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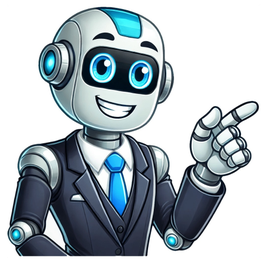

AutoLISP Files: Loading and Running Commands in AutoCAD LT Learn how to load and run commands from AutoLISP files in AutoCAD LT. AutoLISP is a powerful tool that helps automate workflows and extend functionality. Load an AutoLISP file at startup, opening of a drawing, or manually using the Load/Unload Applications dialog box. Although AutoLISP files can be used for various purposes, their exact commands may not always be immediately apparent, requiring the opening of an AutoLISP file to identify defined commands. This is typically done using Notepad, which displays part of the acadlt2024doc.lsp file as seen in the following image. Commands entered at the Command prompt are denoted by 'c:', followed by the command name. When storing AutoLISP files, it's recommended that they be kept in a shared location to ensure access for all team or company members. This can be achieved by: Storing them on a networked drive or cloud storage provider Synchronizing from a network folder to the local drive using a Windows login script/batch file during startup Marking the LSP files' folder as read-only helps protect against unexpected changes. Once an AutoLISP file storage location has been identified, inform AutoCAD LT of its whereabouts through the Support File Search Path and Trusted Locations settings in the Options dialog box's Files tab. These settings are necessary for: Loading other AutoLISP files using the 'load' function Identifying trusted locations to load LSP files To add a folder to these settings, right-click the drawing area in AutoCAD LT and select Options. In the Support File Search Path node of the Files tab, click Add > Browse and navigate to the designated folder, such as C:\AutoLISP Files. Select the folder and click Open to add it to the bottom of the list. The Trusted Locations node requires similar steps for adding the same folder. If prompted by the Trusted File Search Path – Security Concern message box, click Continue. It is essential to remember that marking the folders containing AutoLISP files as read-only provides an added layer of security. Some important settings for securing AutoCAD LT from malicious code and malware include adjusting the Security settings to control loading of executable programs, setting Trusted Folders where AutoCAD is allowed to load these files, and modifying other options like Automatic Loading. To access the Security settings in AutoCAD LT, right-click in the drawing area and select Options. Then, navigate to the System tab, under the Security panel, and click on Security Options. Adjusting the Options as needed can help secure the system by controlling loading of executable programs, trusted folders, and other security-related settings. Additionally, understanding how to load and manage AutoLISP files, and knowing basic AutoLISP functions like COMMAND and DEFUN, is essential for becoming more productive with AutoCAD LT. AutoCAD LT offers various functions to interact with system variables. The SETQ function retrieves the current value of a system variable, while the SETVAR function assigns a value to it. Now that you've learned these key functions, let's explore the command function. Before proceeding, note that command names can be prefixed with . (period) or _ (underscore), ensuring the provided command executes correctly. For instance, using CERCLE without an underscore would work in French but not English. To use the command function, type `(command "._circle" "5,5" 5)` at the Command prompt and press Enter to draw a circle with a radius of 5 units at 5,5 on the current layer. Next, type `(command "._zoom" "_e")` and press Enter to zoom to the extents of the drawing. An AutoLISP statement starts with an open parenthesis and ends with a closing one. Command names, options, and non-numeric values require double quotation marks. Balanced double quotation marks denote strings, whereas whole and decimal numbers don't need quotes unless part of a string. Coordinate values can be represented as strings or lists. Double quotation marks without values represent the Enter key press. To reuse AutoLISP statements efficiently, group them as custom commands with the defun function. Let's define a custom command named ZP that zooms to the previous view: Type `(defun c:zp ()` at the Command prompt and press Enter. Then, type `(command "._zoom" "_p")` and press Enter, followed by `)` to complete the definition. Note that in AutoLISP statements, string values require double quotation marks, whereas numeric values do not unless they're part of a string. Also, use a backslash (\) character before double quotation marks within strings to interpret them as literal characters. C:ZP output to the command. At the Command prompt, enter ZP. The previous view is restored. Use the ZOOM or PAN command to bring the circle back into the current view. At the Command prompt, enter ZP. The previous view is now restored. Even though you can define custom commands with the defun function to make reuse of AutoLISP statements easier, the commands you define are only available in drawings where they are defined and while drawing remains open. In next section, you'll learn how to create an AutoLISP file to store your custom AutoLISP commands along with other AutoLISP statements that you might want to execute upon loading of the AutoLISP file. You can learn more about five key functions along with hundreds of other available functions in AutoLISP Reference Guide. Now that you know how to enter AutoLISP expressions at the Command prompt, let's look at how we can create an AutoLISP file and store your AutoLISP expressions and custom commands to make them available when needed. AutoLISP files are plain ASCII text files that can be created with simple text editor such as Notepad, and have .lsp file extension. It is not recommended to use word processor application like Write or Word as it can introduce specialized characters and formatting that will cause problems when comes time to load the LSP file. In next exercises, you learn how to create an LSP file, add some AutoLISP statements to the LSP file, load the LSP file, and then try commands defined in the LSP file. In addition to five key functions mentioned earlier, you are also introduced to: The prompt and princ functions which are used to display and suppress messages in command line window. Comments which are statements within an LSP file that start with ; (semi-colon). These lines are there for informational purposes only and are not executed. A comment can be on its own line or after AutoLISP statement. Now let's create our own file and load it into AutoCAD LT: In Windows, click the Windows Start button > Windows Accessories > Notepad or in search box on task bar enter notepad. In Notepad, type following in editor area: ; Zoom commands (defun c:ze () (command "._zoom" "_e")) (defun c:zp () (command "._zoom" "_p")) ; Creates layer A-ANNO-REV, draws rectangle and converts rectangle to revision cloud with arc lengths based on half current value of LTSCALE system variable (defun c:rv () (setq old-layer (getvar "clayer")) (command "._-layer" "_m" "A-ANNO-REVCLD" "_c" "1" "" "") (command "._rectang" PAUSE PAUSE) (command "._revcloud" "_a" (/ (getvar "ltscale") 2) "" "_o" "_l" "_n") (setvar "clayer" old-layer) ) ; Display general message in command line upon load (prompt "Loaded MyFirst.lsp") (princ) On menu bar, click File > Save As. In Save As dialog box, navigate to C:\AutoLISP Files folder. In File name text box, type myfirst.lsp. Click Save as Type drop-down list and select All Files (*.*). Click Encoding drop-down list and select ANSI. If programs need to utilize Unicode characters, select UTF-8. Click Save. Now that you have created the file, instead of using Load/Unload Application dialog box that is displayed with APPLOAD command, you will load LSP file using File Explorer. In Windows, right-click on Windows Start button and select File Explorer. AutoCAD LT File Loading and Startup Suite Configuration To load a MyFirst.lsp file into an AutoCAD LT drawing, open the drawing and click and drag the LSP file over the drawing area. Release the mouse button to load the file. Once loaded, you can view the loaded file in the command line window history. To specify two points for the rectangular revision cloud, enter RV at the Command prompt. The revision cloud is displayed on layer A-ANNO-REVCLD and can be viewed from the Layers panel or Properties palettes. The Load/Unload Application dialog box allows you to manually load AutoLISP files as needed or automatically load them upon opening a new drawing file. To specify which AutoLISP files to automatically load, use the Startup Suite area of the Load/Unload Application dialog box. Here are the steps: 1. Open AutoCAD LT and click Manage tab > Applications panel > Load Application. 2. In the Load/Unload Application dialog box, under Startup Suite section, click Contents. 3. Click Add and browse to select the AutoLISP file you want to load automatically. 4. If using myfirst.lsp, add it now but remove it later if needed. AutoCAD LT looks for specific four files with names acadlt.lsp, acadltdoc.lsp, acadlt2024.lsp, and acadltdoc2024.lsp when started or a drawing is created/opened. These files help configure the AutoCAD LT environment and make commands available upon creation or opening of a drawing. Files like any other LSP files, these two automatically loaded under previously mentioned contexts. These files can load other AutoLISP files using `load` function, execute statements during loading, and define command definitions ready for use after a drawing is created or opened. The `load` function takes two parameters: the required file to load and an optional message if not found in support file search paths of AutoCAD LT. See "Manage and Secure AutoLISP Files" for setting up these paths. The following steps explain creating `acadltdoc.lsp`, adding AutoLISP statements, loading it into AutoCAD LT, and verifying the file was loaded. In Notepad, type: `(setvar "osmode" 4133) (setvar "orthomode" 1)` to set Object Snap and Ortho modes; `(load "myfirst.lsp" "MyFirst.lsp file couldn't be found")` to load an LSP file; and `(prompt "Loading my custom programs") (princ)` to display a message. Save the file as `acadltdoc.lsp` in C:\AutoLISP Files. In AutoCAD LT 2024, create or open a drawing file, press F2, and verify the message "Loading my custom programs". The Ortho Mode and 2D Object Snap buttons should be enabled after creating or opening another drawing file. Plug-in bundles are folders with a `PackageContents.xml` file that informs AutoCAD LT of the files and settings. While not required for loading AutoLISP, they can make managing easier and are safer than using `acadlt.lsp` or `acadltdoc.lsp`. Plug-ins can also configure AutoCAD LT without the Options dialog box. Automating workflows can improve productivity and reduce repetitive tasks. Learning five key functions in AutoLISP programming can be valuable in everyday workflows. Here are frequently used commands and system variables: `APPAUTOLOADER` for listing or reloading plug-ins, and `APPLOAD` for loading and unloading applications. The system defines which applications to start at launch and offers customization options for program settings and security restrictions on executable files. It also allows application-defined commands to override internal ones. Various system variables control different aspects of the program, such as whether to load specific files into each drawing or just the first one opened in a session. Other variables determine when plug-in applications are loaded, set the current layer, control command line displays, and manage dialog box appearances. Some variables suppress file navigation dialog boxes or message displays under certain conditions. The program also constrains cursor movement, sets running object snaps, restricts executable file loading to trusted folders, and evaluates text strings entered with specific commands. Additionally, it specifies which folders have permission to load and execute code-containing files, with some settings locked by administrators. These variables are saved in either the registry or the drawing, with default values provided for each. Controls include loading acad.lsp files into drawings, customizing program settings, and setting security options for executable files. Other controls manage layer settings, command line updates, dialog box displays, and object snap settings, providing a range of customization options for users.

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