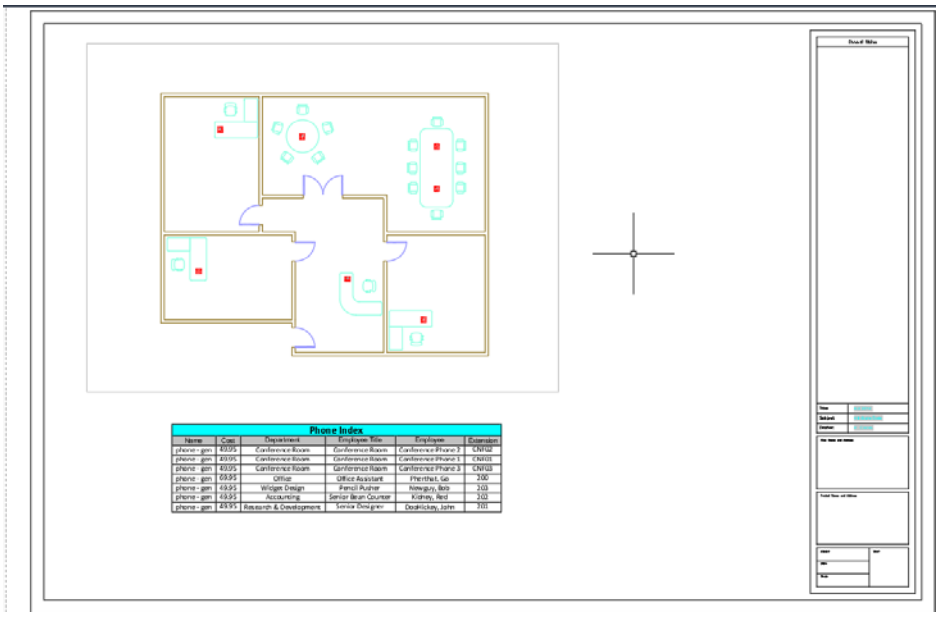
Data Extraction 7 of 8

43. Select “Attstyle” from the Table Style drop down control
44. Enter “Phone Index” for a table title
45. Verify that “Use property names as additional column headers” is selected
46. Select Next…



Data Extraction 8 of 8

47. Select “Finish”
48. At the Command prompt, “Specify Insertion Point”, place the table directly beneath the viewport
49. Zoom in to see the results
50. Save the drawing
51. Navigate to the data folder to view the exported Excel spreadsheet



Finished drawing file with extracted data table

Conclusion

There is much more to working with data extraction, linking data, and tables. This session is about working with attributes and time does not allow for detailed information on these additional topics. I would encourage you to explore these features in another session, a training class or by reviewing the information available in the AutoCAD in-product documentation. Remember, you can easily get to a specific topic by entering a specific command and then pressing the F1 function key.

Resources

- Have You Tried: Attribute Extraction
- ATTEXT (Command) - Attribute Extraction for AutoCAD LT (Also available in AutoCAD)
    - About Setting Up an Attribute Extraction Template File
- Autodesk Knowledge Network – Technical Support, Learning, Downloads & Forums
- AutoCAD Customer Council- Interact with developers, provide feedback on current and future software releases, and beta test the latest software!
- Autodesk University – Archive of Sessions from previous years