

AS197468-L - AutoCAD Customization Boot Camp: Basic (No Experience Required)

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Principal Learning Experience Designer



Where Am I and Who Should Be Here

You are in session:

- AS197468-L - AutoCAD Customization Boot Camp: Basic (No Experience Required)

You should know:

- AutoCAD 2019 (or AutoCAD 2009 and later)

You should want to:

- Learn how to perform basic AutoCAD customization
- Get the AutoCAD program to work for you

Who Am I?

My name is Lee Ambrosius:

- Principal Learning Experience Designer at Autodesk, Inc.
- Over 20+ years of AutoCAD customization and programming experience
- Customization, Developer, and CAD Administration documentation
- Author of the AutoCAD Customization Platform book series published by Wiley & Sons

My job in a nutshell:

- Document the past and present AutoCAD releases for the future

Who Are the Lab Assistants?

Lab assistants:

- Chris Linder
- Scott Wilcox
- Stephen Sluka

Their roles are to:

- Help out when you get stuck
- Ensure no one gets left behind

Session Rules

- Silence your mobile phone, tablet, and any other device
- If you have to leave, please do so quietly
- Hold all questions to the end
- If you get stuck, raise your hand

Enjoy the Journey

The path isn't the same for everyone...
but the goal is often shared by many.

To the left and right of you is someone
with a shared interest, talk and learn from them.



Welcome to Basic Training



Do You Customize AutoCAD Today?

- Define new blocks
- Add layers
- Modify or add annotation styles (text, dimension, ...)
- Create drawing templates
- Change the colors of the user interface
- Create custom ribbon panels or tabs
- Create plot configuration or plot style files

Customization Options Available

Levels of customization expertise:

- Basic
- Intermediate
- Advanced (programming required)

Types of customization:

- Drawing
- Application

Basic Customization

DRAWING

- Layers
- Blocks
- Drawing templates
- Annotation styles (text, dimensions, multileaders, and tables)
- Materials for rendering
- Visual styles

APPLICATION

- Desktop icon
- Command aliases
- Tool palettes
- Workspaces
- User profiles
- Plot styles

Basic Customization

DRAWING

- Layers
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- Materials for rendering
- Visual styles

APPLICATION

- Desktop icon
- Command aliases
- Tool palettes
- Workspaces
- User profiles
- Plot styles

Intermediate Customization

DRAWING

- Dynamic Blocks

APPLICATION

- Action macros
- Scripts
- User interface (CUI Editor)
- DIESEL
- Custom linetypes and hatch patterns
- Custom shapes and text styles

Intermediate Customization

DRAWING

- Dynamic Blocks

APPLICATION

- Action macros
- Scripts
- User interface (CUI Editor)
- DIESEL
- Custom linetypes and hatch patterns
- Custom shapes and text styles

Advanced Customization (Programming)

APPLICATION

- AutoLISP / Visual LISP
- Visual Basic for Applications (VBA)
- ActiveX / COM
(VBScript, VB.NET, C#, C++)
- Managed .NET (VB.NET, C#)
- ObjectARX (C++)
- JavaScript (JS)
- Sheet Set Object (SheetSet command)
- CAD Standards plug-ins
(Standards/CheckStandards commands)
- Transmittal API (eTransmit command)
- Connectivity Automation Object
(dbConnect command)
- Forge APIs

Advanced Customization (Programming)

APPLICATION

- AutoLISP / Visual LISP
- Visual Basic for Applications (VBA)
- ActiveX / COM
(VBScript, VB.NET, C#, C++)
- Managed .NET (VB.NET, C#)
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(Standards/CheckStandards commands)
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(dbConnect command)
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What You Will Learn Today

At the end of this session, you will know how to:

- Create custom desktop icons
- Create and modify command aliases
- Define tools and tool palettes
- Modify the QAT, ribbon, and workspaces

NO prior customization experience is required

Customization **COULD BE** programming, but not Today

What You Need to Get Started

For this session, you will be using:

- AutoCAD 2019
- Customize User Interface (CUI) Editor
- Notepad; part of the Windows operating system

What is Going to be Covered

Handouts for this session are divided into two separate parts/files:

- **Exercises** – What we will be doing during this session
- **Supplemental** – Content for the flight back

Things We Need to Know Before Proceeding



Setting Up for the Lab

For this lab:

- If you see a single icon on your desktop labeled “AU 2018 Vegas – lab02 – desktop click it now”
- Open the handouts now if you don’t have them open already:
C:\DATASETS\AS197468-L AutoCAD Customization Boot Camp_ Basic (No Experience Required)\AS197468-L-Ambrosius-AU2018.pdf
- AutoCAD can be found in the Software folder on the Desktop
- Recommend snapping the handouts and AutoCAD application to opposites sides of the Windows Desktop

Desktop Shortcuts



Desktop Shortcuts

Used to:

- Launch an application
- Open a folder location or website

Command line switches can be used to alter an application during startup

- AutoCAD supports 15+ command line switches

Desktop Shortcuts

Some of the most commonly used command line switches:

Command Line Switch	Description/Example
/t	Specifies the drawing template for the default drawing Example: <i>/t "mytemplate.dwt"</i>
/w	Sets a named workspace current from a loaded CUIx file Example: <i>/w "2D Drafting"</i>
/p	Sets a named user profile current or loads a previously exported user profile (ARG) file Example: <i>/p "<<Unnamed Profile>>"</i>
/nologo	Disables the splash screen at startup Example: <i>/nologo</i>

Standard AutoCAD 2019 Shortcut

"C:\Program Files\Autodesk\AutoCAD 2019\acad.exe" **/product ACAD**
/language "en-US"

- **/product** – Specifies the AutoCAD-based product to launch when multiple products are installed
- **/language** – Specifies the language pack to use when the product is launched

Shortcut w/ Additional Command Switches

"C:\Program Files\Autodesk\AutoCAD 2019\acad.exe" /product ACAD
/language "en-US" /nologo /t "C:\DATASETS\AS197468-L AutoCAD
Customization Boot Camp_ Basic (No Experience Required)\C-size.dwt"
/w "3D Basics"

To Create a Desktop Shortcut

1. Copy the existing AutoCAD 2019 desktop shortcut.
2. Modify the properties of the copied desktop shortcut.
3. Add the command line switches you want to use.

or

1. Create a new shortcut on the Windows Desktop.
2. Specify the location of the AutoCAD executable.
3. Add the command line switches you want to use.

Exercise: E1 - Create a Desktop Shortcut

In this exercise, you will:

- Create a new AutoCAD 2019 shortcut
- Add command line switches to a shortcut

Starts on page 4 of the handouts.

Command Aliases



Command Aliases

Command aliases make starting commands easier:

- Often remain consistent between releases
- Stored in the *acad.pgp* (AutoCAD) or *acadlt.pgp* (AutoCAD LT) file

Example:

L is the command alias for the **LINE** command

Command aliases **DON'T** support command options or values

Command Aliases

Syntax:

abbreviation, ***command_name**

Examples:

C, *CIRCLE

L, *LINE

M, *MOVE

To Create or Modify a Command Alias

1. Open the program's PGP file.
2. Add or edit an existing command alias.
3. Save the changes to the PGP file.
4. Reload the changed PGP file in the program with the REINIT command or close/restart the program.

Exercise: E2 - Define Custom Command Aliases

In this exercise, you will:

- Open the PGP file associated with AutoCAD
- Create a few new command aliases and override an existing command alias
- Reload the PGP file in AutoCAD

Starts on page 8 of the handouts.

Tool Palettes



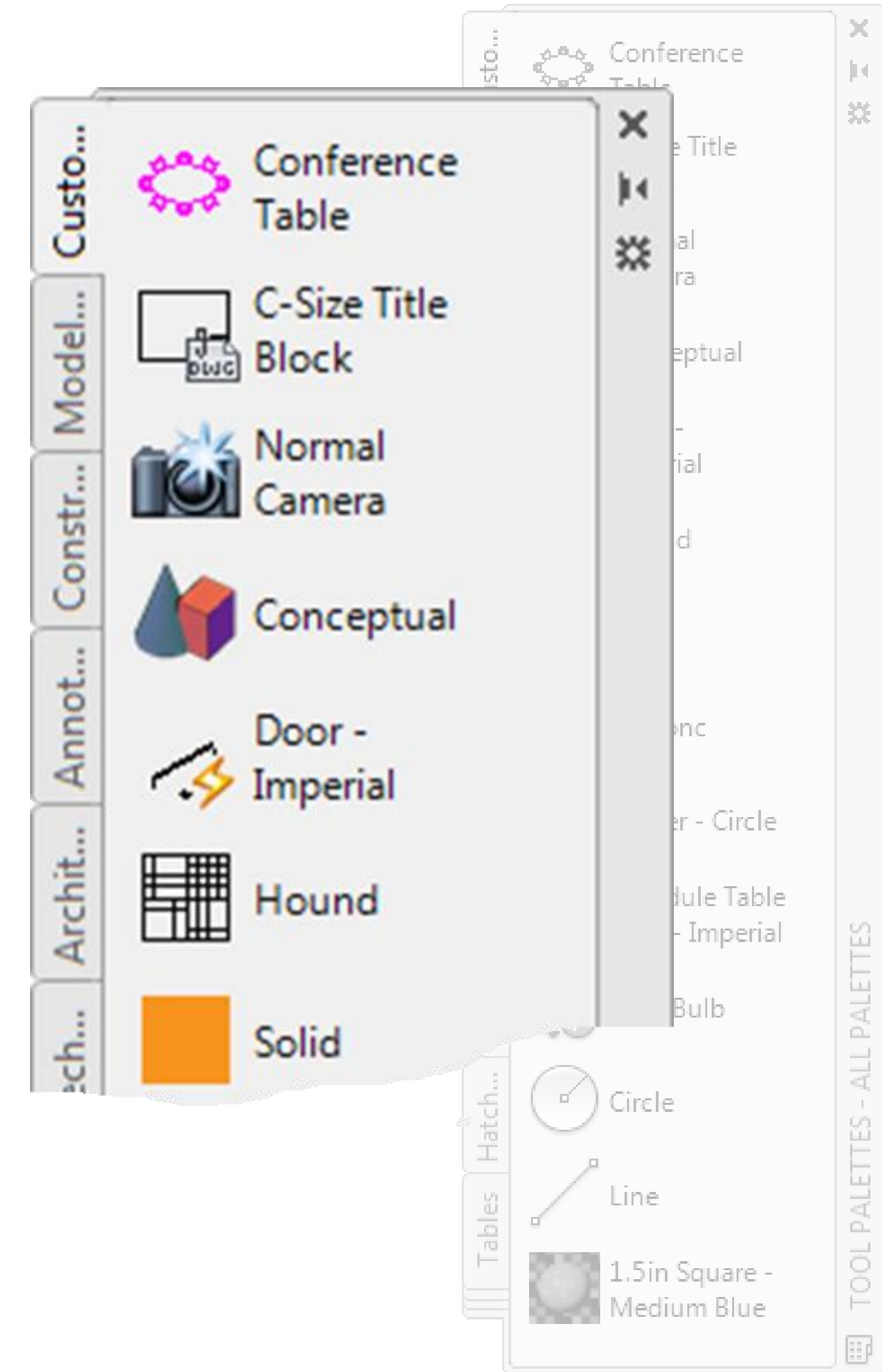
Tool Palettes

Collection of tools used to:

- Start commands
- Create new geometry
- Insert or attach external files

New tool palettes can be created

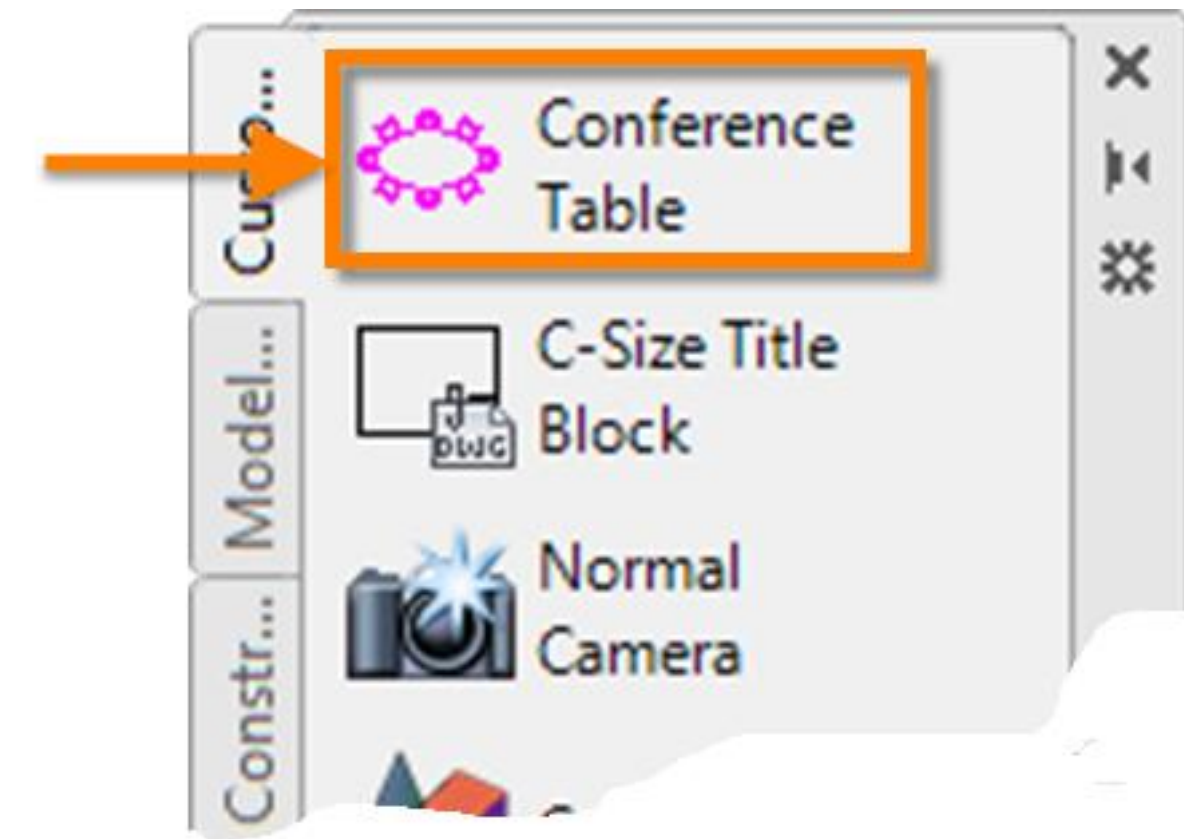
Similar tool palettes can be grouped together



Tool Palettes

Tools can be created from:

- Drawing objects in the current drawing
- Commands from the Customize User Interface (CUI) Editor
- Hatch patterns and blocks in the DesignCenter
- Drawing and external files from Windows Explorer or File Explorer
- Visual styles, lights, cameras, and materials in the current drawing

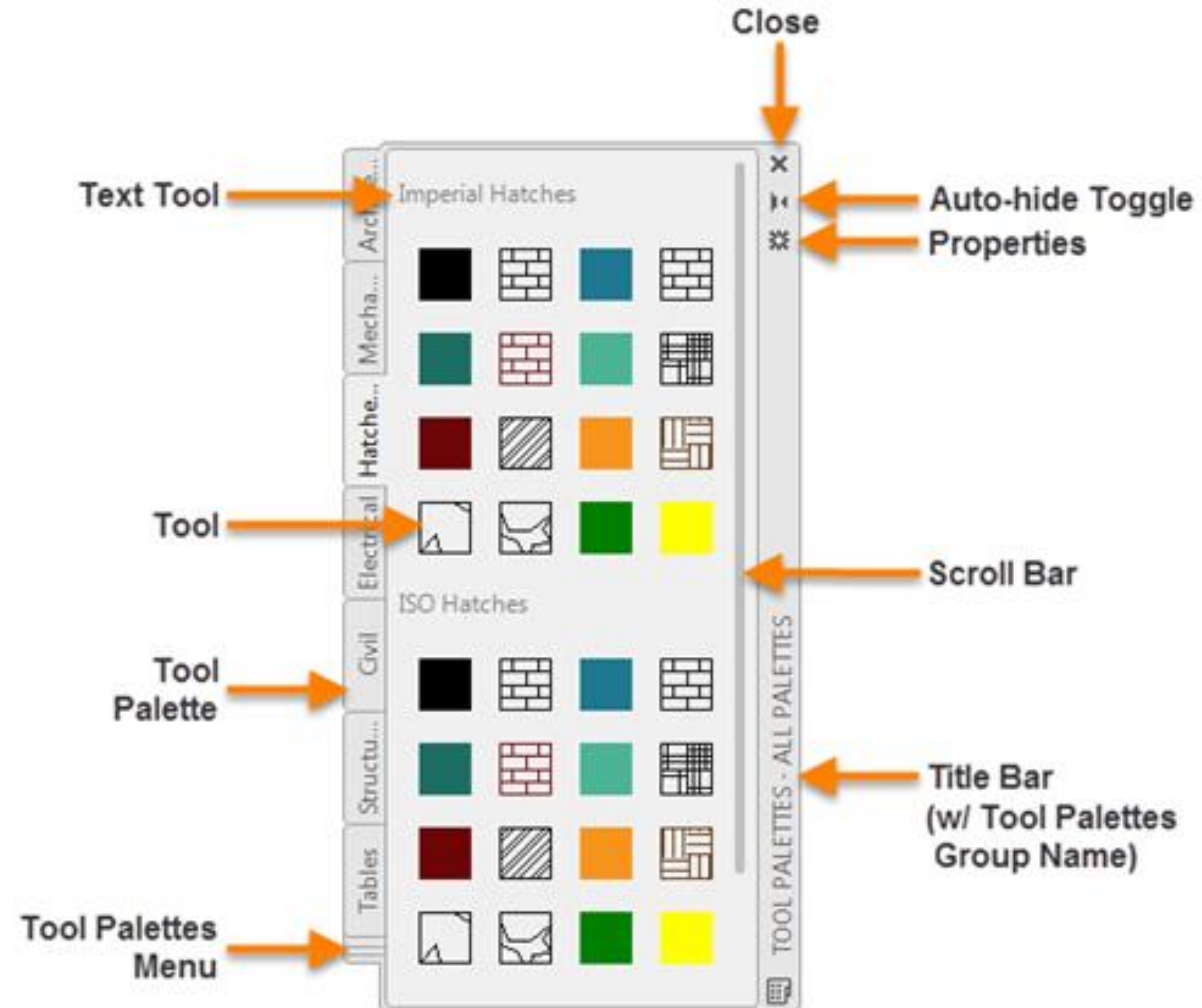


Tool Palettes

After a tool has been created, you can:

- Edit its properties
- Use the tool (via drag and drop, or a simple click)
- Organize similar tools with text and separators

Tool Palettes



To Create and Add Tools to a Tool Palette

1. Create a new or work with an existing tool palette.
2. Add tools to a tool palette.
3. Edit the properties of tools.
4. Test new tools created.
5. Organize the tools on a tool palette and group related tool palettes.

Exercise: E3 - Create a Tool Palette and Tools

In this exercise, you will:

- Create a new tool palette
- Add tools to the new tool palette
- Modify the properties of tools on a tool palette

Starts on page 10 of the handouts.

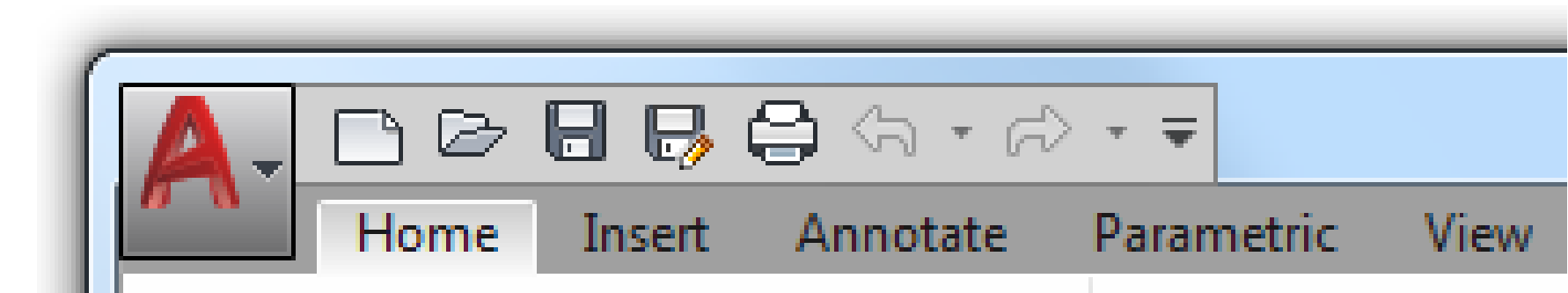
Quick Access Toolbar (QAT)



Quick Access Toolbar (QAT)

Contains drawing file management related tools:

- Creating and opening
- Saving
- Plotting



Provides access to common tools across all ribbon tabs

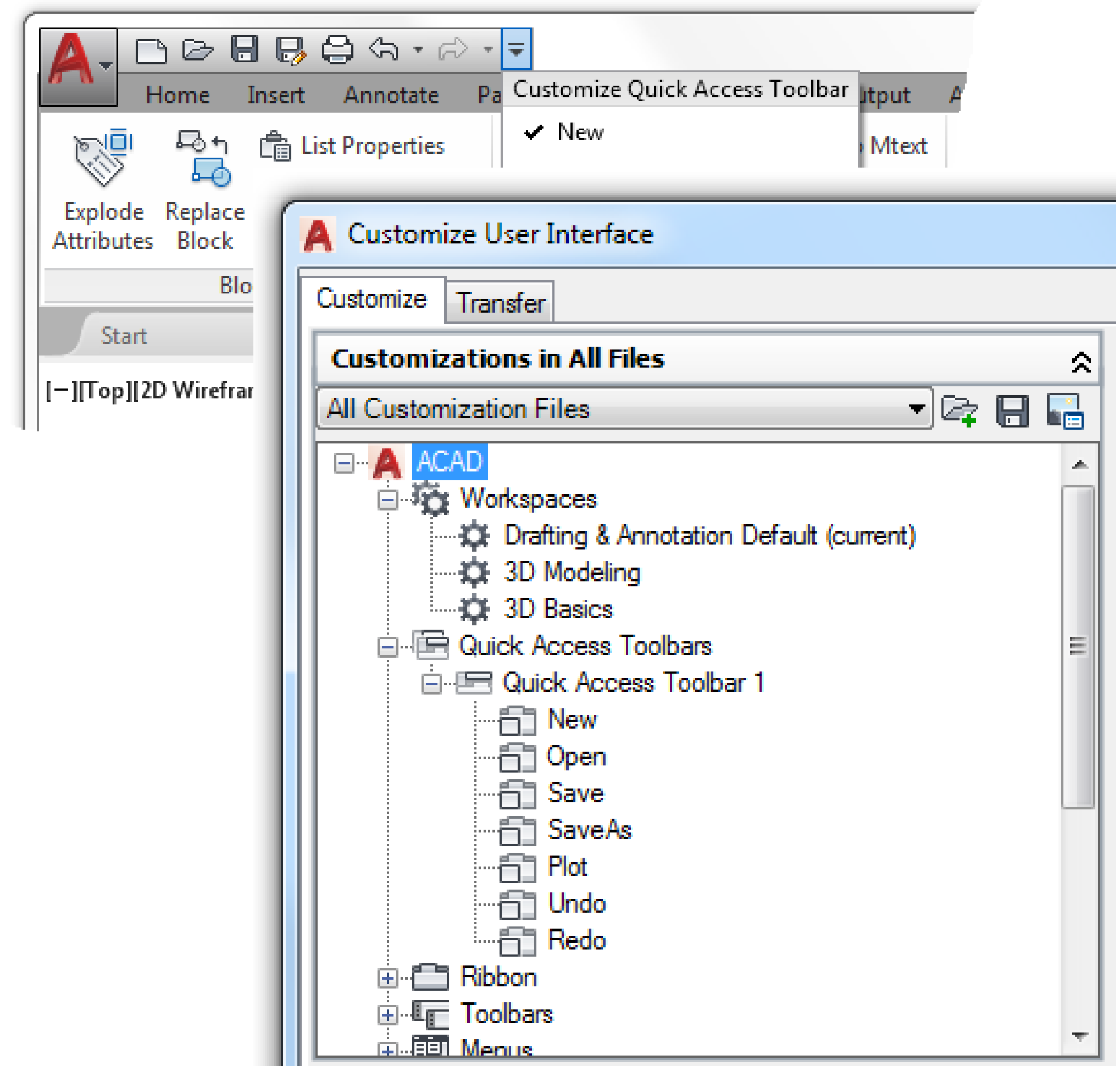
Displayed in the upper-left corner of the application by default

Multiple QATs can be created, but only one can be displayed at a time

Quick Access Toolbar (QAT)

Can be customized by:

- Clicking the Customize button on the QAT (right side)
- Right-clicking over the QAT
- Using the Customize User Interface (CUI) Editor



To Create a Quick Access Toolbar (QAT)

1. Start the Customize User Interface (CUI) Editor.
2. Create a new QAT.
3. Add or remove commands from the QAT.
4. Assign the new QAT to a workspace.
5. Set the modified workspace current.

Exercise: E4 - Create a Quick Access Toolbar

In this exercise, you will:

- Create a new Quick Access toolbar (QAT)
- Add a few commands to the new QAT
- Remove a command from the new QAT
- Assign the new QAT to a workspace

Starts on page 15 of the handouts.

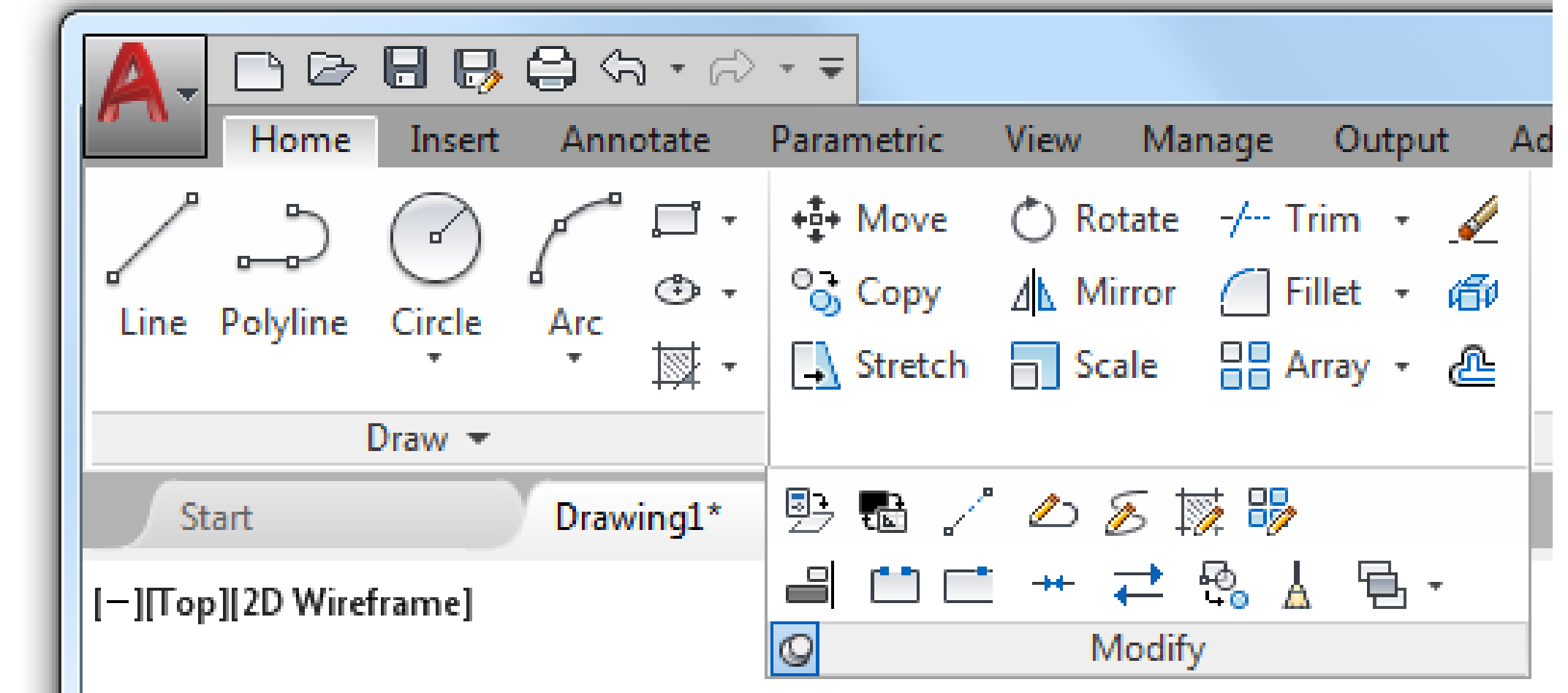
Ribbon



Ribbon

Contains tools organized by task, such as:

- Creating and editing objects
- Working w/ blocks and references
- Adding annotation
- Outputting drawings

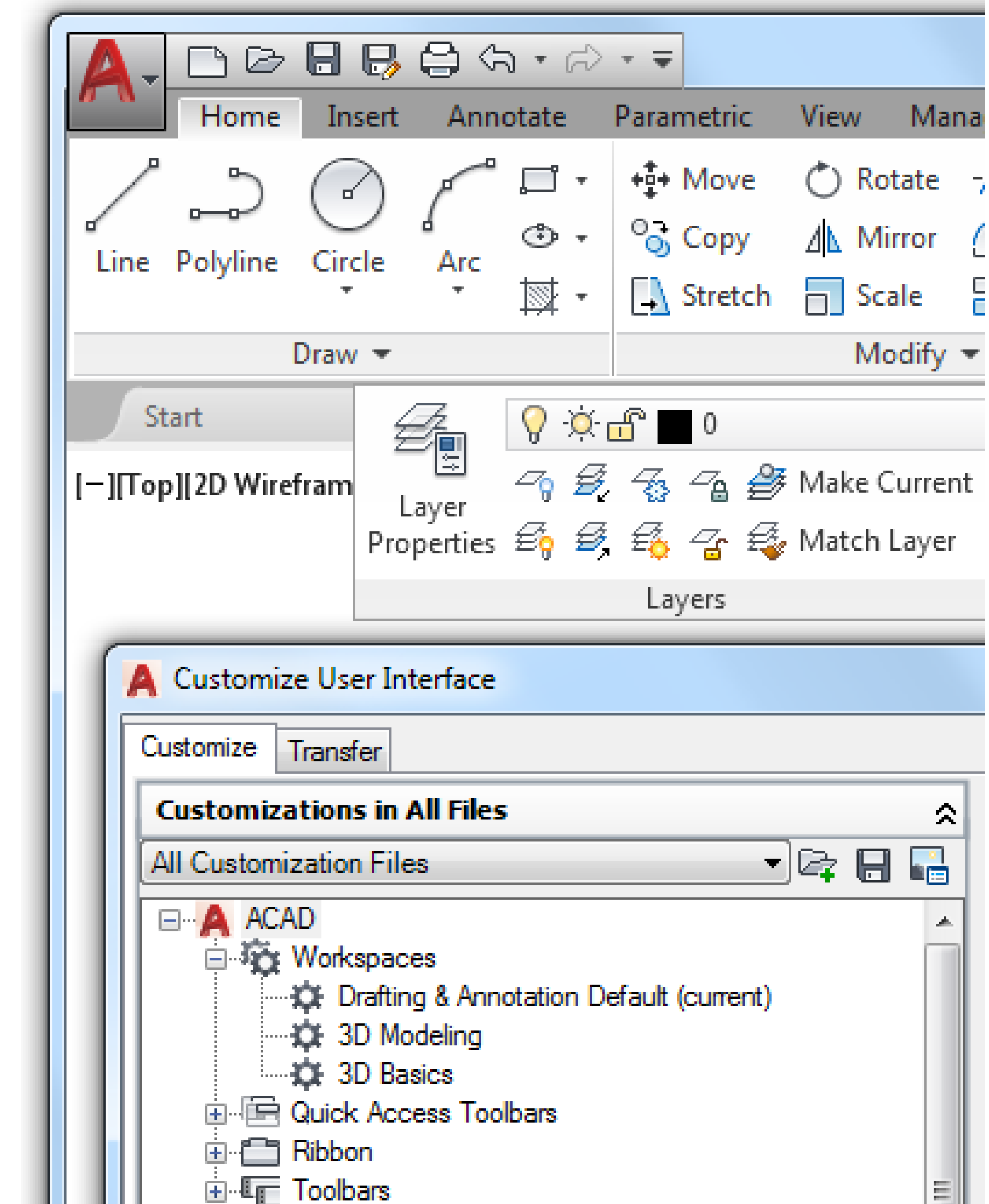


Displayed across the top of the application window and below the Quick Access toolbar (QAT)

Ribbon

Can be customized by:

- Right-clicking over a ribbon panel or tab
- Dragging and dropping a ribbon panel over the drawing area or ribbon
- Using the Customize User Interface (CUI) Editor



To Create Ribbon Panels and Tabs

1. Start the Customize User Interface (CUI) Editor.
2. Create a new ribbon panel and add commands/controls to it.
3. Create a new ribbon tab and add ribbon panels to it.
4. Assign new ribbon panels to a new ribbon tab.
5. Assign a new ribbon tab to a workspace.
6. Set the modified workspace current.

Exercise: E5 - Create a Ribbon Tab and Panel

In this exercise, you will:

- Create a new ribbon panel
- Add commands to a ribbon panel
- Create a new ribbon tab
- Add a ribbon panel to a ribbon tab
- Assign a ribbon tab to a workspace

Starts on page 22 of the handouts.

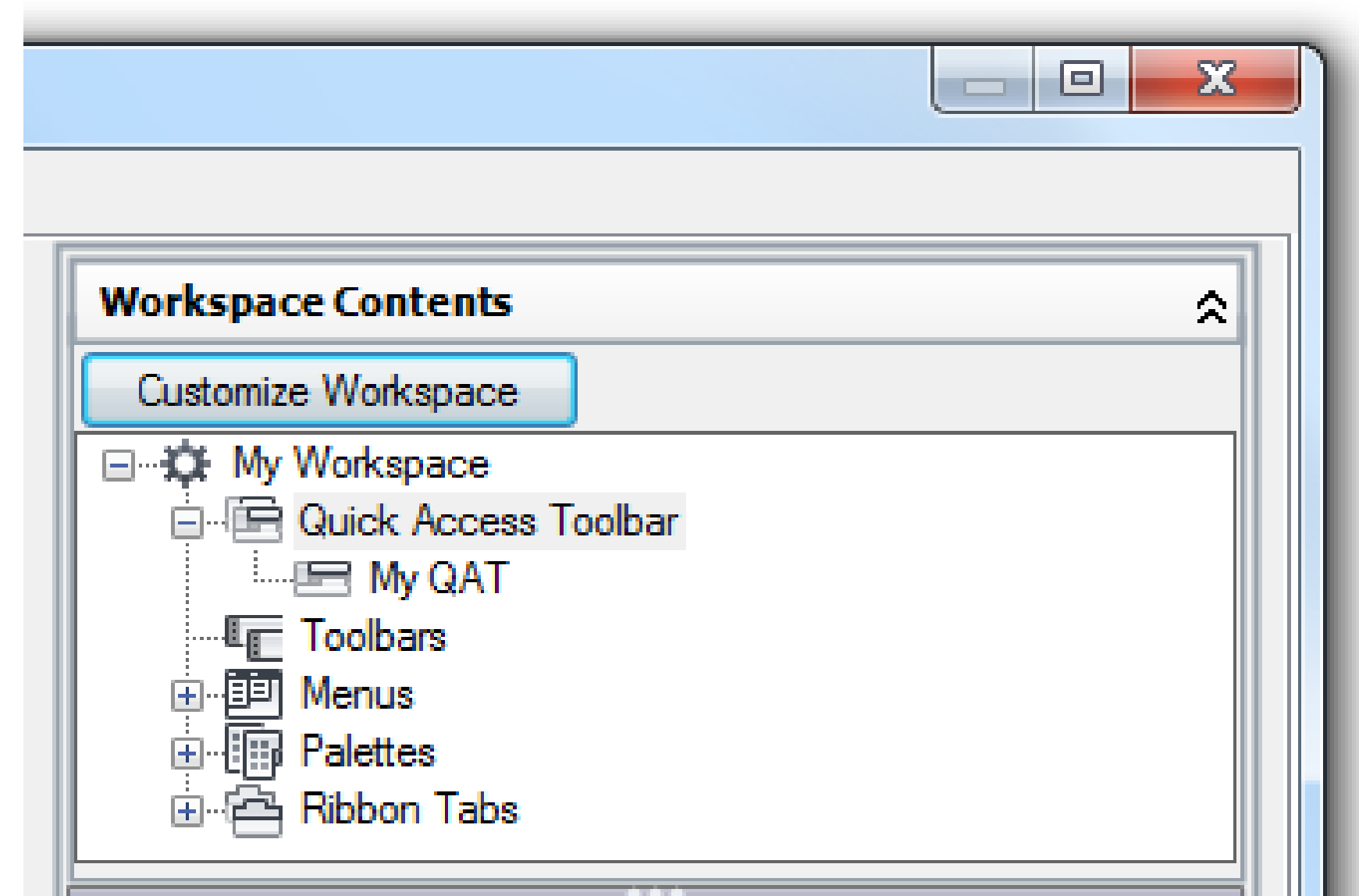
Workspaces



Workspaces

Control the visibility and placement of user interface (UI) elements in the user interface, such as:

- Quick Access toolbar (QAT)
- Ribbon tabs
- “Classic” toolbars
- Pull-down menus
- Palettes

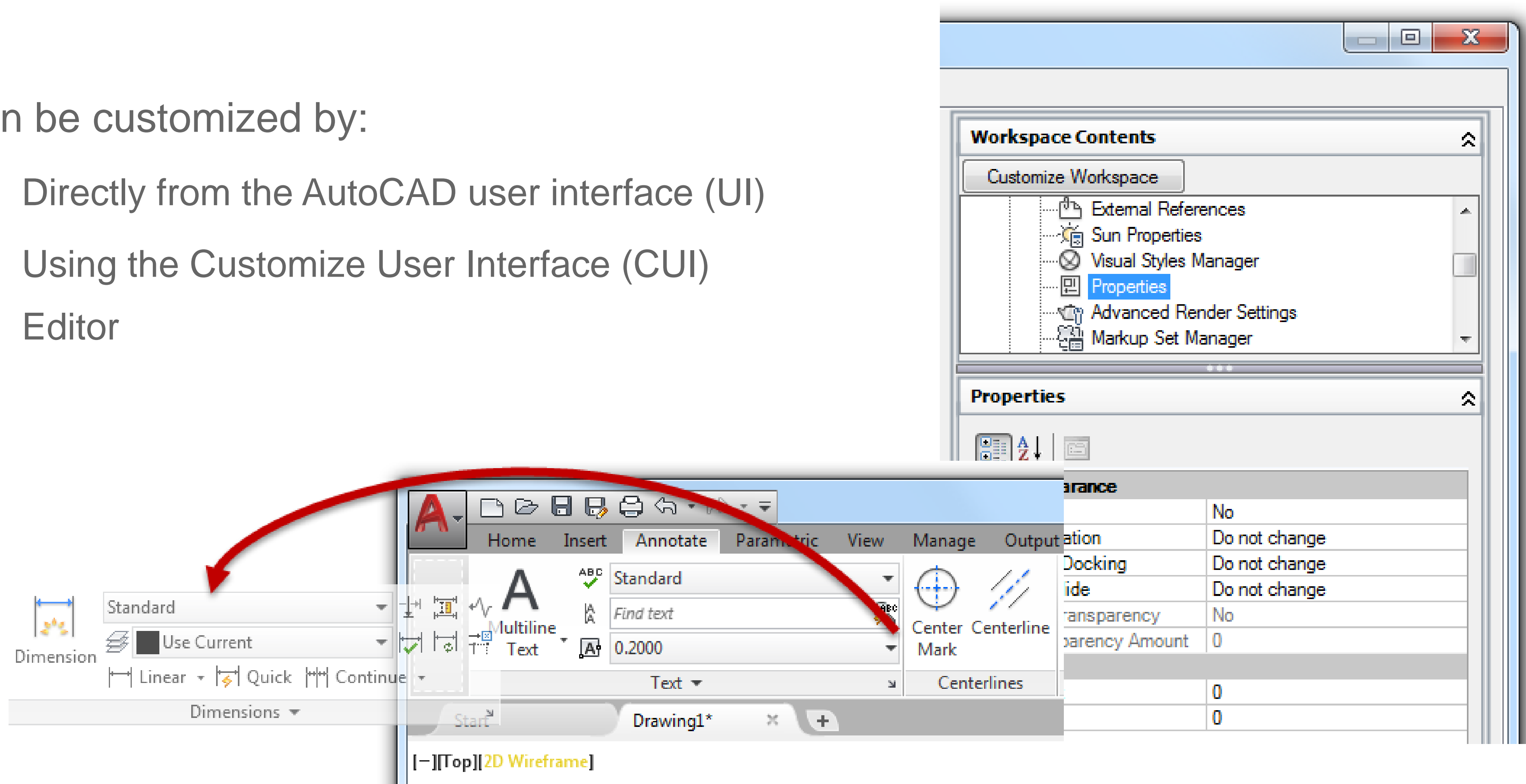


Workspaces

Can be customized by:

- Directly from the AutoCAD user interface (UI)
- Using the Customize User Interface (CUI) Editor

Editor



To Create a Workspace with the CUI Editor

1. Start the Customize User Interface (CUI) Editor.
2. Create a new workspace.
3. Add or remove user interface elements to the workspace.
4. Set the modified workspace current.

To Create a Workspace from the AutoCAD UI

1. Arrange the elements of the AutoCAD user interface (UI).
2. Start the WSSAVE command.
3. Enter the name of the workspace to create.

Exercise: E6 - Modify and Create a Workspace

In this exercise, you will:

- Modify the placement of elements in the AutoCAD user interface (UI)
- Control the visibility of “Classic” toolbars and ribbon tabs
- Create a new workspace

Starts on page 31 of the handouts.

Final Thoughts and Questions



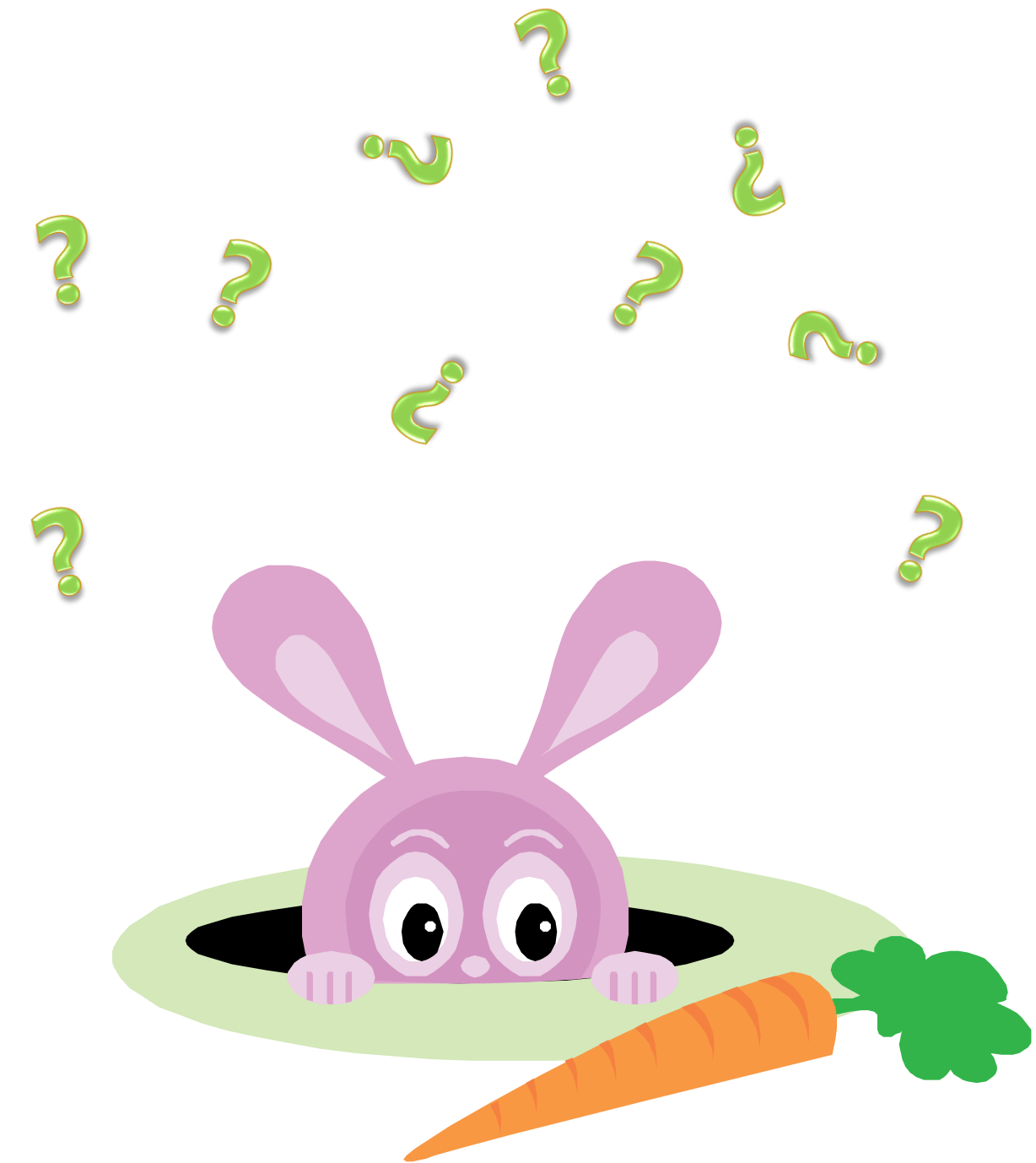
Final Thoughts and Questions

Customization can:

- Enhance productivity
- Improve or introduce new workflows

Customizing has many similarities to *Wonderland in Lewis Carroll's Alice's Adventures*. Both

- are virtually endless
- hold many mysteries waiting to be discovered



Closing Remarks

Thanks for choosing this session.

Don't forget to complete this session's survey.

If you have any further questions, contact me via:

email: lee.ambrosius@autodesk.com

twitter: [@leeambrosius](https://twitter.com/leeambrosius)



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