

AutoLISP Has a New Home: Get to Know Visual Studio Code

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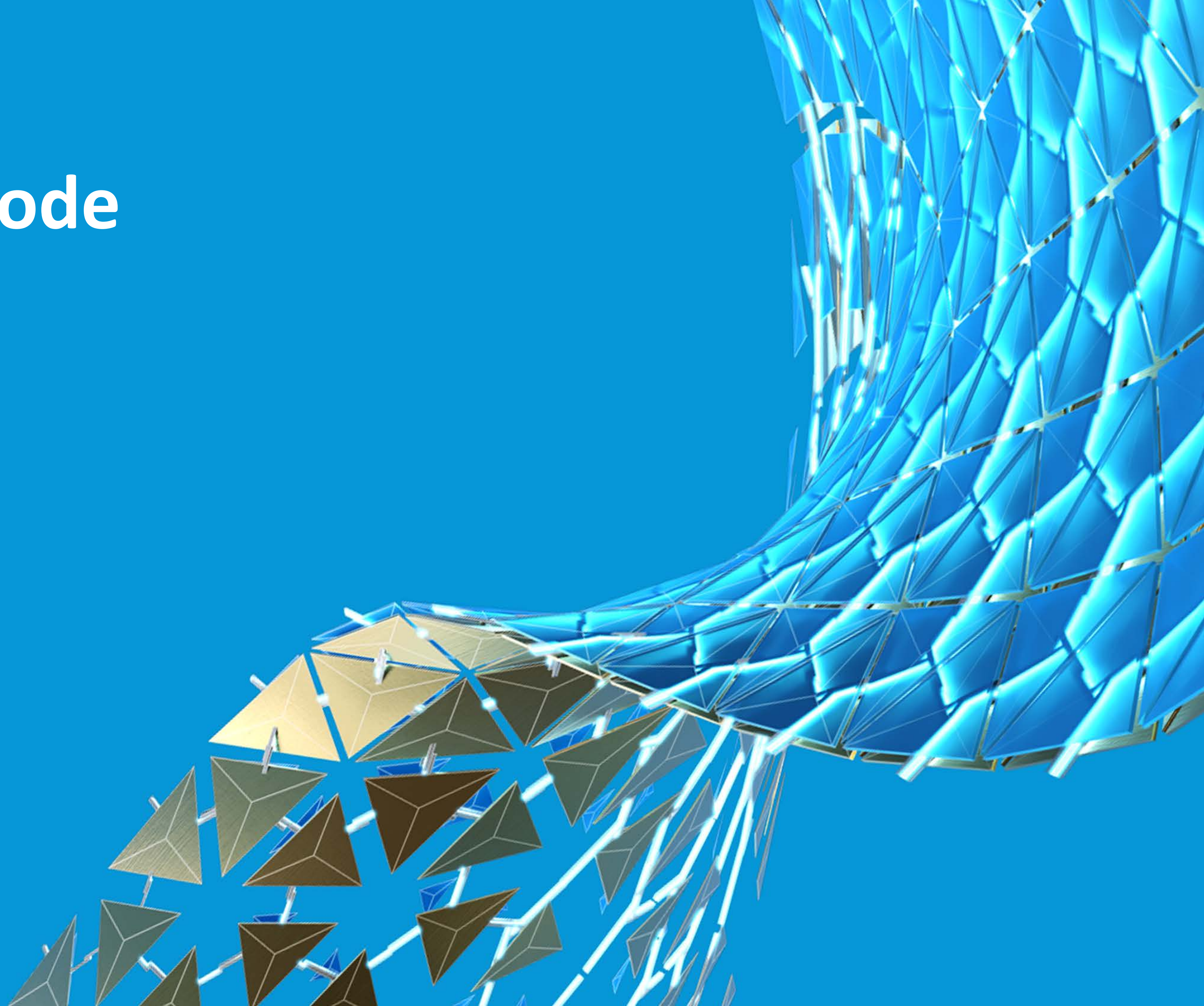
Former Designer turned Trainer & Consultant

**Senior Application Engineer/Developer for
ECE Design**

Learning Objectives

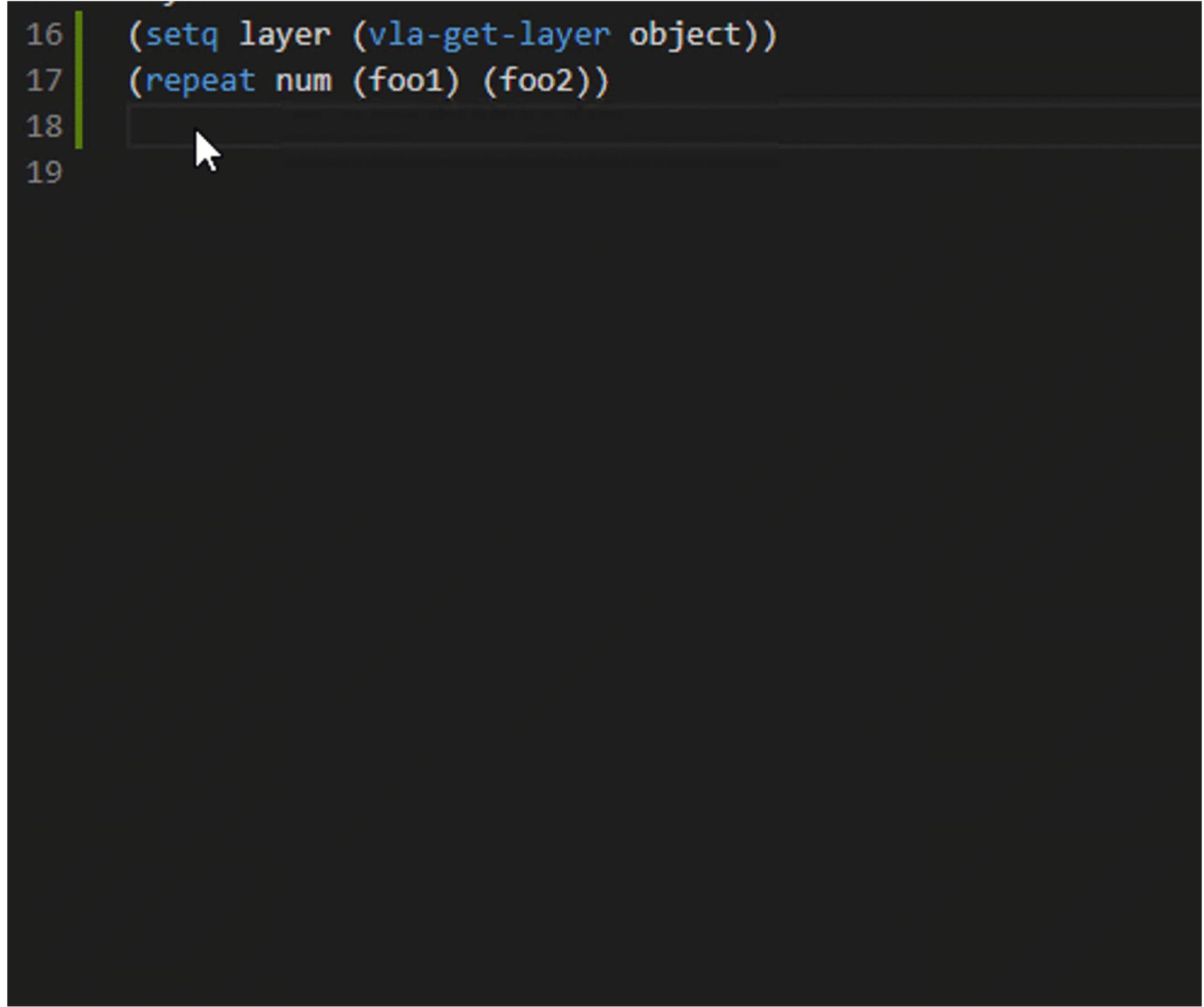
- Learn how to implement Visual Studio Code for AutoLISP.
- Learn how to develop code efficiently with IntelliSense and Code Snippets.
- Learn how to create custom code snippets.
- Learn how to debug AutoLISP code effectively.

Why use VS Code



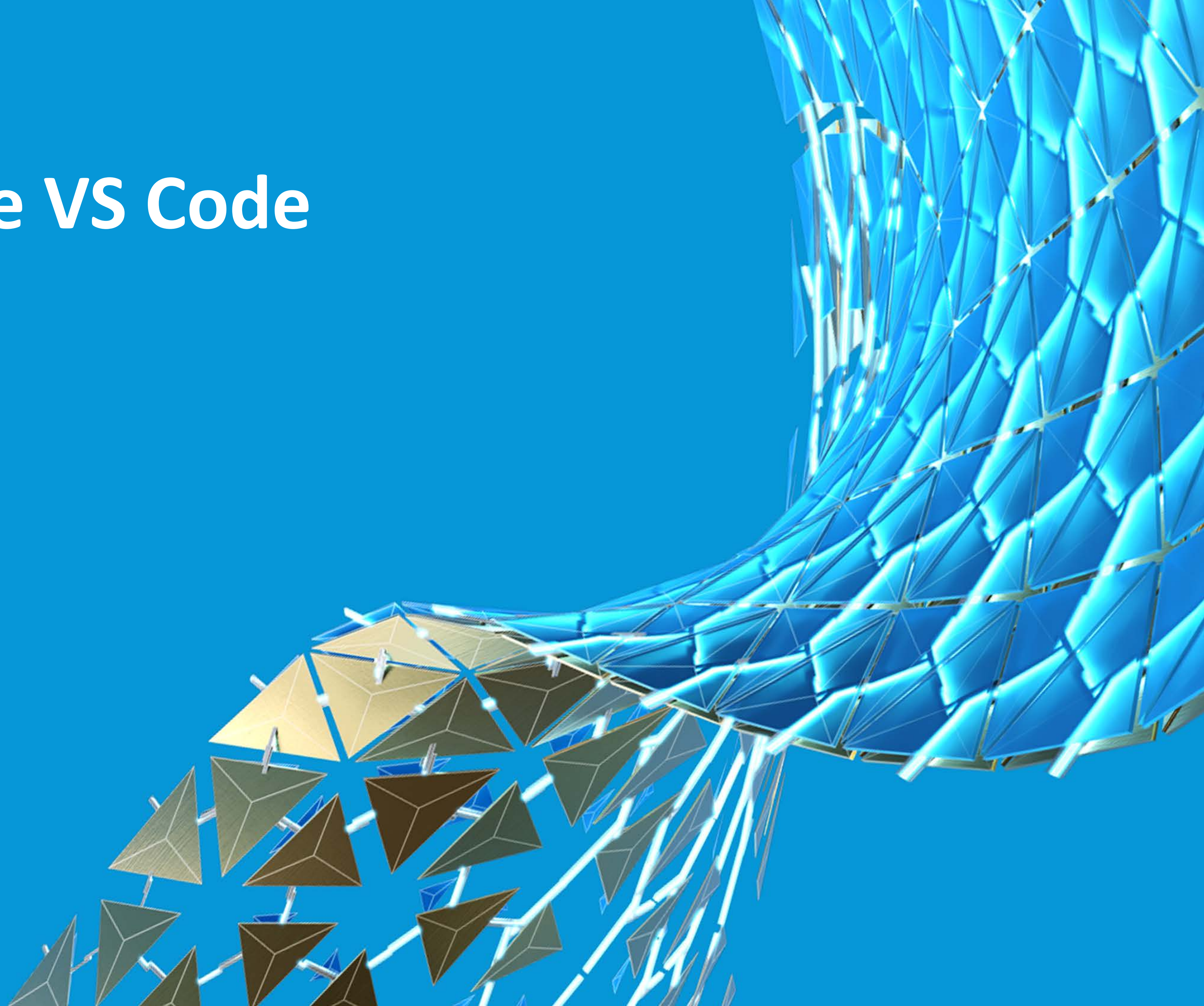
Benefits of VS Code

- IntelliSense & Snippets
- Keyboard Shortcuts
- Extensions
- Version Control
- Open Source
- It's the future

A screenshot of the Visual Studio Code editor interface. The editor has a dark theme. On the left, a vertical line of numbers indicates line numbers 16, 17, 18, and 19. The code on line 16 is `(setq layer (vla-get-layer object))`. On line 17, the code is `(repeat num (foo1) (foo2))`. On line 18, there is a closing parenthesis `)`. A mouse cursor is positioned at the end of line 18, and a small white box highlights the closing parenthesis, demonstrating the AutoClosingBrackets extension's functionality. Line 19 is empty.

```
16 (setq layer (vla-get-layer object))
17 (repeat num (foo1) (foo2))
18 )
19
```


Install and use VS Code



Install Wizard

Autodesk makes it easy to start with VS Code with their Wizard

- Choose Microsoft Visual Studio Code and the AutoCAD AutoLISP Extension
- If VS Code is not installed, you are prompted to download and install
- If the AutoCAD AutoLISP Extension is not installed, you are prompted to download and install

AutoLISP – Default Environment Not Set

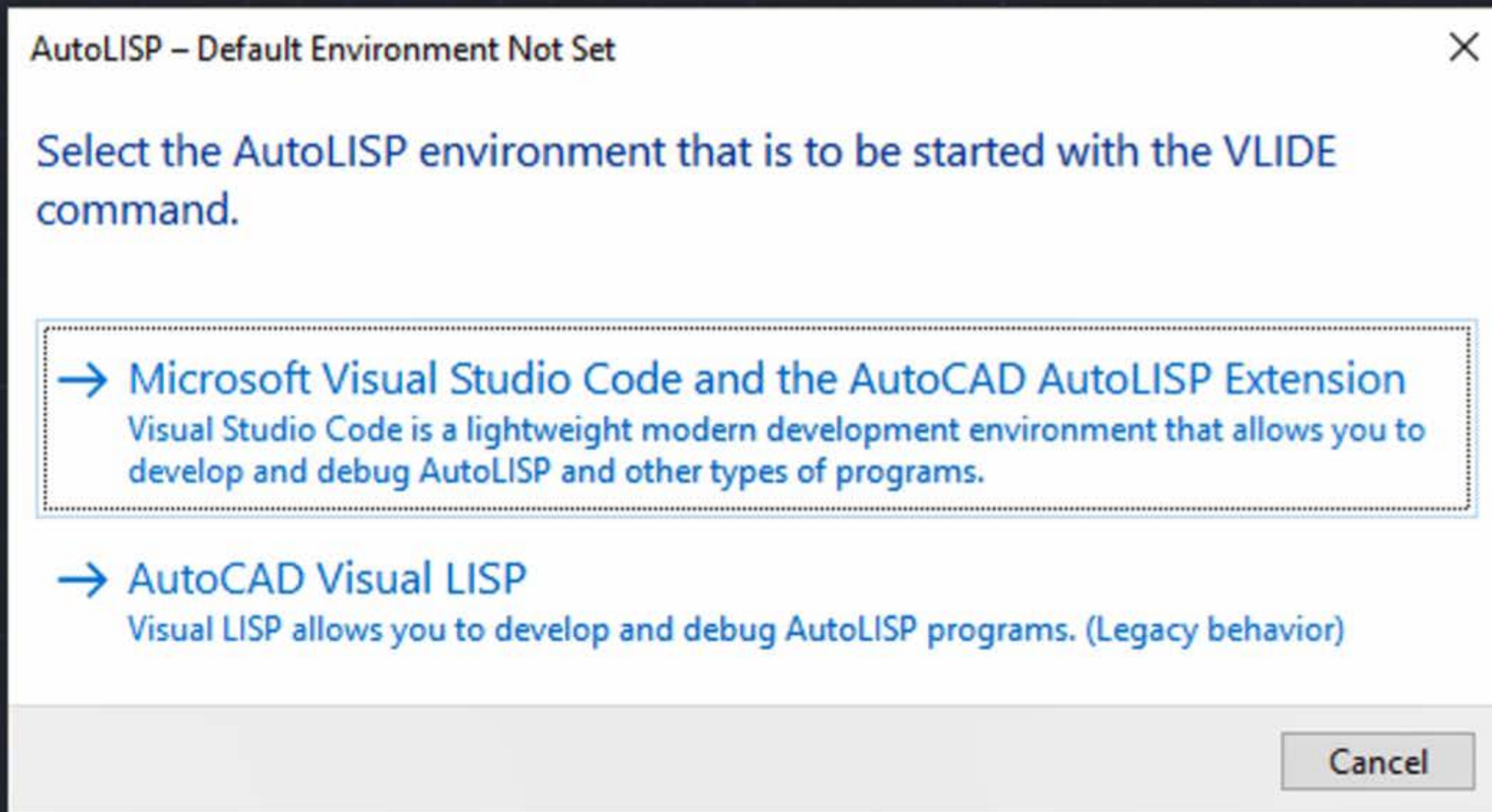


Select the AutoLISP environment that is to be started with the VLIDE command.

→ Microsoft Visual Studio Code and the AutoCAD AutoLISP Extension
Visual Studio Code is a lightweight modern development environment that allows you to develop and debug AutoLISP and other types of programs.

→ AutoCAD Visual LISP
Visual LISP allows you to develop and debug AutoLISP programs. (Legacy behavior)

Cancel



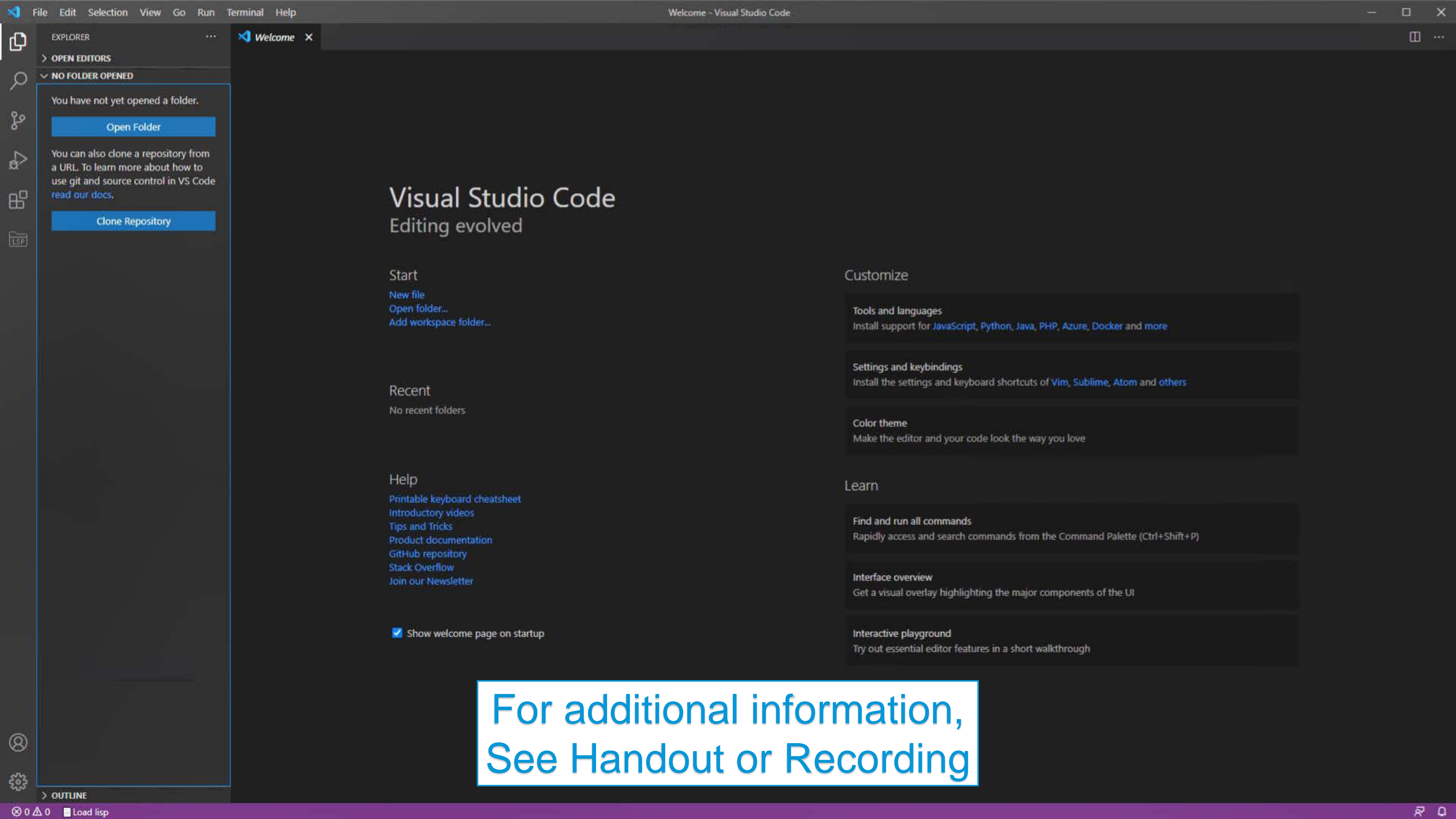
For additional information,
See Handout or Recording

Install Manually

Switching to use Visual Studio Code

- LISPSYS
 - 0 = VL IDE
 - 1 = Compiles Code for 2021 and *later*
 - 2 = Compiles Code for 2021 and *previous*
- Download and Install VS Code:
 - <https://code.visualstudio.com/>
- Download and Install AutoLISP Extension
 - <https://marketplace.visualstudio.com/items?itemName=Autodesk.autolispext>

Enter new value for LISPSYS <0>: 2



Visual Studio Code

Editing evolved

Start

New file
Open folder...
Add workspace folder...

Recent

No recent folders

Help

Printable keyboard cheatsheet
Introductory videos
Tips and Tricks
Product documentation
GitHub repository
Stack Overflow
Join our Newsletter

☒ Show welcome page on startup

Customize

Tools and languages
Install support for [JavaScript](#), [Python](#), [Java](#), [PHP](#), [Azure](#), [Docker](#) and [more](#)

Settings and keybindings
Install the settings and keyboard shortcuts of [Vim](#), [Sublime](#), [Atom](#) and [others](#)

Color theme
Make the editor and your code look the way you love

Learn

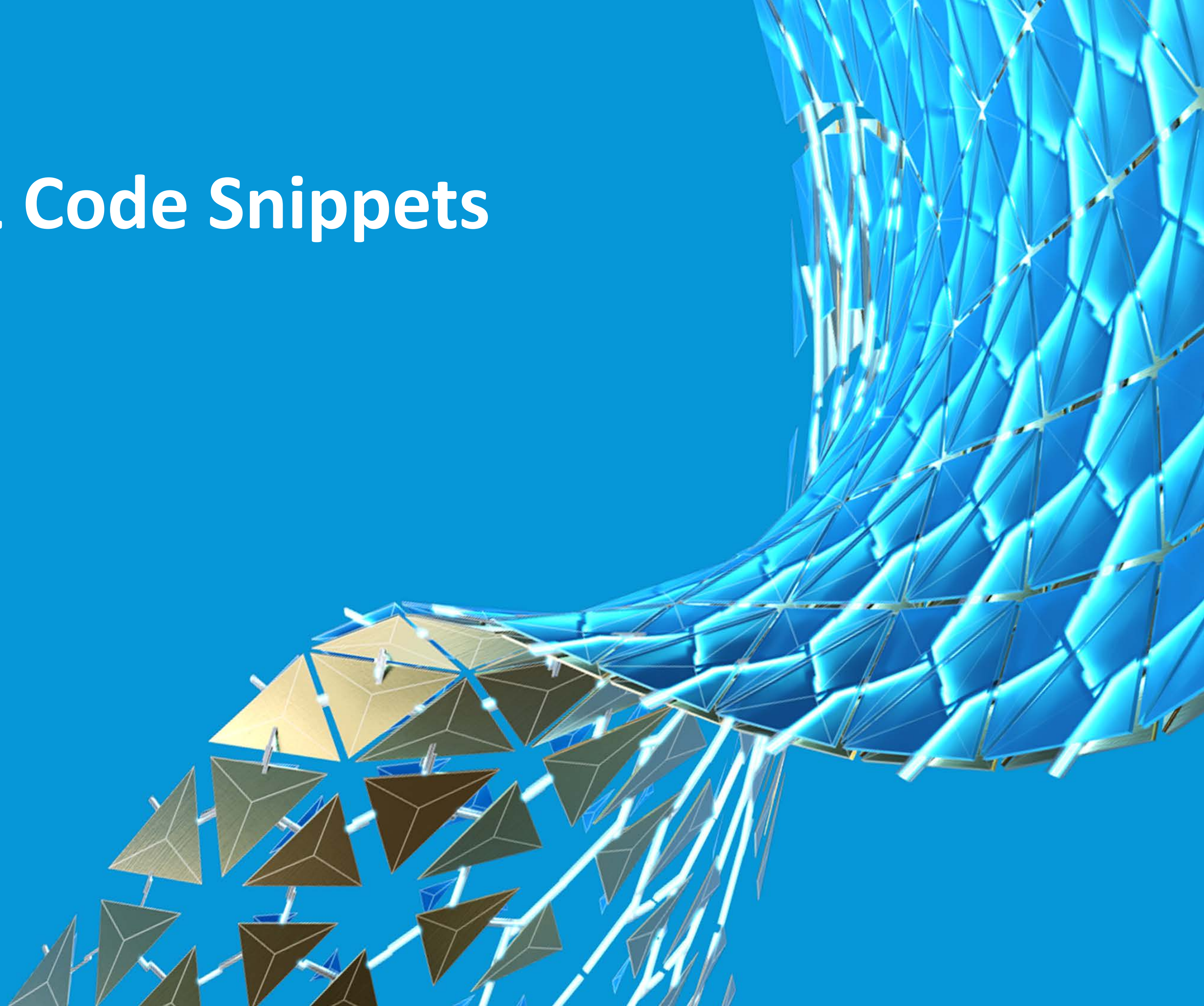
Find and run all commands
Rapidly access and search commands from the Command Palette (Ctrl+Shift+P)

Interface overview
Get a visual overlay highlighting the major components of the UI

Interactive playground
Try out essential editor features in a short walkthrough

For additional information,
See Handout or Recording













IntelliSense & Code Snippets



IntelliSense

- Find functions quickly

```
18 | vla|
```

-  `vla-activate`
-  `vla-add`
-  `vla-add3dface`
-  `vla-add3dmesh`
-  `vla-add3dpoly`
-  `vla-addarc`
-  `vla-addattribute`
-  `vla-addbox`
-  `vla-addcircle`
-  `vla-addcone`
-  `vla-addcustominfo`
-  `vla-addcustomobject`

Code Snippets

- Insert chunks of code quickly

<code>(defun</code>	define a lisp function
<code>(defun c:</code>	define a lisp function as AutoCAD command
<code>abs</code>	Returns the absolute value of a number
<code>alert</code>	Displays a dialog box containing an error or warning message
<code>alloc</code>	Sets the size of the segment to be used by the expand function
<code>angle</code>	Returns an angle in radians of a line defined by two endpoints
<code>append</code>	Takes any number of lists and appends them together as one list
<code>apply</code>	Passes a list of arguments to, and executes, a specified function
<code>arc</code>	arc command expression
<code>ascii</code>	Returns the conversion of the first character of a string into its Unicode character code (an integer)

Structure of a Code Snippet

"iterate active document":

Name

{

"prefix": "vforActiveDocument",

Prefix

"body":

Body

[

"(vlax-for layouts (vla-get-layouts (vla-get-activedocument (vlax-get-acad-object))))",

\t = tab

"\t(vlax-for object (vla-get-block layouts)",

"\t\t\${1:(GoDoGood)}",

"\t)",

")"

\${#:Prompt}

],

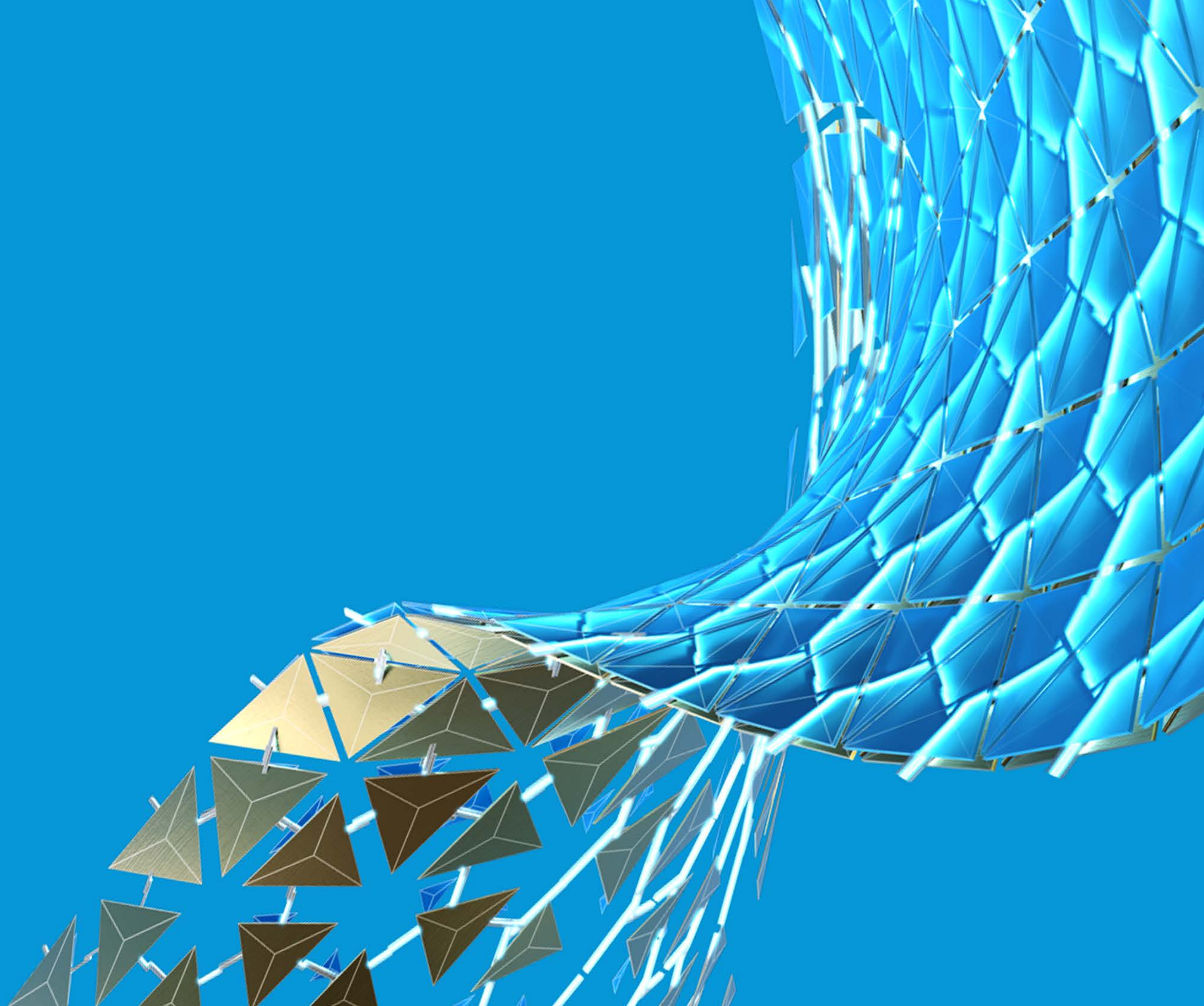
"description": "iterate the active document"

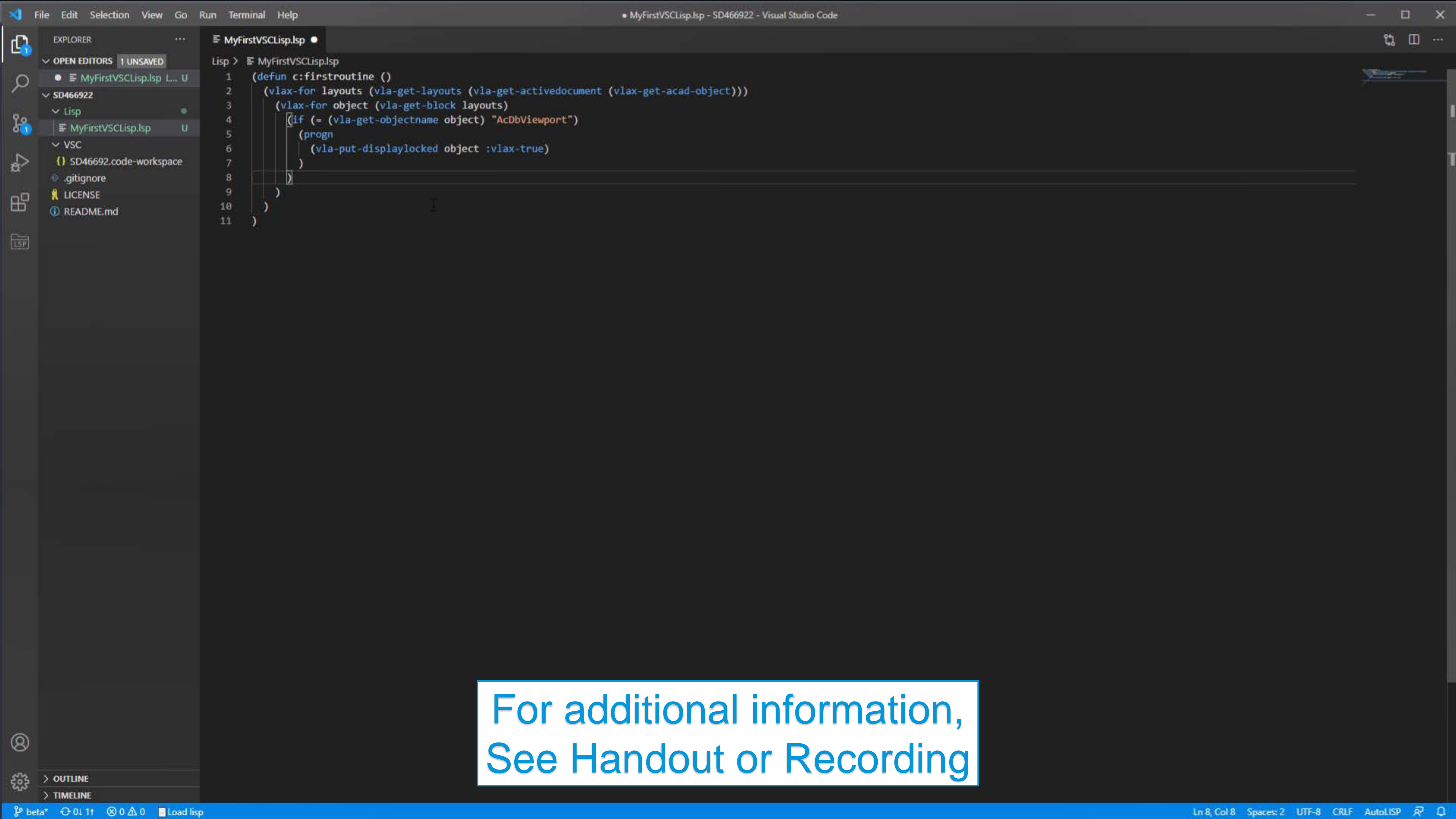
},

Description

Each snippet is separated by a comma. This is omitted for the last snippet

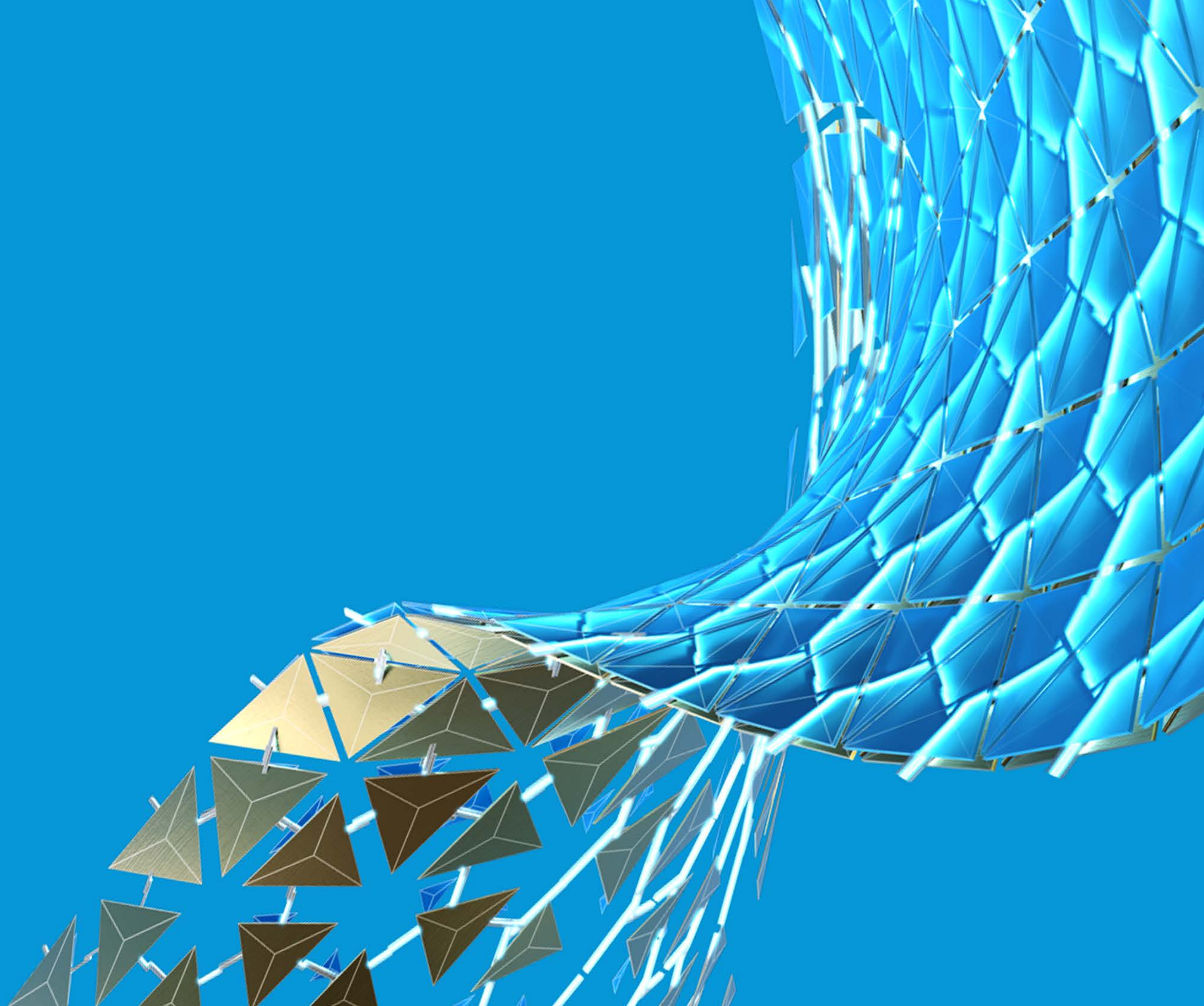
Writing Code





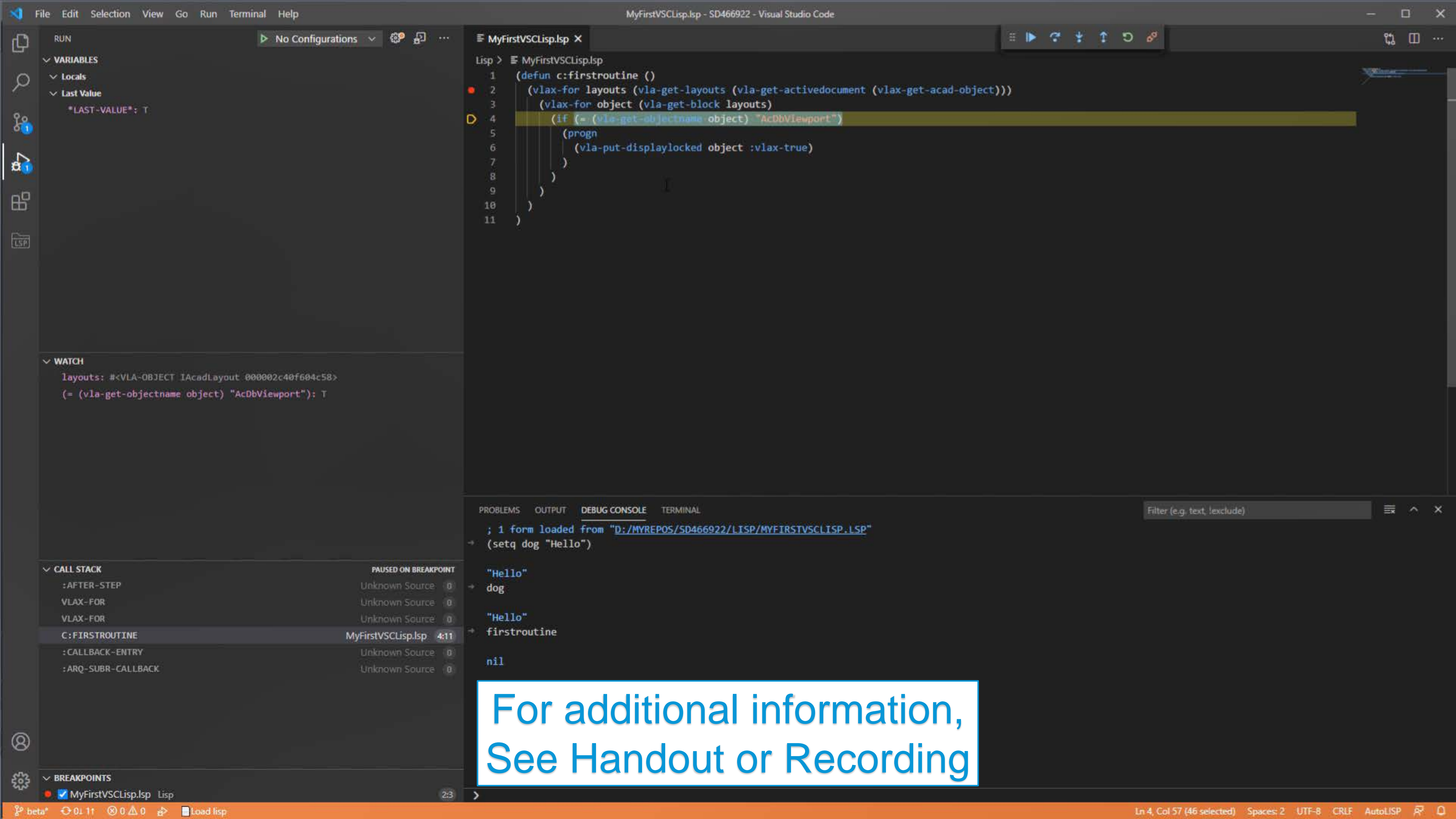
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Debugging



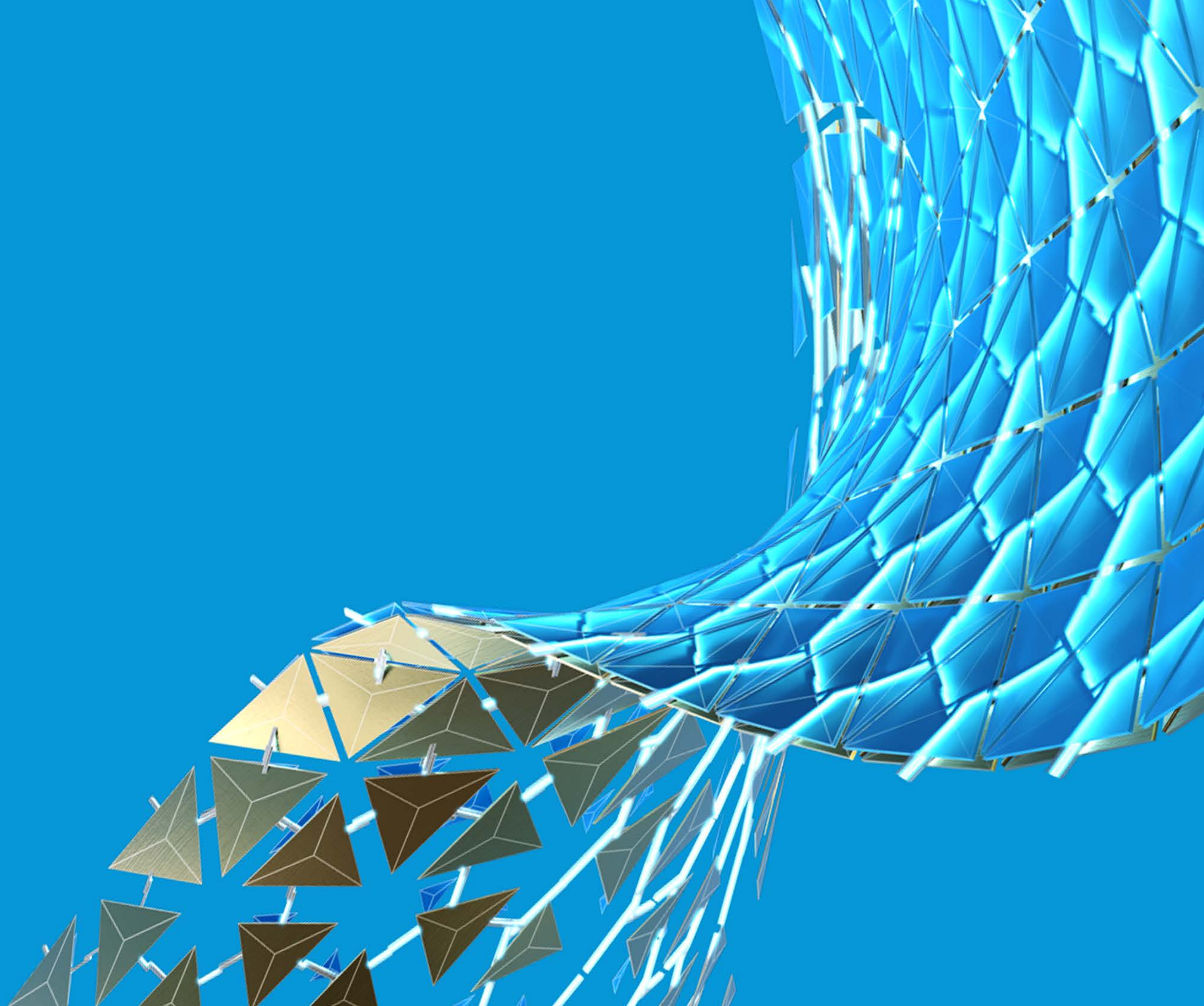
Debugging Types

- AutoLISP Debug: Attach
 - Attach Process
 - Windows: *acad*
 - Mac OS: *AutoCAD*
- AutoLISP Debug:Launch
 - Launch Parameters: */product PLNT3D /language "en-US" /P Plant3D_2021*
 - Launch Program: *C:\Program Files\Autodesk\AutoCAD 2021\acad.exe*



For additional information,
See Handout or Recording

Summary



Summary

- LISPSYS
 - 1 = Compiling 2021 and later
 - 2 = Compiling 2021 and previous
- Use and create Code Snippets
- Embrace the change and help drive the enhancements

Additional Information

- Download the handout and files from the class page
 - Or from here: <https://tinyurl.com/SD466922>
- Which Editor to Use for AutoLISP Development: Notepad to Visual Studio Code
- <https://www.amazon.com/AutoCAD-2021-VS-Code-update-ebook/dp/B088N7NHT3>

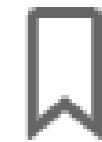
Q&A



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Live session during the week of AU 2020

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