# AS122151-L - AutoCAD Customization Boot Camp—Basic (No Experience Required)

Lee Ambrosius

Principal Learning Experience Designer

# Where Am I and Who Should Be Here

You are in session:

- AS122151-L - AutoCAD Customization Boot Camp—Basic (No Experience Required)

You should know:

- AutoCAD 2018 (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 two decades of customizing and programming AutoCAD
- Customization, Developer, and CAD Administration documentation
- Author of the AutoCAD Customization Platform book series
- Demystifying Customization column author on the AutoCAD Blog

My job in a nutshell:

- Document the past and present AutoCAD releases for the future

# Who Are the Lab Assistants?

Lab assistants:

- Alex Lepeska
- Samuel Lucido
- Scott Wilcox

Their roles are to:

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

# Session Rules

- Silent your mobile phone 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

# 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

# Customization Options are 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
- 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

# 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)

# What You Will Learn Today

**NO** prior customization experience is required

Customization **COULD BE** programming, but not 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

# What is Going to be Covered

The handouts are broken into two separate parts/files:

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

# What You Need to Get Started

For this session, you will be using:

- AutoCAD 2018
- Customize User Interface (CUI) Editor
- Notepad; part of the Windows operating system

# Desktop Shortcuts

# Desktop Shortcuts

Used to:

- Launch an application
- Open a folder location

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

- AutoCAD program supports a total of 16 command line switches

# Desktop Shortcuts

| Some of the available command line switches | |
|---|---|
| /t | Specifies the drawing template for the default drawing.<br>Example: */t "mytemplate.dwt"* |
| /nologo | Disables the splash screen at startup.<br>Example: */nologo* |
| /p | Sets a named user profile current or loads a previously exported user profile (ARG) file.<br>Example: */p "<<Unnamed Profile>>"* |
| /w | Sets a named workspace current from a loaded CUIx file.<br>Example: */w "2D Drafting"* |

# Standard AutoCAD 2018 Shortcut

"C:\Program Files\Autodesk\AutoCAD 2018\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 Switches

"C:\Program Files\Autodesk\AutoCAD 2018\acad.exe" **/product ACAD**
**/language "en-US" /nologo /t "C:\Datasets\AS122151-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 2018 desktop shortcut.
2. Add the command line switches you want to use.
3. Modify the properties of the copied desktop shortcut.

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 2018 shortcut
- Add command line switches to a shortcut

# Command Aliases

# Command Aliases

Command aliases are used to 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 the AutoCAD program
- Create a new command alias and override an existing command alias
- Reload the PGP file in the AutoCAD program

# Tool Palettes

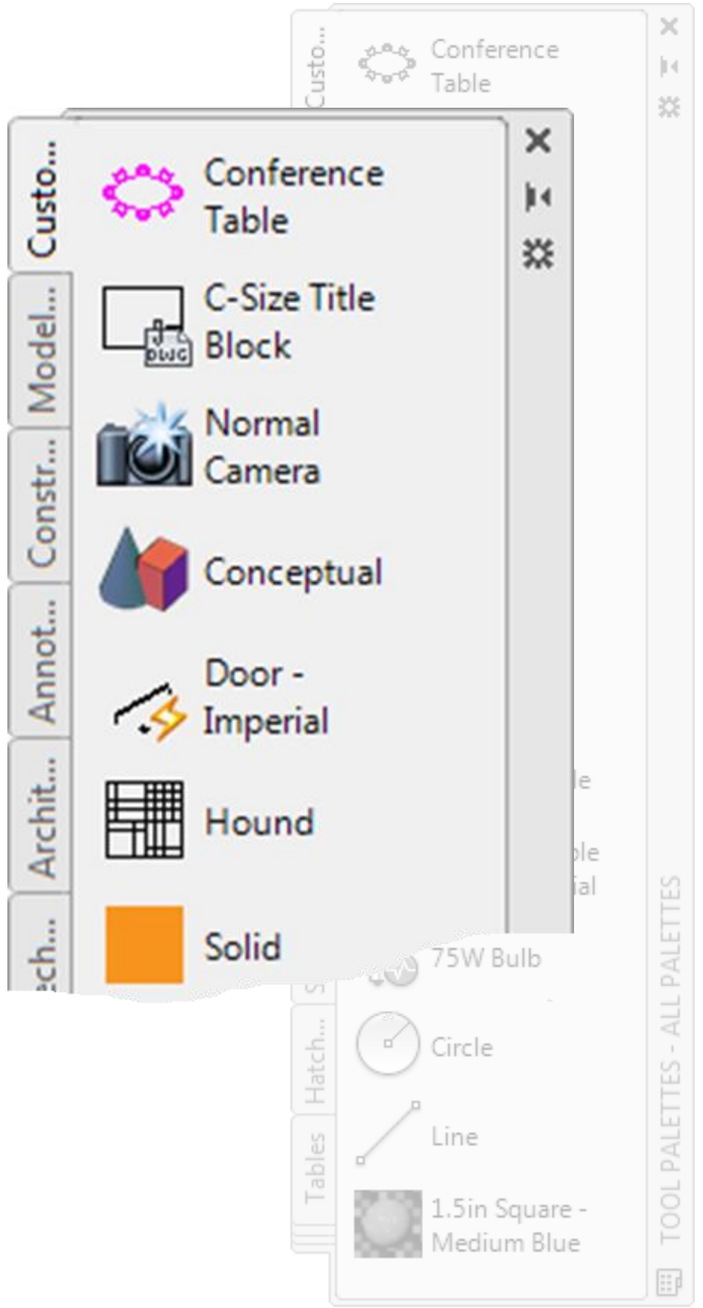
# Tool Palettes

Collection of tools used to:

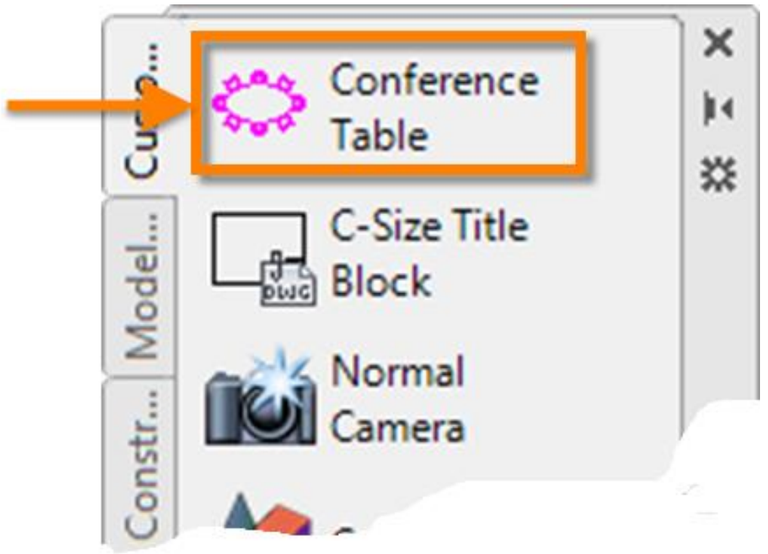
- Start commands
- Create geometry
- Insert or attach external files

New tool palettes can be created

Similar tool palettes grouped together



# Tool Palettes




Tools can be created from:

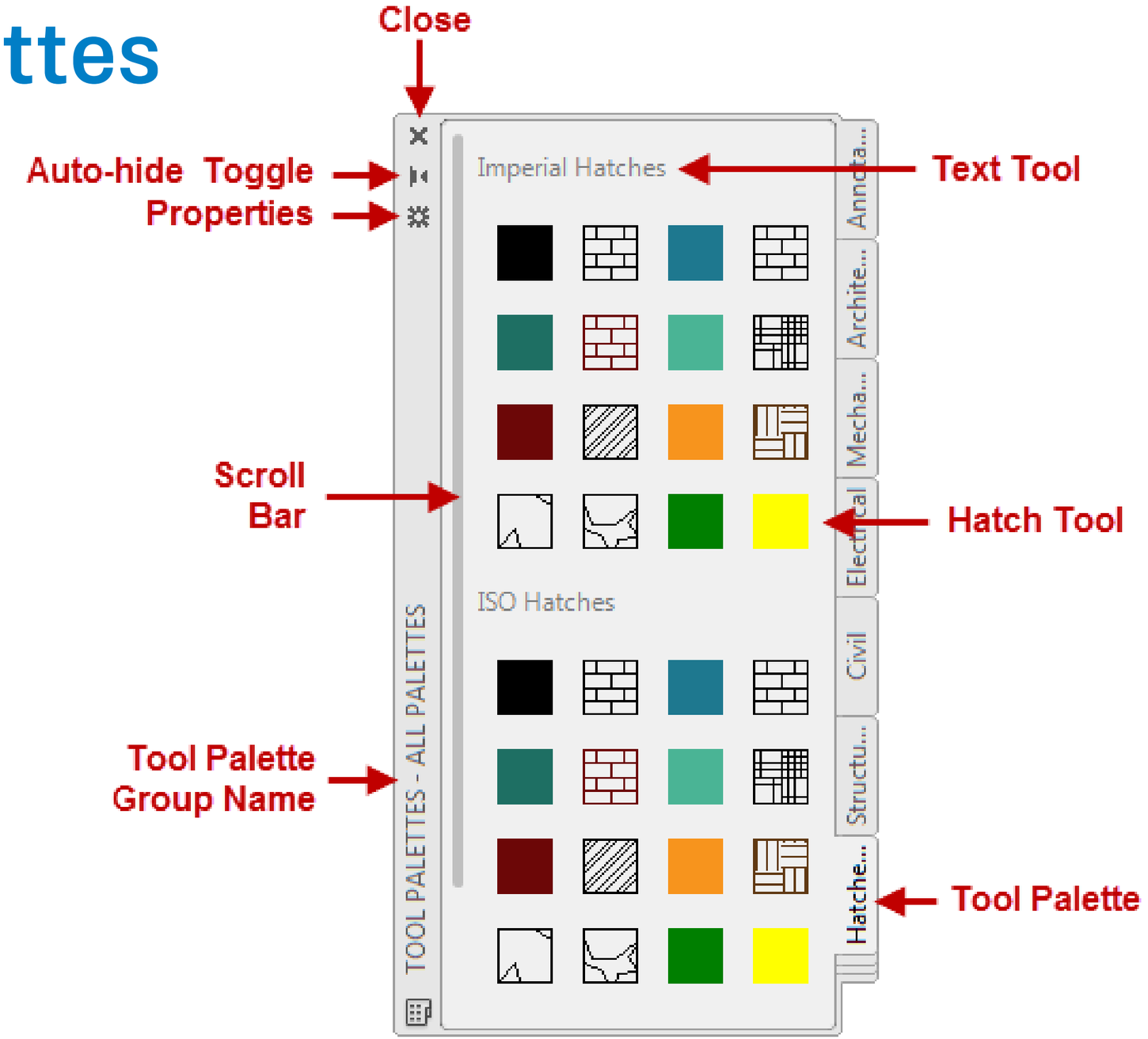
- Drawing objects in the current drawing
- Commands from the CUI Editor
- Hatch patterns and blocks in the DesignCenter
- Drawing and image files from Windows Explorer or File Explorer
- Visual styles and materials in the current drawing

# Tool Palettes

After a tool has been created, you can:

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

# Tool Palettes



# To Create and Add Tools to a Tool Palette

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

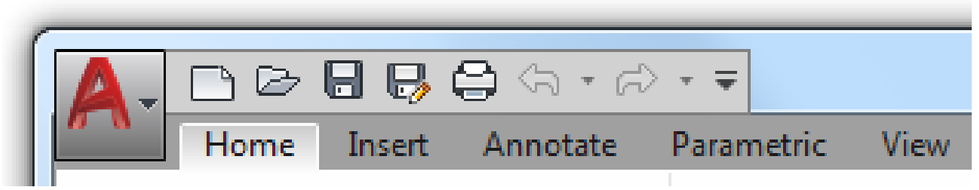
# Exercise: E3 - Create a Tool Palette and Tools

In this exercise, you will

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

# 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

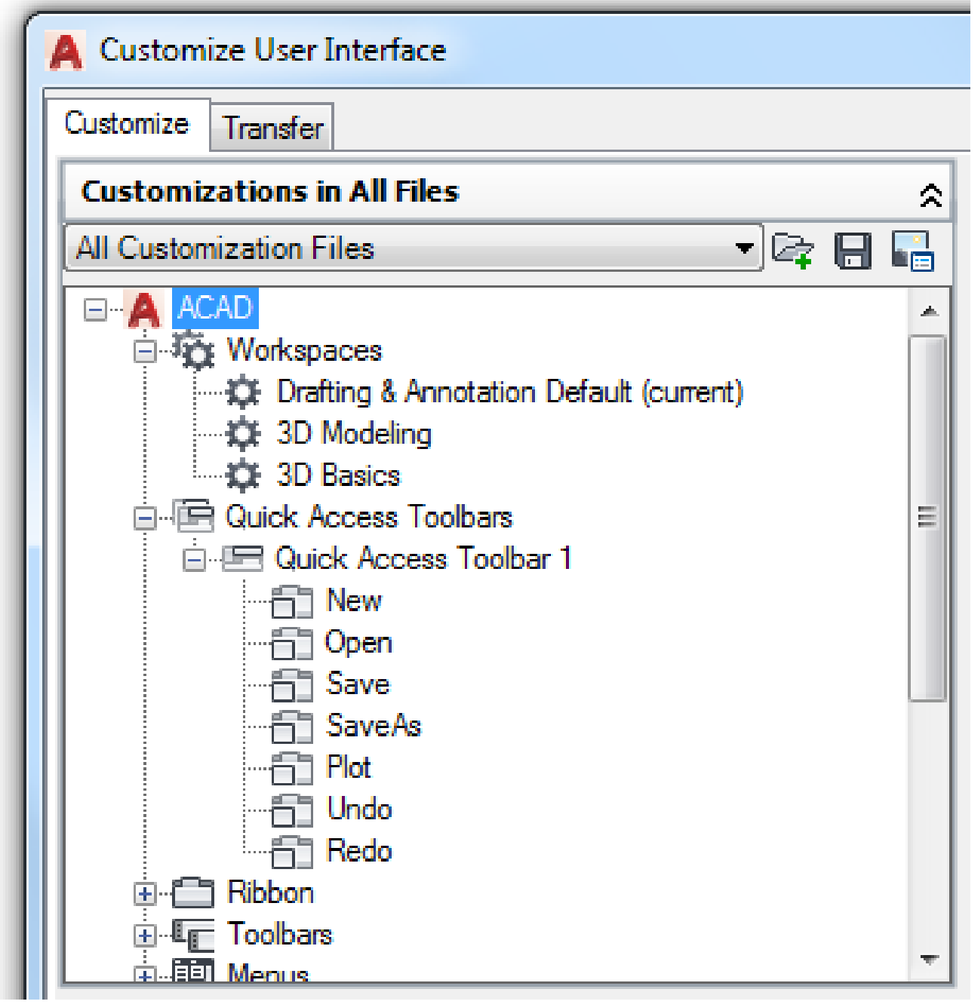
Displayed in the upper-left corner of the application by default

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 right side of the QAT
- 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

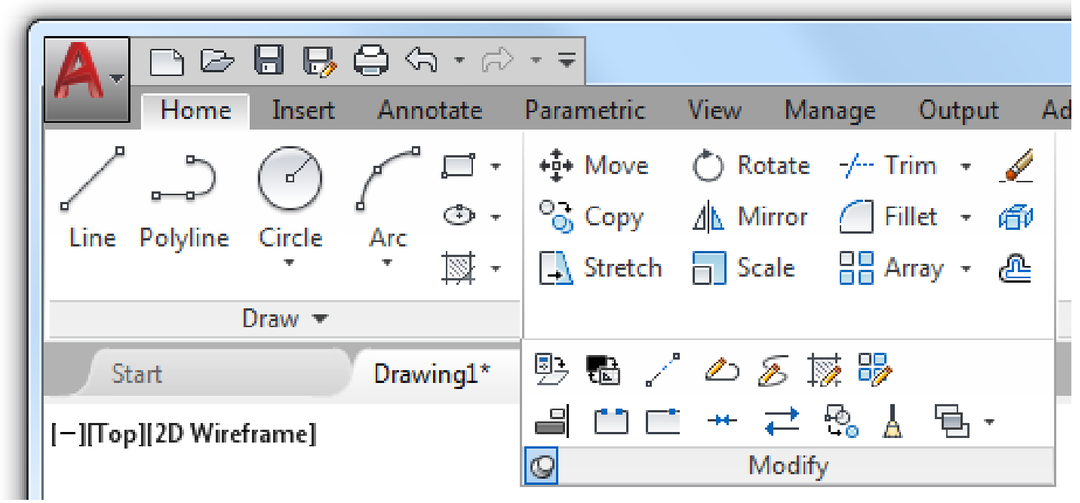
- Create a new Quick Access toolbar (QAT)
- Add a command to a QAT
- Remove a command from a QAT
- Assign a QAT to a workspace

# Ribbon

# Ribbon

Contains tools organized by task:

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

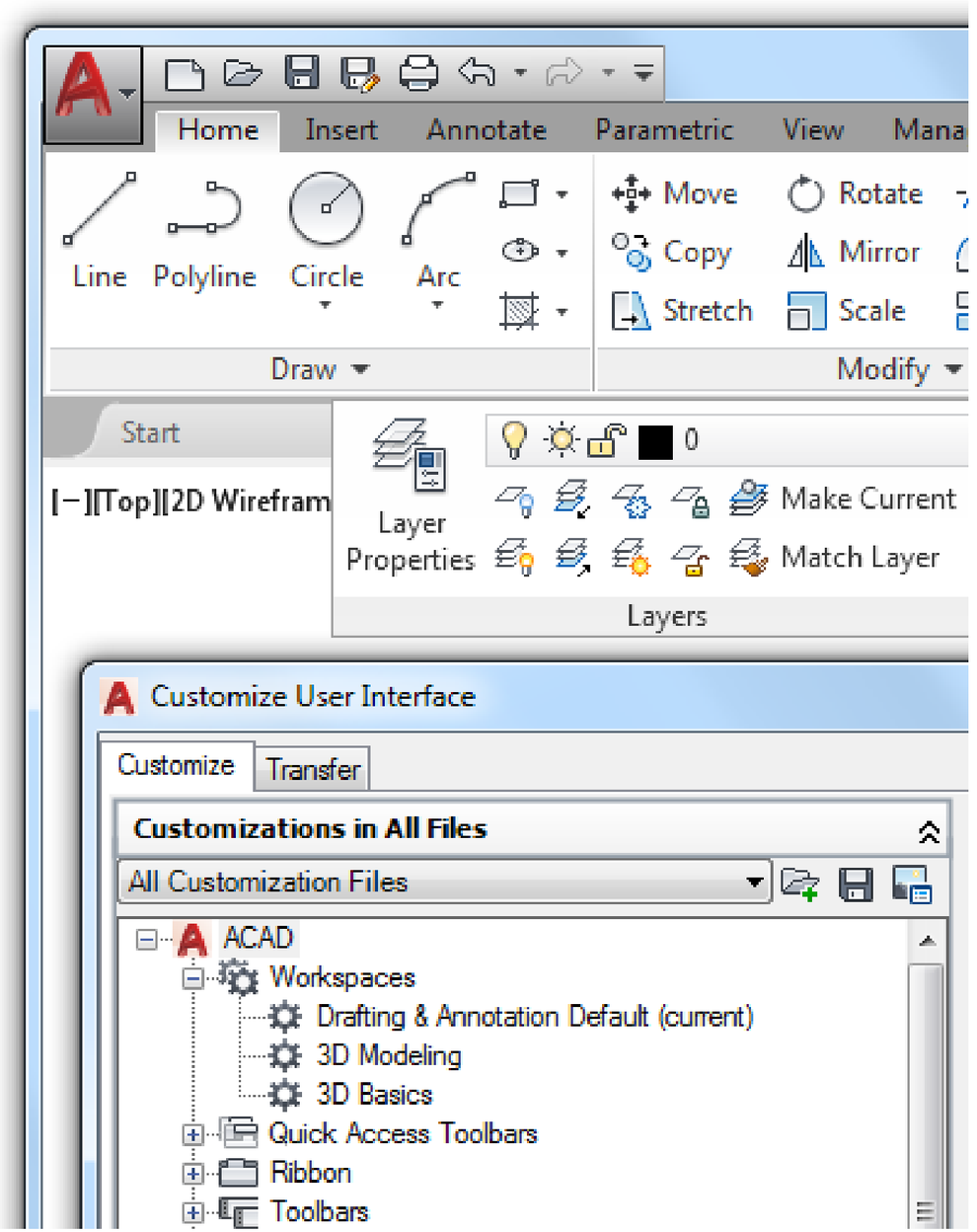



Displayed across the top of the application window and below the Quick Access toolbar (QAT)

# Ribbon

Can be customized by:

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



# 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 new ribbon tabs 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

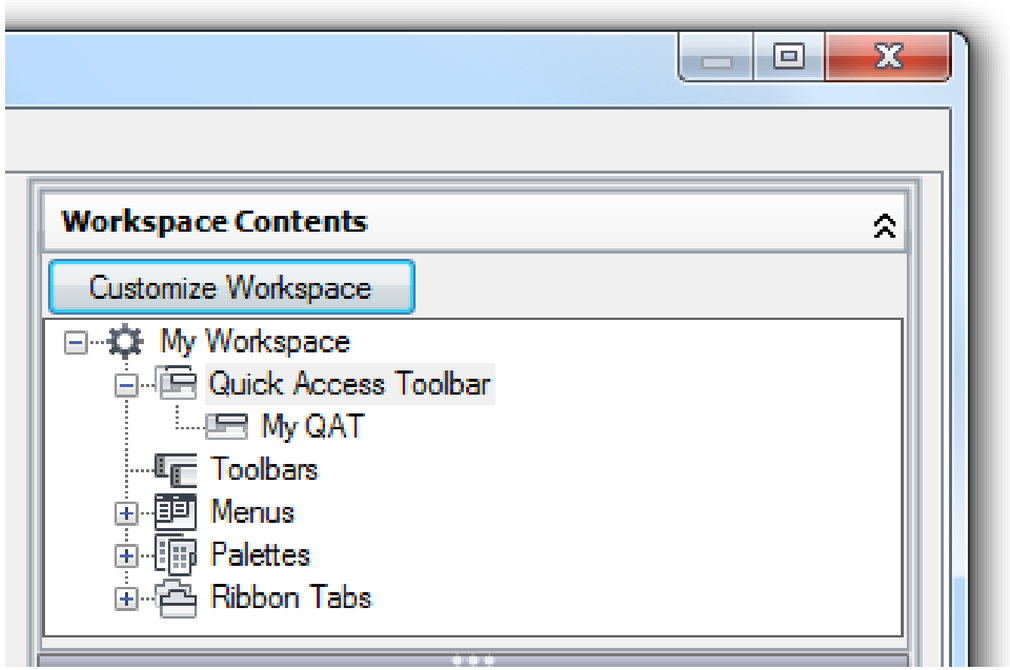
# Workspaces

# Workspaces

Control the visibility and placement of user interface (UI) elements

Some UI elements controlled are:

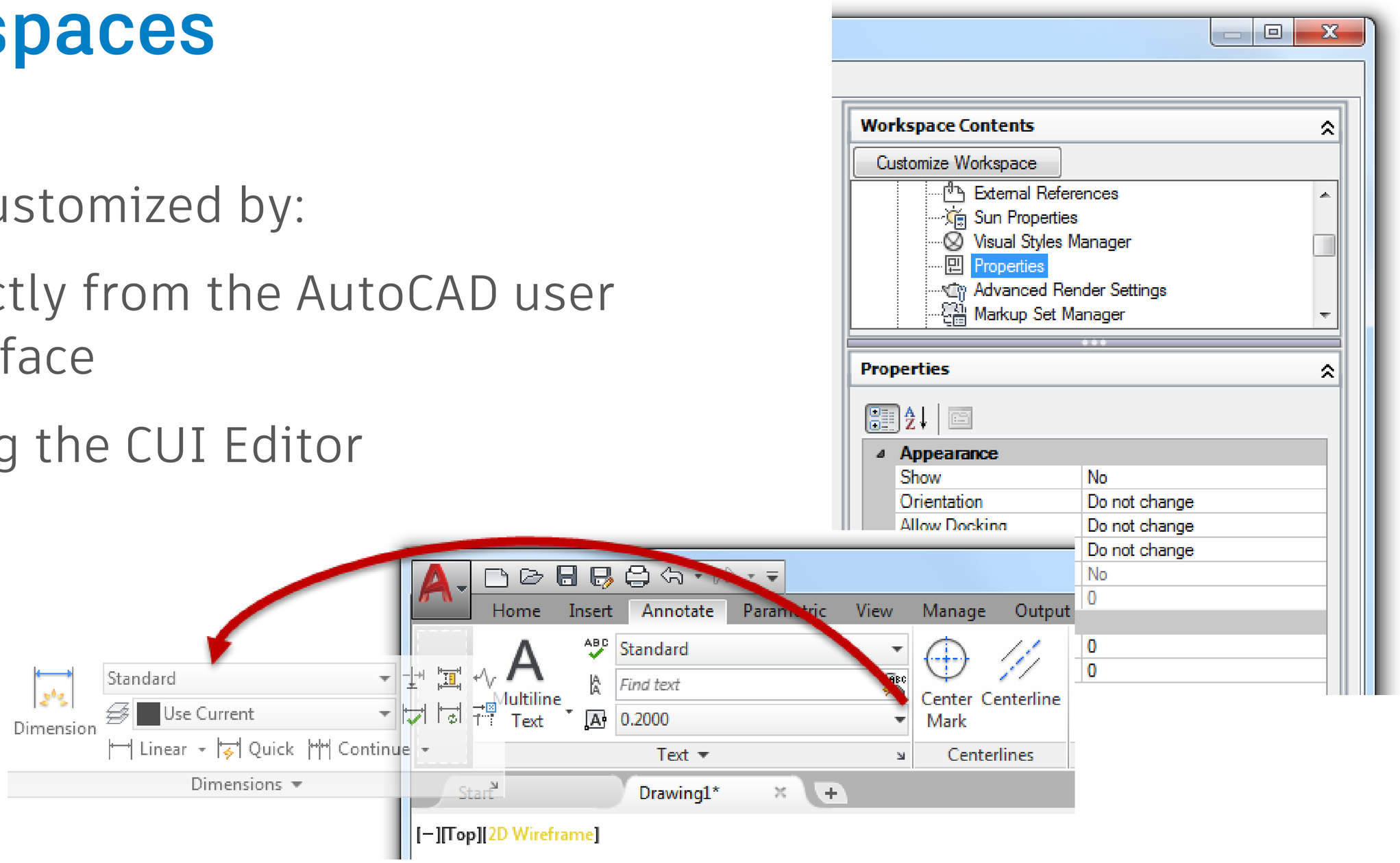
- Quick Access toolbar (QAT)
- Ribbon tabs
- “Classic” toolbars
- Pull-down menus
- Palettes



# Workspaces

Can be customized by:

- Directly from the AutoCAD user interface
- Using the CUI Editor



# To Create a Workspace

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.

# Exercise: E6 - Modify and Create a Workspace

In this exercise, you will

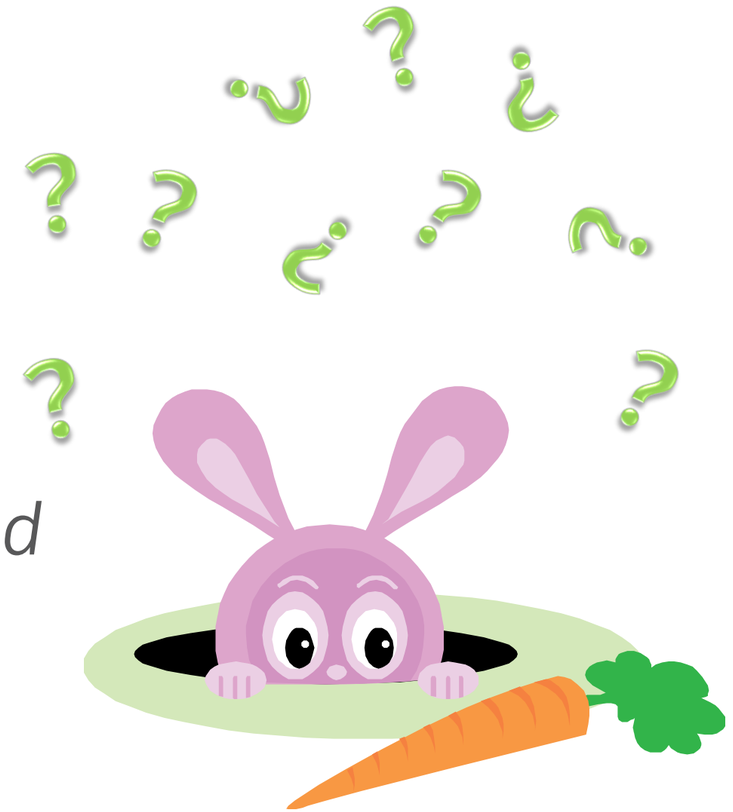
- Modify the placement of elements in the user interface
- Control the visibility of “Classic” toolbars and ribbon tabs
- Create a new workspace

# 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 Caroll'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 online evaluation.

If you have any further questions, contact me via:

**email:** lee.ambrosius@autodesk.com

**twitter:** @leeAmbrosius

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