Click My Ride: Customizing Autodesk® AutoCAD® for How You Work

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AC5343-L Everyone approaches AutoCAD software differently, so in this hands-on lab we cover several approaches to customizing and launching commands. After creating a workspace, we will create a custom panel on the ribbon to hold your favorite commands, and we'll also see how to add the same commands to the Quick Access toolbar. As some of you know, I'm a Tool Palette junkie, so we'll see how a button on the Tool Palette may result in a better approach. For the keyboarders, we'll create a 1-line lisp, and we'll edit the ACAD.PGP file for aliases. But what about those rollover tips and the content of Quick Properties? We'll also check those out. In addition to some quality time in the Customize User Interface, we will also present tips along the way, all of which I hope will result in a more efficient and productive daily AutoCAD experience.

Learning Objectives

At the end of this class, you will be able to:

- Learn how to create a custom tab and panel on the ribbon

- Learn how to modify the content of Quick Properties

- Learn how to create a custom image for a custom button and add it to the Quick Access toolbar

- Learn how to create a one-line Lisp and load it at AutoCAD software startup

About the Speaker

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Create a Custom Ribbon Tab, then Add Favorite Commands to the Panel

There's a wonderful sense of accomplishment when see your own tab on the Ribbon! In the following series of exercises, you create your own custom tab with a panel that contains multiple customized elements, but first…

GOLD STAR TIP: Should things ever go sideways when you're customizing, you will find a copy of your version's original ACAD.CUIX in …
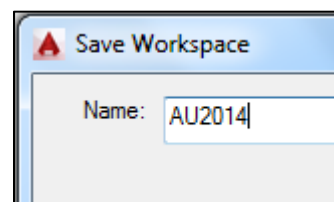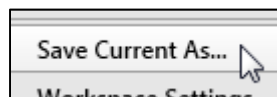
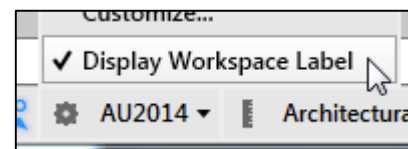*C:\Program Files\Autodesk\AutoCAD 201x\UserDataCache\en-us\Support*
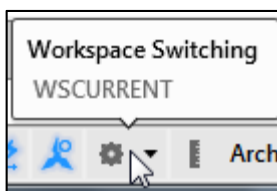
Now, just to make sure all our stations are the same, on the Status bar, click Workspace Switching, then click *Drafting & Annotation*.

How to Create a New Workspace

1. Click Workspace Switching, then click *Save Current As* and name it **AU2014**.

2. Click *Save*.

GOLD STAR TIP: To display the name of your workspace, click Workspace Switching >*Display Workspace Label*.
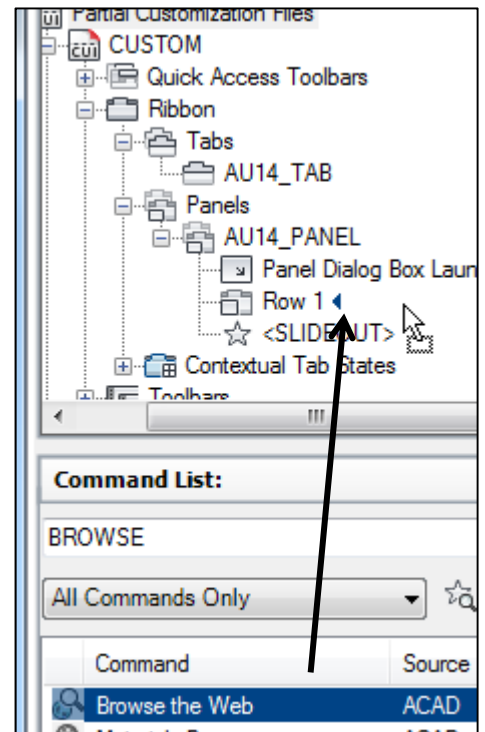
How to Create a New Tab on the Ribbon

1. With the desired workspace current, open the **CUI**.

2. Navigate to *Partial Customization Files >CUSTOM*, then expand *Ribbon*.

3. Right-click on *Tabs*, then click *New Tab* and enter a name. In this exercise, I'm naming it **AU14_TAB**.

4. Now right-click on *Panels*, then click *New Panel* and enter a name. In this exercise, my panel name is **AU14_PANEL.**
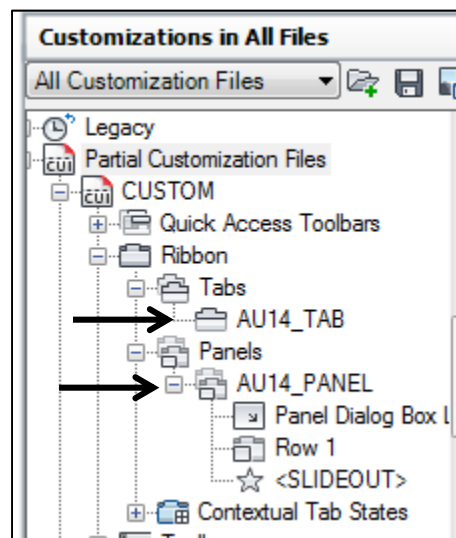
MEMO: Under the panel, you see three default components: Panel Dialog Box Launcher, Row 1, and <SLIDEOUT>.

5. To add a command to your AU14_PANEL, in the Command list, navigate to *Browse the Web*, then drag it up and drop it next to Row 1, which effectively makes a <u>copy</u> of the command.

6. Now click on *Browse the Web* on <u>your panel</u> to display the Properties. Set the following conditions:
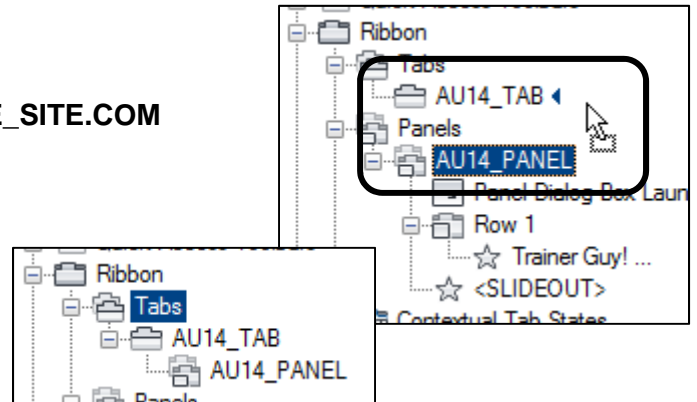
MEMO: The Macro should read:

^C^C_BROWSER;WWW.YOUR_FAVORITE_SITE.COM

7. To add your <u>PANEL</u> to your <u>TAB</u>, drag the AU14_PANEL, and drop it beside the AU14_TAB, as shown on the right.

   **…but DON'T click *OK* yet!**

How to Update the Workspace with the New AU14 TAB

1. Scroll up to *Workspaces*, then click the name of the current workspace and you see it listed under *Workspace Contents*.

2. Under Workspace Contents, click *Customize Workspace* and the text of the workspace elements turn blue.
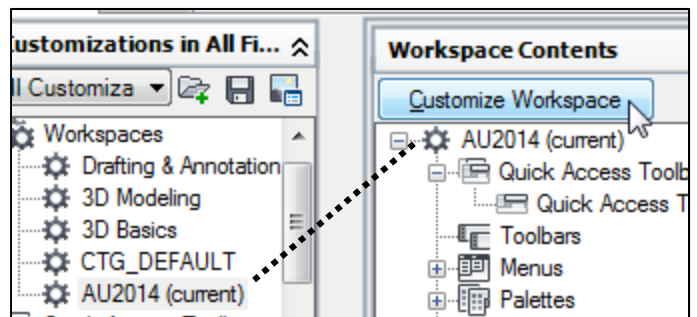
3. Next, under *Partial Customizations Files >CUSTOM*, put a check in the Tabs box to enable the check boxes for Tabs and Panels. The tab will be listed under Workspace Contents.
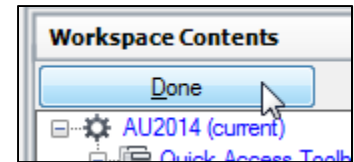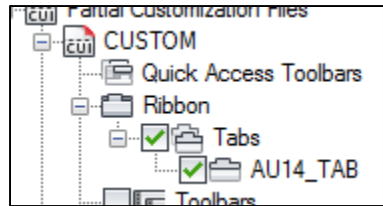
4. Now you can click *Done*, then click *OK* to apply and close the CUI ... and check out your AU14_TAB!

⭐ **GOLD STAR TIP:** You can drag your AU14_TAB to any position.

Add Another Row and Sub-Panels to Your Custom Panel

Q: How do they 'stack' the small tools?

A: They add commands to a new Sub-Panel.

How to Add a 'Stack' of Tools to a Panel

1. Open the **CUI**, then navigate to and expand the AU14_PANEL. [*Partial Customization Files >CUSTOM >Ribbon >Panels*].

2. Right-click on *Row 1*, then click *New Sub-Panel* and you will see 'Sub-Panel 1'. The unnamed node is the first row of that Sub-Panel.
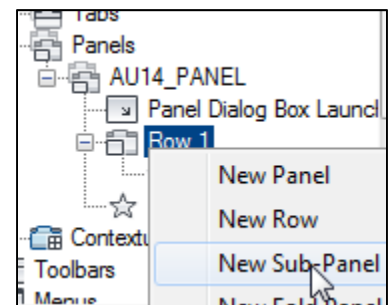
⭐ **GOLD STAR TIP:** To keep the tabs and rows from 'running away', drag the command to the right, between the CUI sections (I call it the 'Frontage Road'), go up even with your row, then go left and release the command where you want it.

3. From the Command list, drag *AutoCAD 360* up from the Command list and release it next to the unnamed node below *Sub-Panel 1*.
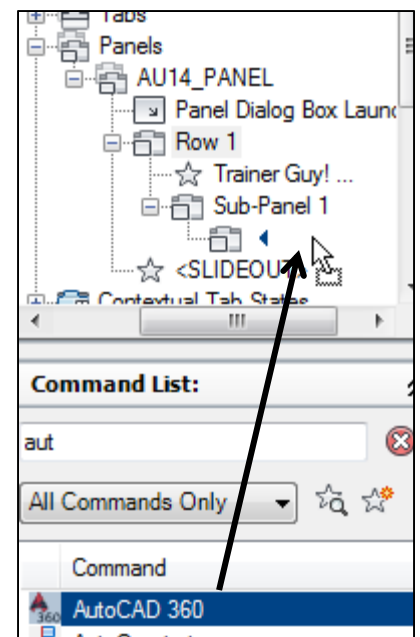
4. To add another row to the sub-panel, right-click on *Sub-Panel 1*, then click <u>New Row</u> which creates another unnamed node.

5. Now add a command to the second row. Navigate to and drag up *Customize, Interface* (the one that just reads **CUI** in the Command Display Name).

6. Add a third row to Sub-Panel 1 and bring up another command. I'm getting *Find….*
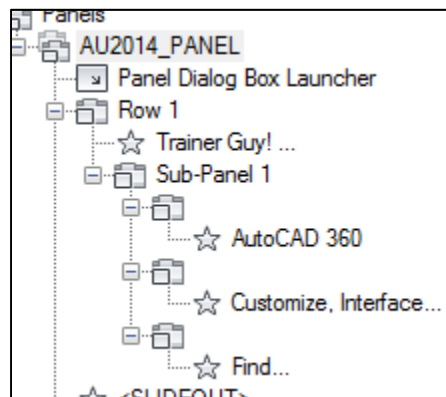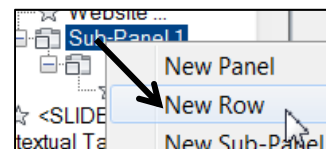
   MEMO: If you are editing a panel that is <u>already associated</u> <u>with a tab</u>, you do not need to re-assign that panel to the tab.

7. Click *OK* to close and save your edits to the CUI, then click your new tab to see the arrangement!

GOLD STAR TIP: To add another 'stack', repeat the steps above, i.e., add another 'Sub-panel', then add another three Rows.

So how about we copy an ***existing*** Panel and add it to our Tab?

Copy an Existing AutoCAD Panel to Your Custom Tab

This is simply a matter of copying an existing Panel to your Custom Panel, then drag it to your Custom Tab.

How to Add a Standard Panel to Your Custom Panel

1. Open the **CUI**, expand the <u>default</u> *Ribbon* node, then expand *Panels*.

2. Right click on 'Home – Layers', then click *Copy*.

3. Under *Partial Customization Files >CUSTOM*, expand <u>your</u> custom *Panels*.

4. Now right-click on *Panels*, then click *Paste*. You should now see the 'Home – Layers' panel displayed.
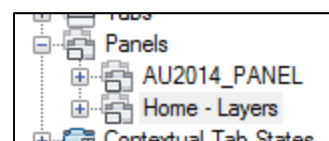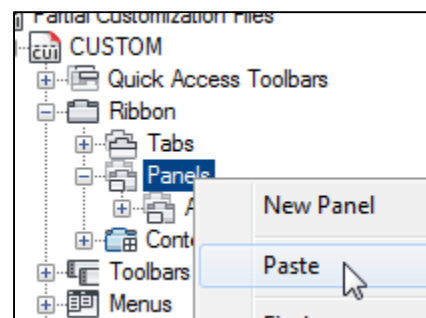
5. Expand the *Tabs* node, now drag the 'Home – Layers' panel up and release it beside your *AU14_Tab*.

6. Click *Apply* (just because).

7. Scroll up to *Workspaces*, then click the name of the current workspace and you see it listed under *Workspace Contents*.

8. Under Workspace Contents, click *Customize Workspace* and the text of the workspace elements turn blue.

9. Next, under *CUSTOM*, although there is already a check in the 'Tabs' box, uncheck it, then recheck the Tabs box. [In my preparation for this exercise, I found some anomalies, but unchecking and checking always seemed to work.]

10. Now click *Done*, then click *OK* ... and check out the additional panel on your AU14_TAB!
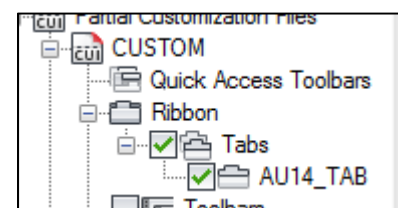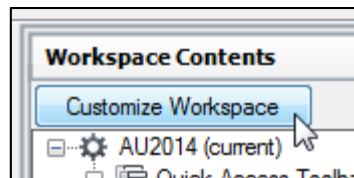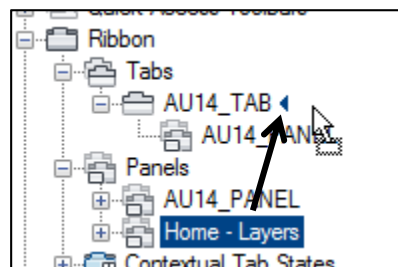
Create a Custom Image and Button for the Quick Access Toolbar

The Quick Access Toolbar is called that for a reason – it's quick. And it's very easy to customize. Most of the commands on the Ribbon can be added to the Quick Access Toolbar with a right-click, however …

… what about *New Layer* in the Layer Properties window?
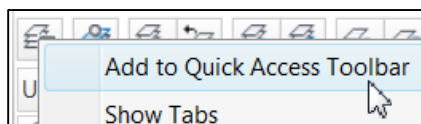
For the exercises in this section, open the drawing **Floor Plan Sample.DWG** from the folder *C:\Program Files\Autodesk\AutoCAD 2015\Sample\Database Connectivity.*

How to Create a New Command and a Button Image

1. Open the **CUI**, then in the Command list, scroll to the command "Layer, VP Freeze in All Viewports except Current"*.* This will be our guinea pig button

2. Right click on "Layer, VP Freeze..", then click *Duplicate,* (which is, effectively, a Copy **+** Paste). The copy will have an Element ID with an 'MMU' prefix.
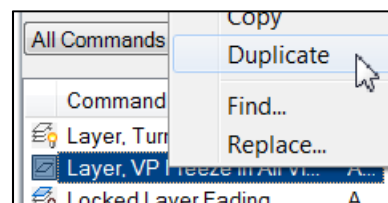
3. Change the information in the Properties to read as shown here:

^C^C-LA;M;AU14;;

Macro Legend:

^C^C

Cancels the current command

; (semi-colon)

Press [Enter]

-LA

Launches the Command line version of the Layer command which reads:

*Enter an option [?/**Make**/Set/New/Rename/ON/OFF/Color/Ltype/LWeight/TRansparency /MATerial/ Plot/Freeze/Thaw/LOck/Unlock/stAte/Description/rEconcile]:*

M

The Make option of the Layer command which creates and sets to Current the layer name that follows

AU14

The desired layer name

4. In the Button Image area, click *Edit* to open the Button Editor dialog box.

5. Check the box for Grid. Now we can have some fun …

Insights

- ◆ There's a color palette on the left.
- ◆ Of the four buttons across the top, the first one is the 'pixel pencil'. Add color one pixel at a time, or drag the pencil across multiple pixels.
- ◆ You have to drag the line tool, and the circle is created diagonally.
- ◆ You get *one* Undo, then it resets on your next action.
- ◆ Clear … does.

6. After creating your pixelated masterpiece, click *Save* and enter an image name, such as **AU14**. You will now see the name of the .BMP in the title bar of the Button Editor.

7. Click *Close* and you will see the image associated with your command in the list!
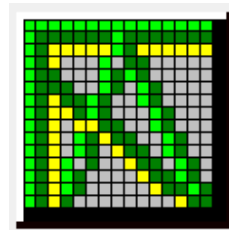
Now to add it to the Quick Access Toolbar …

How to Add Commands to the QAT in the CUI

1. In the CUI, expand *Quick Access Toolbars*, then expand *Quick Access Toolbar 1*.

2. Under the Command list, navigate to the command created in the previous exercise – *Layer 'AU14'* – then drag it up and drop it in the list of commands in the Quick Access Toolbar, as shown in the illustration.

3. Click *OK* to close the CUI … now test your button!

Connecting the Ribbon / QAT Dots

The code you added to the Macro for your customized Ribbon content – the Browse command in our opening exercise (p. 3) – is the <u>same code</u> you can add to the Macro for a button you put on the Quick Access Toolbar ...
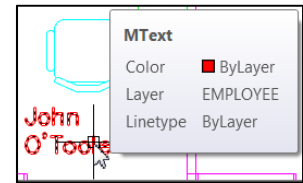
It just depends on how you want to 'Click Your Ride'!
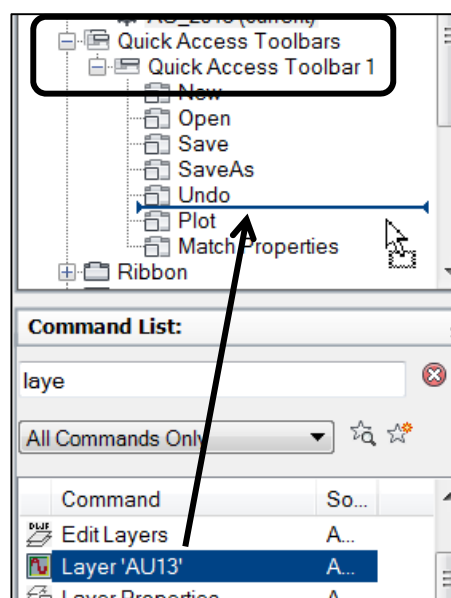
Modify the Content of Object Information

Properties, Quick Properties, or Rollover Tips?

Everyone's familiar with the Properties Window [Ctrl +1] which shows all the properties of the selected object(s), but the default condition of Quick Properties, and more specifically Rollover Tips (shown here), is a bit … anemic.

How to Include Additional Properties in Rollover Tips

1. Open the **CUI**.

2. Go down to *Partial Customization Files* >*CUSTOM*, then click *Rollover Tips* to display two additional vertical panels in the CUI.

3. At the top of the middle panel, click *Edit Object Type List* to open a list of object types.

4. Scroll down and check the box for <u>Mtext</u>, then click *OK* to add Mtext to the list.

5. On the right, select the ones properties that would be best for your drawings. My collection is *Layer*, *Style*, and *Text Height* (… and they're not alphabetical).

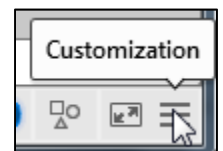6. Click *OK* to save your settings and close the CUI, then rollover an employee name to see your selected tips!
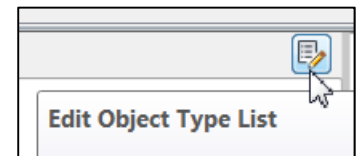
> **Q:** But what if you want to <u>edit</u> one of the properties?
> **A:** *Then customize Quick Properties.*

GOLD STAR TIP: To edit the content of the Status bar, click the Customization button in the bottom right corner to display the list (which will stay open until you click off of it!)

How to Add a Background Mask Toggle to Quick Properties

1. Click on any red employee name in the drawing.

2. On the Status bar, turn on Quick Properties.

3. To add a Background mask property to the list, click the *Customize* button at the top to open the CUI with Mtext already highlighted.

4. In the Properties section, scroll down and check the box for *Background Mask*.

5. Click *OK* to save your changes and close the CUI.
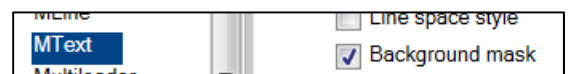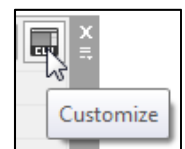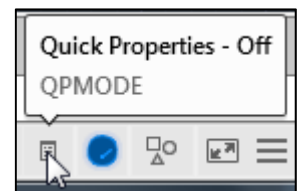
6. Now, click on an employee name to see Background mask in Quick Properties.

7. Click the Background mask option, then click the ellipsis button to open the Background Mask dialog box.

8. Check the box for *Use Background Mask* as well as the box for *Use Drawing Background Color*, as shown in the figure.

9. Click *OK* to close the Background Mask dialog box, then close Quick Properties. When you move the text on top of another object, you see the mask effect.
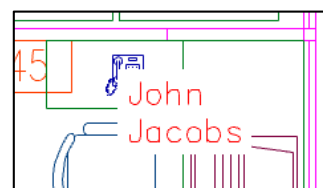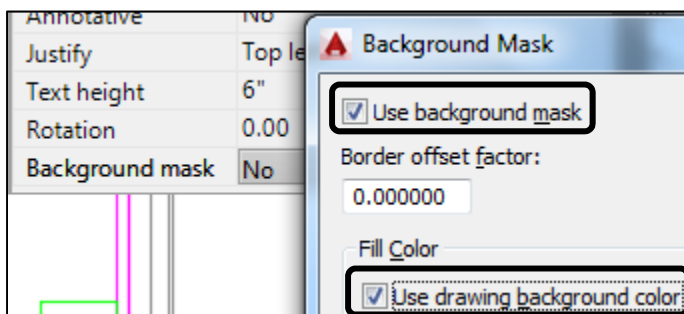
Modify the Aliases in ACAD.PGP

So far, we've accommodated the button-pickers and clickers. Now for the keyboard artists. For the veteran user who likes to **TYPE** most of your commands (and wants **C** to launch *Copy*), this is for you. There are a couple ways of going about this, but I like this one best.

How to Modify Your Command Aliases

1. On the *Manage* tab >*Customization* panel, click *Edit Aliases* to open the file ACAD.PGP in the Windows Notepad.

2. Scroll all the way to the bottom of the ACAD.PGP file where you will see a paragraph beginning with '`-- User Defined Command Aliases --`'.
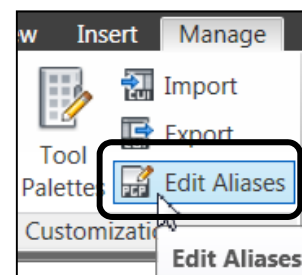
   MEMO: That note basically states that if you want your custom aliases to be migrated to the *next version* (if you still own that computer), make your edits below that paragraph and they will be automatically transferred and appended to the next version's alias list.

3. Put your cursor after the text that reads "`DO NOT REMOVE`", then press [Enter] a couple times.

4. Use the following context for your aliases:

<div align="center">

C,   *COPY

</div>

Which breaks down as...

 C,

The character you want to type, followed by a comma

[Tab]

Or however many spaces you want; Tab makes 'em line up

*COPY

An asterisk preceding the full name of the command to be launched

Examples

C,	***COPY**
CC,	***CIRCLE**
R,	***RECTANGLE**
RR,	***ROTATE**
Q,	***QSAVE**

GOLD STAR TIP: For commands starting with the same letter, use a single character for the command you use <u>most</u> often and a double character for the other one.
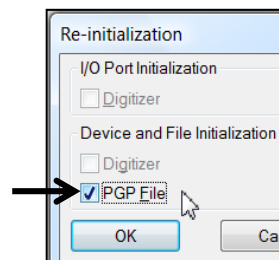
5. Close and *Save* your ACAD.PGP.

Initializing the ACAD.PGP File

Here's how to force AutoCAD to look at ACAD.PGP now that you have made these changes.

How to Make Your Aliases Take Effect Now

1. Type **REINIT** to open the Re-initialization dialog box.

2. Check the box for 'PGP File', then click *OK*.

3. Test your new alias(es)!

Create a One-Line AutoLISP® Routine and Load it at Startup

Back in the day, AutoLISP was the underlying programming engine of Autodesk's flagship product and continues to be integral to the software. The following review takes you one step past spelling L-I-S-P, but we all had to crawl before we could walk.

In this exercise, you create a one-line LISP routine to edit the PSLTSCALE value for all viewports of a layout tab.

MEMO: By default, external Lisp routine content <u>will supersede ACAD.PGP content</u>. For example, if 'P' is used to launch a Lisp routine, 'P' will no longer launch Pan (which is the alias for Pan in ACAD.PGP).

How to Write and Save a One-Line Lisp

1. Open Windows Notepad (<u>not</u> Word, it puts hidden characters in the header and footer).

2. First, it's always a good idea to identify what your routine is doing by adding a comment line at the beginning. Comment lines have a semi-colon as the first character on the line. Add something similar to the following as the first three lines in your notepad file.

;AU 2014 Lisp routines

;

;Set PSLTSCALE to <0> for All Viewports in a Layout Tab

3. Add the following text as the fourth line. It's not case-sensitive and there should be no preceding semi-colon:

(DEFUN C:P()(COMMAND "MSPACE" "PSLTSCALE" "0" "REGENALL")(PRINC))

Here's how all that stuff breaks down:

(

The first open parenthesis puts AutoCAD on 'hold' while you tell it what to do.

DEFUN

DE<u>fine</u> <u>FUN</u>ction. You're telling the Lisp routine what you're setting up. The space after is OK.

C:

 The following characters are to be typed at the `Command:` *line.*

 P (for this exercise)

 *The text that comes <u>after</u> **C:** is what you will type to 'run' the Lisp.*

()(

I call it 'the clutch'. Push it in.. **(** *Change the gear..* **)** *Let it out..* **(**   *Welcome to LISP.*

COMMAND

For all one line Lisps, you need to let AutoCAD know you are using Commands.

"COMMANDS" "AND/OR" "OPTIONS"

*All commands and options go in **quotes**. <u>**Yes, you can put a space between them.**</u>*

(PRINC)

Locking the door on the way out. Suppresses that 'nil' you see in some routines.

)

Resolve all the open parentheses.

In a single .LSP file, you can have as many routines as you want. For clarity and troubleshooting, however, I would put comment lines between them as we did here.

4. When finished adding your one-liners click *File >Save*, then navigate to AutoCAD's *..\Support* folder and name it **AU14_BASIC.LSP**

> **MAJOR MEMO:** You must enter the file extension of **.LSP**, don't use Notepad's TXT.

> **GOLD STAR TIP:** And although we didn't use it in the above exercise, double quotes **""** means press [Enter]. And the word **PAUSE** – no quotes necessary – is equivalent to the backslash in a Macro.

> *That barely wades into the ocean of Lisp … but you can do a lot of stuff from the beach.*

## Launching Your .LSP from the Startup Suite

To make your routines available whenever you open AutoCAD, add that .LSP file to the Startup Suite.

How to Add Your .LSP to the Startup Suite

1. Click *Load Application* [*Manage* tab *>Applications* panel] to open the Load/Unload Application dialog box. **AP** is the alias.

2. Click the *Startup Suite* suitcase at the bottom (or *Contents*) to open the Startup Suite dialog box.

3. At the bottom of the Startup Suite dialog box, click *Add*, then navigate to the .LSP file you created.

4. Select your .LSP file(s), then click *Open* to return to the Startup Suite dialog where you will see the file(s) listed.

5. Click *Close*, then *Close* out of the Load Application dialog box.

6. To make them work, you will need to close and re-launch AutoCAD.
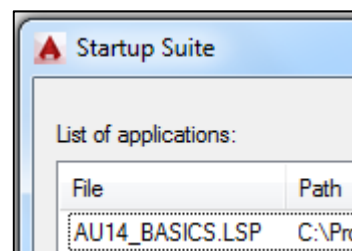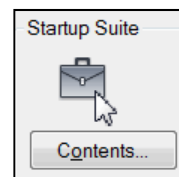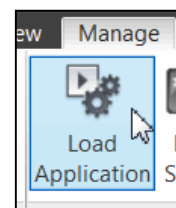
7. From the Application Menu, open the drawing **Floor Plan Sample.DWG**, then thaw all the layers.

8. Set the **LTSCALE** factor to **96**, then click Layout 1, and create two viewports.

9. Now type **P** to run your Lisp routine!
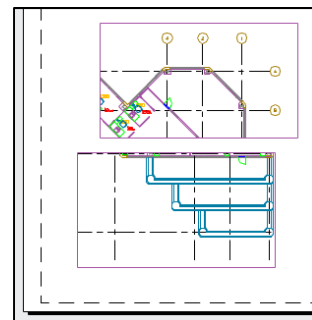
Macros-Made-Easy Using a Tool Palette

The Tool Palette continues to be my tool of choice for easy customization.

How to Add a Command to a Tool Palette

1. On the *View* tab, click *Tool Palettes* or hit Ctrl + 3.

2. Right click on the title bar of the Tool Palette, then click *New Palette* and give it a name (**AU2014**).

3. Right-click on the title bar, then click *Customize Commands* to open a collapsed version of the CUI.

4. In the Command list, navigate to Revision Cloud.

5. Now drag and drop Revision Cloud onto the tool palette.

6. Click *OK* (or *Close*) to close the CUI.

7. Go back to Model space, then create a new layer called **AU_REVISION**, and give it a Color, *but __don't__ make it current*.

8. Draw a rectangle around some workstations in the plan.

9. On your palette, click the Revision Cloud button, then configure the command as follows:
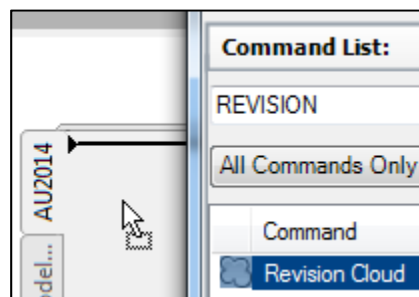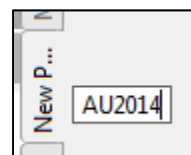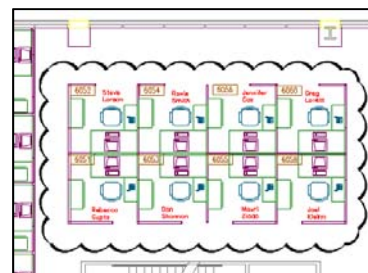
Minimum Arc Length: **42**

Maximum Arc Length: **42**

Style: *Calligraphy*

10. Press [Enter] for the <Object> option, then select the rectangle.

11. When prompted to reverse the cloud, press [Enter] for <No>.

Undo the revision cloud, then continue on with the next exercise.

How to Edit the Command String of Revision Cloud

1. Right-click on the Revision Cloud tool on the palette, then click *Properties.*

Here's what the Revision Cloud's Command String means:

^C^C

> *Cancel*

_REVCLOUD

> *The underscore means use the command's English language version.*

[space]

> *The space after the command is pressing [Enter]. Not a fan; delete the space.*

2. Edit the Command String to read as follows (it is not case sensitive; I did that so you could see it better):

^C^CREVCLOUD;A;42;42;S;C;O;\N

**Here's what the additional characters mean:**

; - Press [Enter]; it's easier to discern a semi-colon than a space

A - The *Arc* option of the Revcloud command

42 - Specifying the minimum arc length

42 - Specifying the maximum arc length

S - The *Style* option of the Revcloud command

C - The *Calligraphy* option

O - The *Object* option

**** - Pause for user response to the current prompt

N - <No> to reverse the direction

3. Modify the Color, Layer, and Linetype values, then click *OK.*
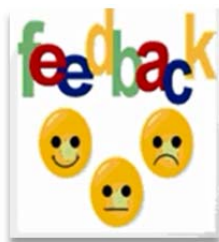
You now have a button, that …

A) launches the Revcloud command

B) specifies the Min/Max arc length

C) specifies the cloud Style, and

D) puts the Revcloud on the right layer, with the desired color and linetype …

<p style="text-align:center">... <u>even if the layer isn't in the drawing!!</u></p>
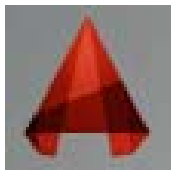
now go out and
click. your. ride!

Thank you for your time.
I hope this brief seminar proves worthwhile.

Please complete the Survey for this class via Survey Stations, email, or mobile device.

AU2015 Passes give out each day!

Please contact me if you have any questions
or would like to discuss training for your organization.
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