IT20495-L - AutoCAD Customization Boot Camp—Basic (No Experience Required)

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Where Am I and Who Should Be Here

You are in session:

IT20495-L - AutoCAD Customization Boot Camp—Basic (No Experience Required)

You should know:

AutoCAD 2017 (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
- Work on the Customization, Developer, and CAD Administration documentation
- Customizing and programming AutoCAD for about two decades
- Author of the AutoCAD Customization Platform book series published by Wiley

My job in a nutshell:

I document the present and past AutoCAD releases for the future

Who Are the Lab Assistants?

The lab assistants for this session are:

- Craig Black
- Alex Lepeska
- Scott Wilcox

Their roles are to:

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

Session Rules

A few rules for this session:

- Silent your mobile phone and any other device
- If you have to leave at anytime, please do so quietly
- Hold all questions to the end
- If you get stuck, raise your hand and one of the lab assistants will help you out

Thanks for your cooperation

Welcome to Basic Training

Do You Customize AutoCAD Today?

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Which of the following is a form of customization?

- Creating a new block
- Adding a layer
- Modifying or adding a style (text, dimension, …)
- Creating a custom toolbar
- Changing the background color of the drawing window

Do You Customize AutoCAD Today?

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All of these are forms of customization.

Which Customization Options are Available

There are three levels of customization expertise:

- Basic
- Intermediate
- Advanced (programming required)

Two types of customization:

- Drawing
- Application

Basic Customization

Drawing Customization

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

Application Customization

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

Basic Customization

Drawing Customization

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- Blocks
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- Materials for rendering
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Application Customization

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

Intermediate Customization

Drawing Customization

- Dynamic blocks

Application Customization

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

Intermediate Customization

Drawing Customization

- Dynamic blocks

Application Customization

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

Advanced Customization/Programming

Application Customization

- 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.

By the end of this session, you will learn 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:

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

What You Need to Get Started

For this session, you will be using:

- AutoCAD 2017
- Customize User Interface Editor
- Notepad; part of the Windows operating system

Desktop Shortcuts

Desktop Shortcuts

Desktop shortcuts are used to:

- Launch an application
- Open a folder location

The AutoCAD program supports command line switches

- Command line switches are used to alter the startup behavior of an application
- A total of 16 command line switches are supported

Desktop Shortcuts

Listing of some available command line switches

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

Desktop Shortcuts

Standard AutoCAD 2017 shortcut:

"C:\Program Files\Autodesk\AutoCAD 2017\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

Desktop Shortcuts

AutoCAD 2017 shortcut with additional command line switches :

"C:\Program Files\Autodesk\AutoCAD 2017\acad.exe" /product ACAD /language "en-US" /nologo /t "C:\Datasets\IT20495-L - AutoCAD Customization Boot Camp-Basic (No Experience Required)\C-size.dwt" /w "3D Basics"

Desktop Shortcuts

To create a desktop shortcut, you typically will:

1. Copy the existing AutoCAD 2016 desktop shortcut.
2. Add the command line switches you want to use.
3. Modify the properties of the copied desktop shortcut.

Alternatively, you can:

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.

Desktop Shortcuts

Do exercise “E1 - Create a Desktop Shortcut”

In this exercise, you will

- Create a new AutoCAD 2017 shortcut
- Add command line switches to a shortcut

Command Aliases

Command Aliases

Command aliases are used to make entering and 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

Command Aliases

To create or modify a command alias, you need to:

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.

Command Aliases

Do exercise “E2 - Define Custom Command Aliases”

In this exercise, you will

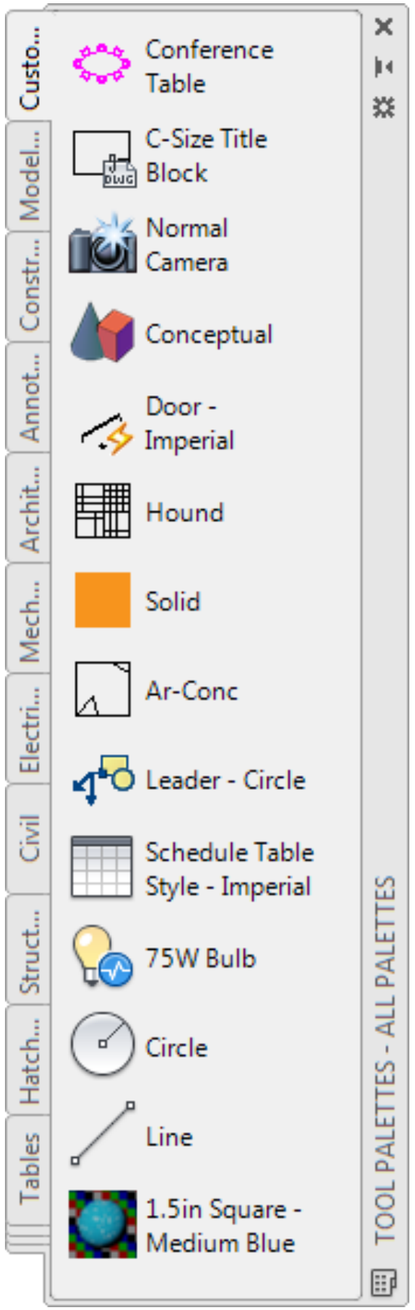
- Open the PGP file associated with the AutoCAD program
- Create a new command alias and override an existing command alias
- Reload the PGP file in the AutoCAD program

Tool Palettes

Tool Palettes

Tool palettes are a collection of tools used to:

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



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

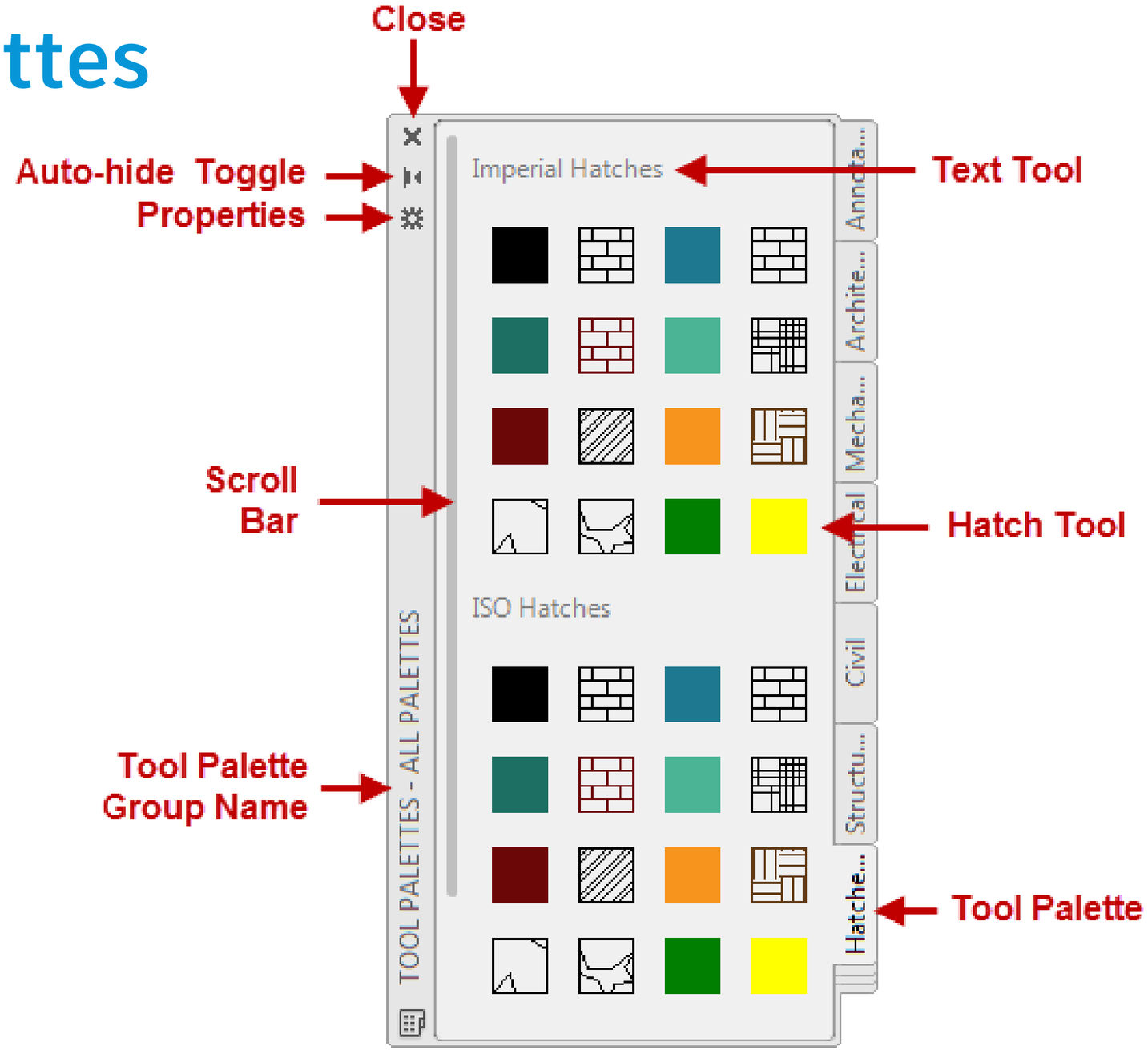
Tool Palettes

After a tool has been created, you can:

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

Similar tool palettes can also be grouped together into tool palette groups.

Tool Palettes



Tool Palettes

To create and add tools to a tool palette, you need to:

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

Tool Palettes

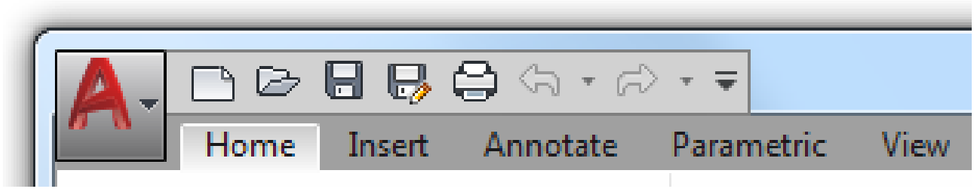
Do exercise “E3 - Create a Tool Palette and Tools”

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 tasks:

- Creating and opening
- Saving
- Plotting

Provides access to common tools across all ribbon tabs.

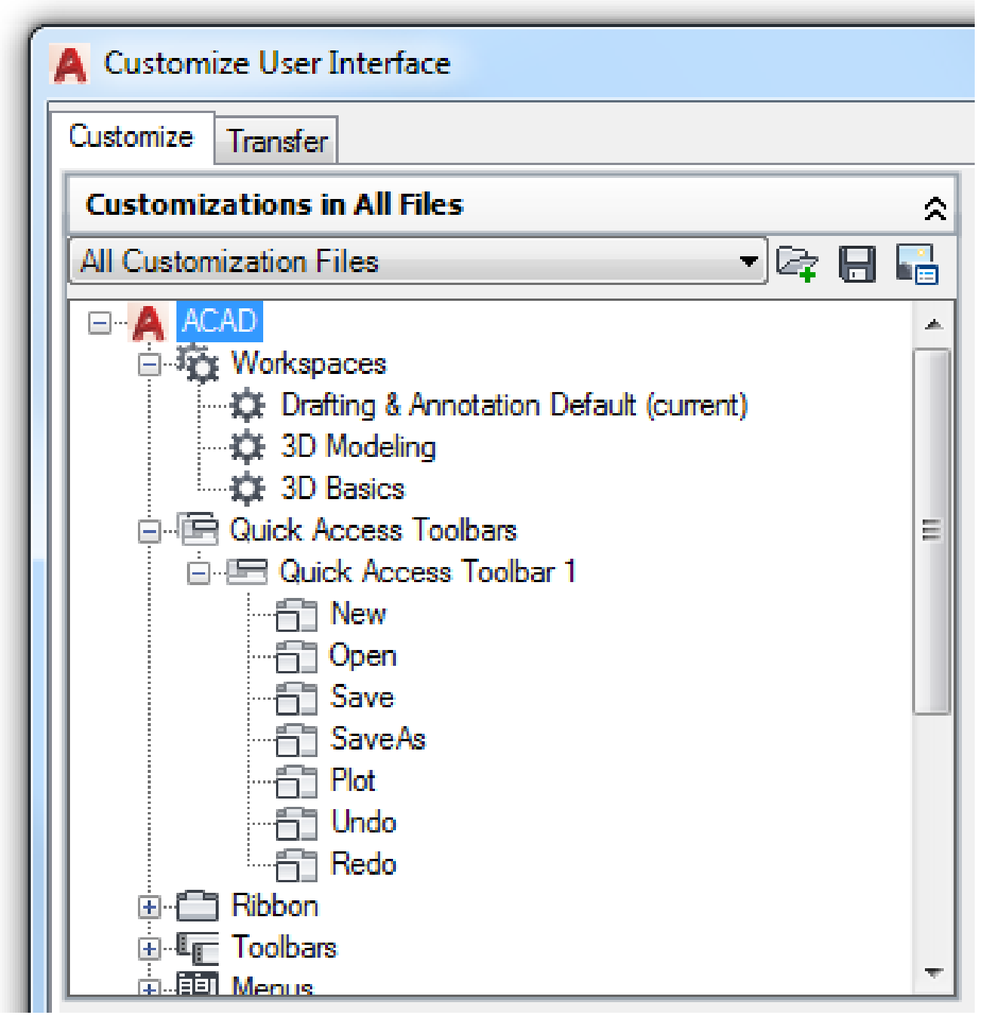
Displayed in the upper-left corner of the application by default.

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
- Right-clicking over the QAT
- Using the Customize User Interface (CUI) Editor



Quick Access Toolbar (QAT)

To create a Quick Access toolbar, you need to:

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

Quick Access Toolbar (QAT)

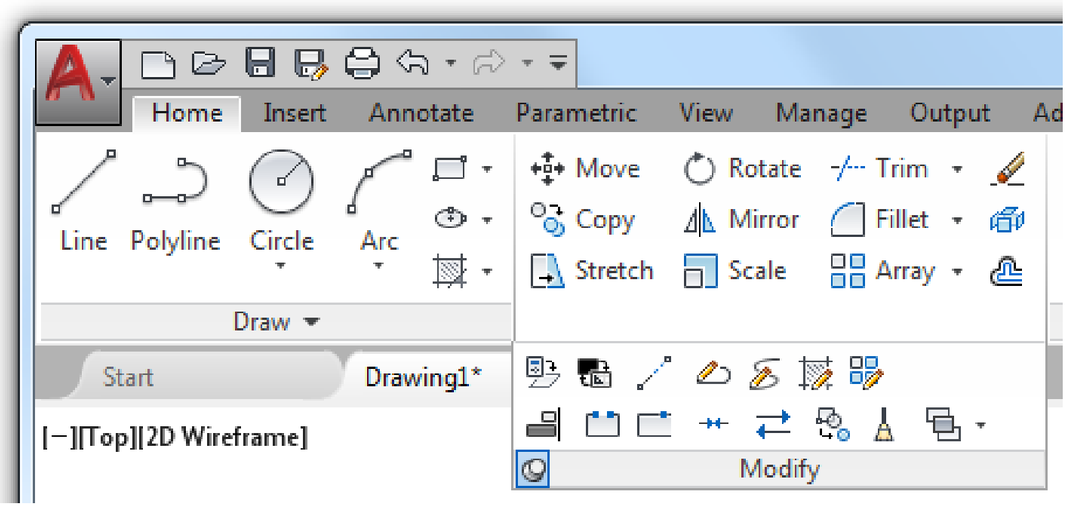
Do exercise “E4 - Create a Quick Access Toolbar”

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:

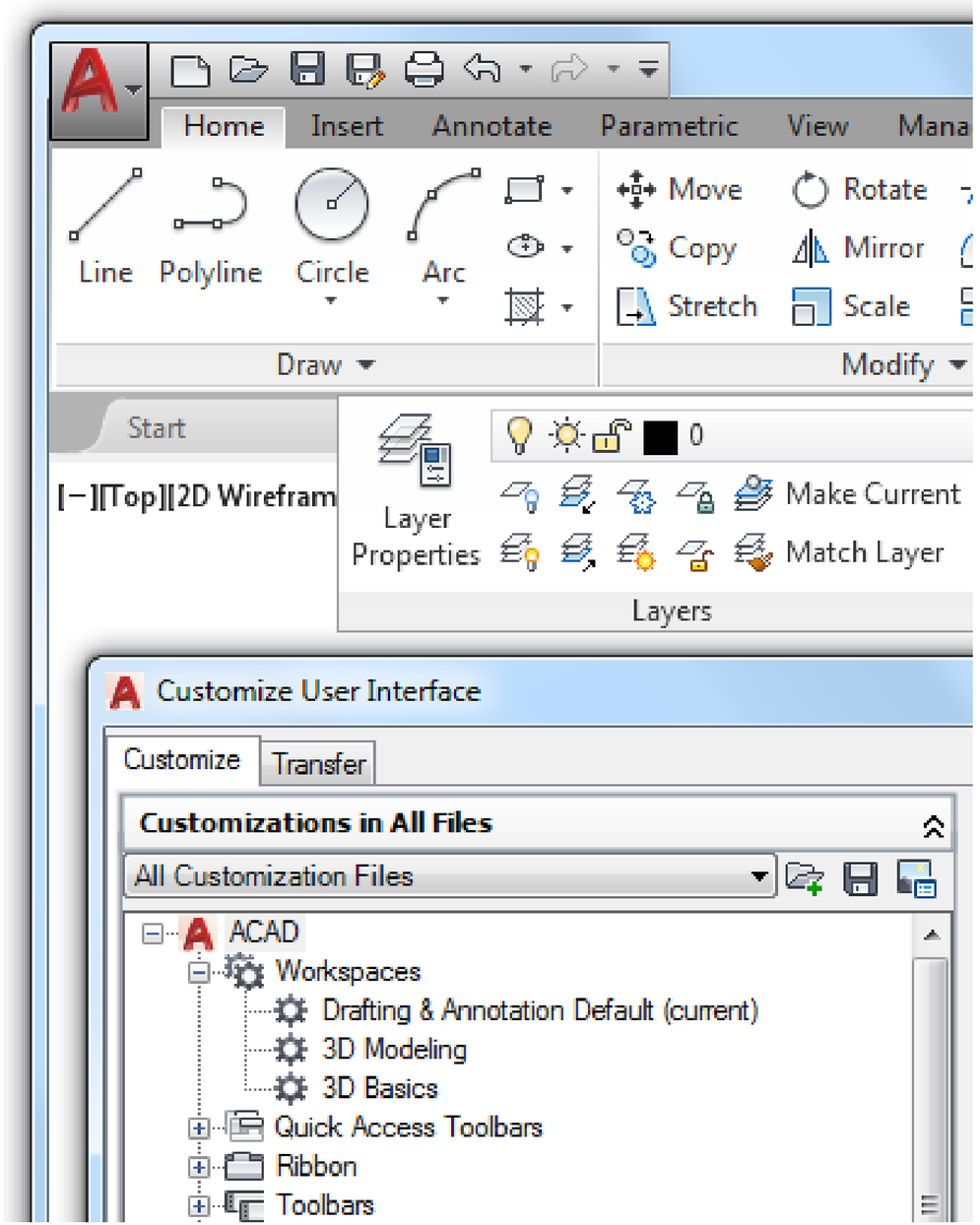
- Creating and editing objects
- Working w/ blocks and references
- Adding annotation
- Outputting drawings

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

Ribbon

Can be customized by:

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



Ribbon

To create ribbon panels and tabs, you need to:

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 workspace current.

Ribbon

Do 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 and add a ribbon panel
- Assign a ribbon tab to a workspace

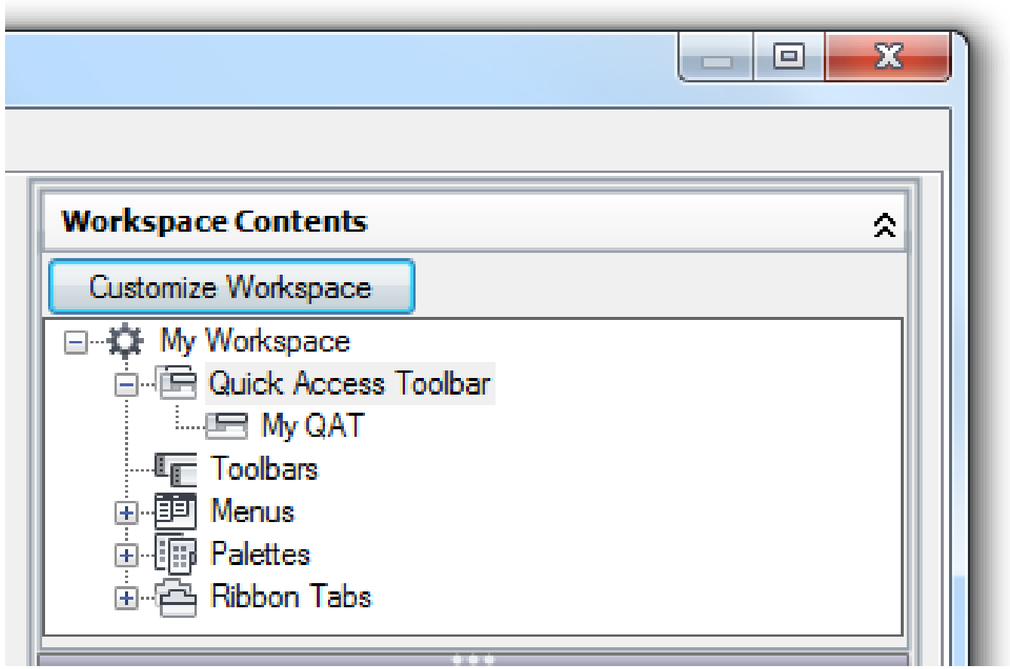
Workspaces

Workspaces

Control the visibility and placement of user interface elements.

Some of the user interface elements controlled are:

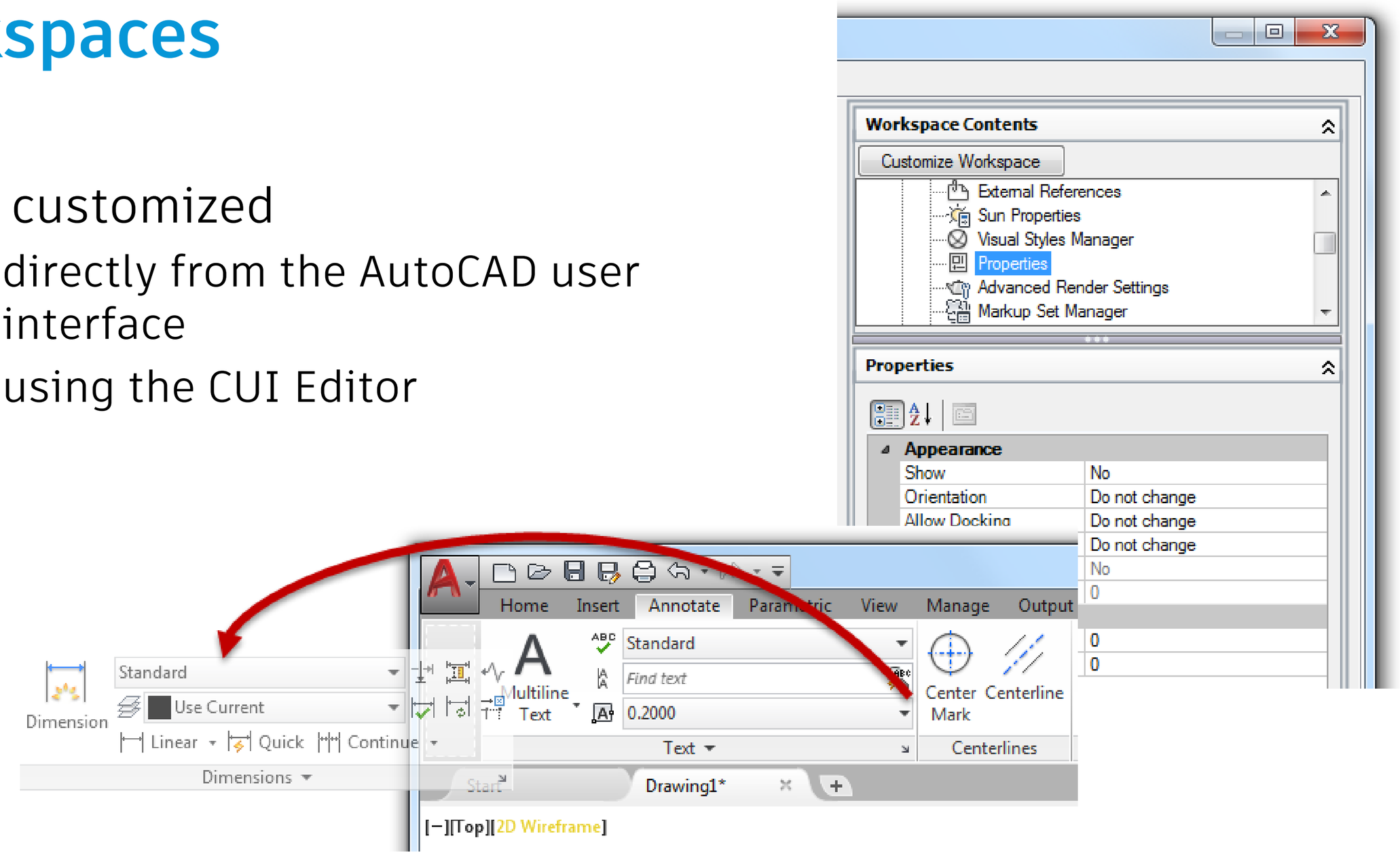
- Quick Access toolbar (QAT)
- Ribbon tabs
- “Classic” toolbars
- Pull-down menus
- Palettes



Workspaces

Can be customized

- directly from the AutoCAD user interface
- using the CUI Editor



Ribbon

To create a workspace, you need to:

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 workspace current.

Workspaces

Do exercise “E6 - Modify and Create a New 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

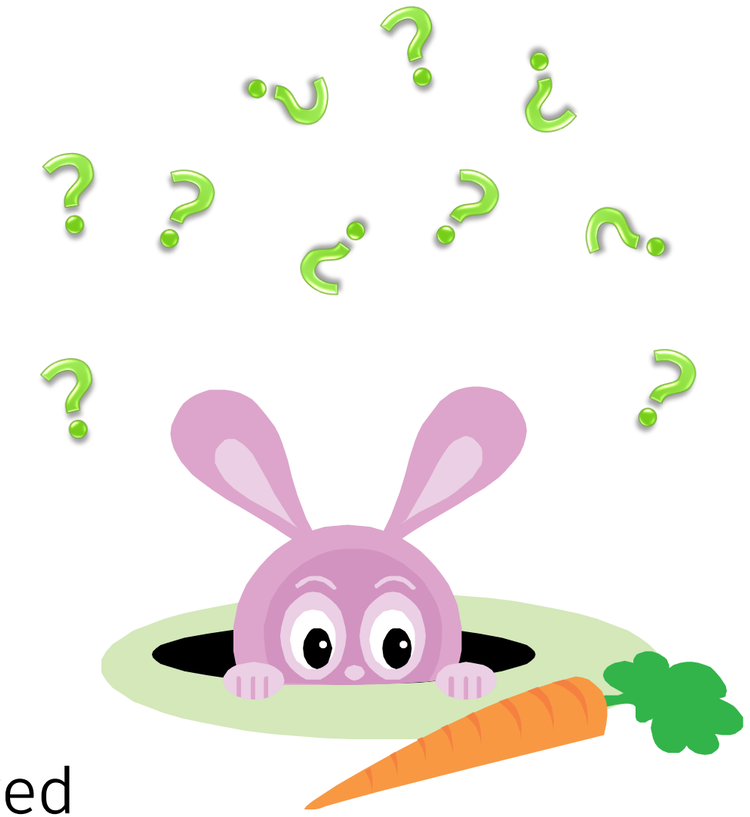
Final Thoughts and Questions

Customization can:

- Enhance productivity
- Improve or introduce new workflows

Programming has many similarities to the rabbit hole in Lewis Caroll's *Alice's Adventures in Wonderland*. 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