

# Algorand Developer Bootcamp - Ep.1

A silhouette of a person standing on a hill against a vibrant, colorful sky filled with stars. The colors transition from deep purple at the top to orange and yellow at the bottom, suggesting a sunset or sunrise. The person is facing away from the viewer, looking towards the horizon.

Developer Onboarding with Algorand JavaScript SDK + AlgoKit



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@joe\_polny



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# Show me!



# templates + toolchain + web3 infrastructure



Auction



Crowdfunding



VRF Shuffle

```

MYPRO... > .vscode
smart_contracts
artifacts/hello...
application.py
approval.teal
clear.teal
contract.json
__init__.py
__main__.py
.env
.env.template
helloworld.py
lab.py
!.copier-answers.yml
.editorconfig
.gitattributes
.gitignore
poetry.lock
> OUTLINE
> TIMELINE
helloworld.py < myProject

from beaker.application import Application
from beaker.decorators import Authorize, delete, external
from pyteal import Approve, Bytes, Concat, Expr, Global
from pyteal.ast import abi

class HelloWorld(Application):
    @external(read_only=True)
    def hello(self, name: abi.String, *, output: abi.String) -> Expr:
        return output.set(Concat(Bytes("Hello, "), name.get()))

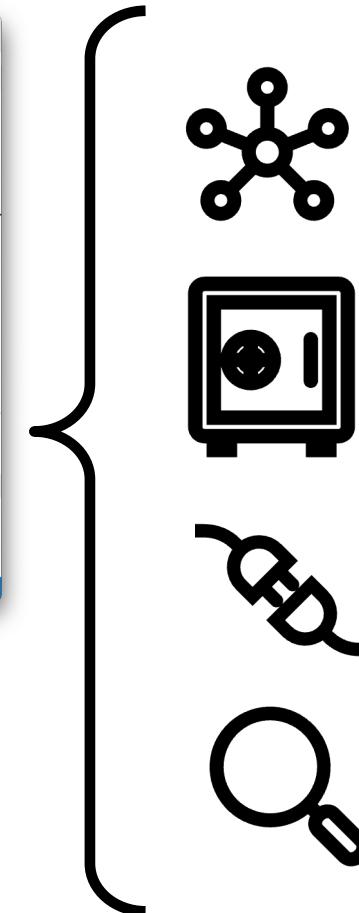
    @delete(authorize=Authorize.only(Global.creator_address()))
    def delete(self) -> Expr:
        return Approve()

1 from beaker.application import Application
2 from beaker.decorators import Authorize, delete, external
3 from pyteal import Approve, Bytes, Concat, Expr, Global
4 from pyteal.ast import abi
5
6
7 class HelloWorld(Application):
8     @external(read_only=True)
9     def hello(self, name: abi.String, *, output: abi.String) -> Expr:
10         return output.set(Concat(Bytes("Hello, "), name.get()))
11
12     @delete(authorize=Authorize.only(Global.creator_address()))
13     def delete(self) -> Expr:
14         return Approve()
15

```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

zsh Playgro... Python De...



Network(s)

Wallet

APIs

Explorer



# Algokit Build Process

\$ algokit init

Select dApp template

Bootstrap toolchain

Compile source code

\$ algokit localnet start

\$ algokit localnet explore

Configure DevWallet

Deploy smart contract

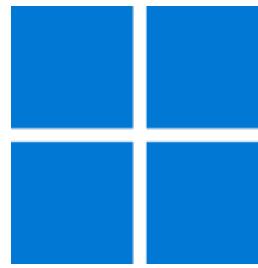
Interact using Beaker Studio



# Prerequisites



# AlgoKit on Windows



**Windows 11**



**Windows 10**

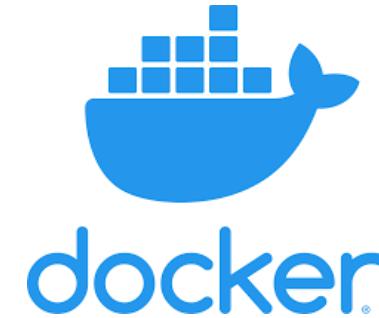
Build 19041+



# Windows Prerequisites



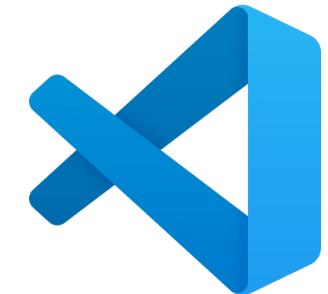
WSL2



4.8+



3.10+



VS Code

Required

Recommended



# AlgoKit on macOS



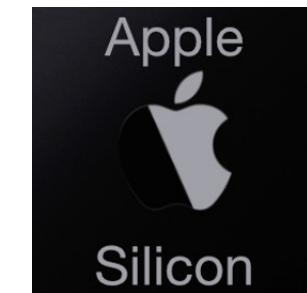
macOS Big Sur



macOS Monterey



macOS  
Ventura



Apple  
Silicon



intel  
CORE

Support Versions

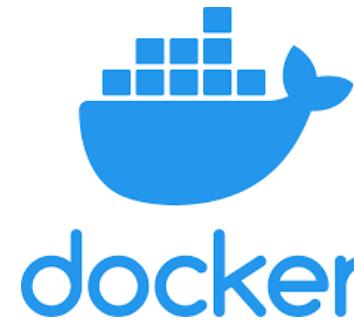
Supported Processors



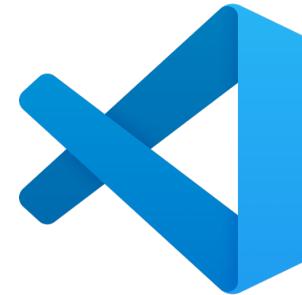
# macOS Prerequisites



Homebrew



4.8+



VS Code



Chrome

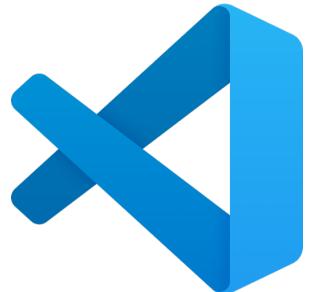
Required

Recommended



# Dev Env Setup





VS Code



Code editing.  
Redefined.

Free. Built on open source. Runs everywhere.

[Download Mac Universal](#)  
Stable Build

Web, Insiders edition, or other platforms

By using VS Code, you agree to its license and privacy statement.

EXTENSIONS: MARKETPLACE

- Python — 2019.6.24221 ⚡ 54.9M ★ 4.5  
Linting, Debugging (multi-threaded...) Microsoft [Install](#)
- GitLens — Git supercharged 9.8.5 ⚡ 23.1M ★ 5 Supercharge the Git capabilities built into VS Code Eric Amadio [Install](#)
- C/C++ — 0.24.0 ⚡ 23M ★ 3.5 C/C++ IntelliSense, debugging, and tools Microsoft [Install](#)
- ESLint — 1.9.0 ⚡ 21.9M ★ 4.5 Integrates ESLint JavaScript linter into VS Code Dirk Baumer [Install](#)
- Debugger for Chrome — 4.11.6 ⚡ 20.6M ★ 4 Debug your JavaScript code in the browser Microsoft [Install](#)
- Language Support for Java — 0.47.0 ⚡ 18.6M ★ 4.5 Java Linting, Intellisense, formatting, and more Red Hat [Install](#)
- vscode-icons — 8.8.0 ⚡ 17.2M ★ 5 Icons for Visual Studio Code VSCode Icons Team [Install](#)
- Vetur — 0.21.1 ⚡ 17M ★ 4.5 Vue tooling for VS Code Pine Wu [Install](#)

blog-post.js — gatsby-graphql-app

```

src > components > JS blog-post.js > ↗function> [e]blogPost
1 import React from "react"
2 import Image from "gatsby-image"
3
4 export default ({ data }) => {
5   const blogPost = data.cms.blogPost
6   return (
7     [e]data
8     <div> [e]dateFormat
9       {blogPost [e]debug
10       blogPost [e]debugger
11       blogPost [e]decodeURI
12       <Image [e]decodeURIComponent
13       >)
14     <h1>{blogPost [e]defaultStatus
15     <div>Post [e]delete
16     <div>[e]departFocus
17     </div>
18   )
19 }
20
21 export const query = graphql`
```

PROBLEMS TERMINAL ... 2: Task - develop

info : [wdm]: Compiling...
DONE Compiled successfully in 26ms 3:57:58 PM

info : [wdm]:
info : [wdm]: Compiled successfully.

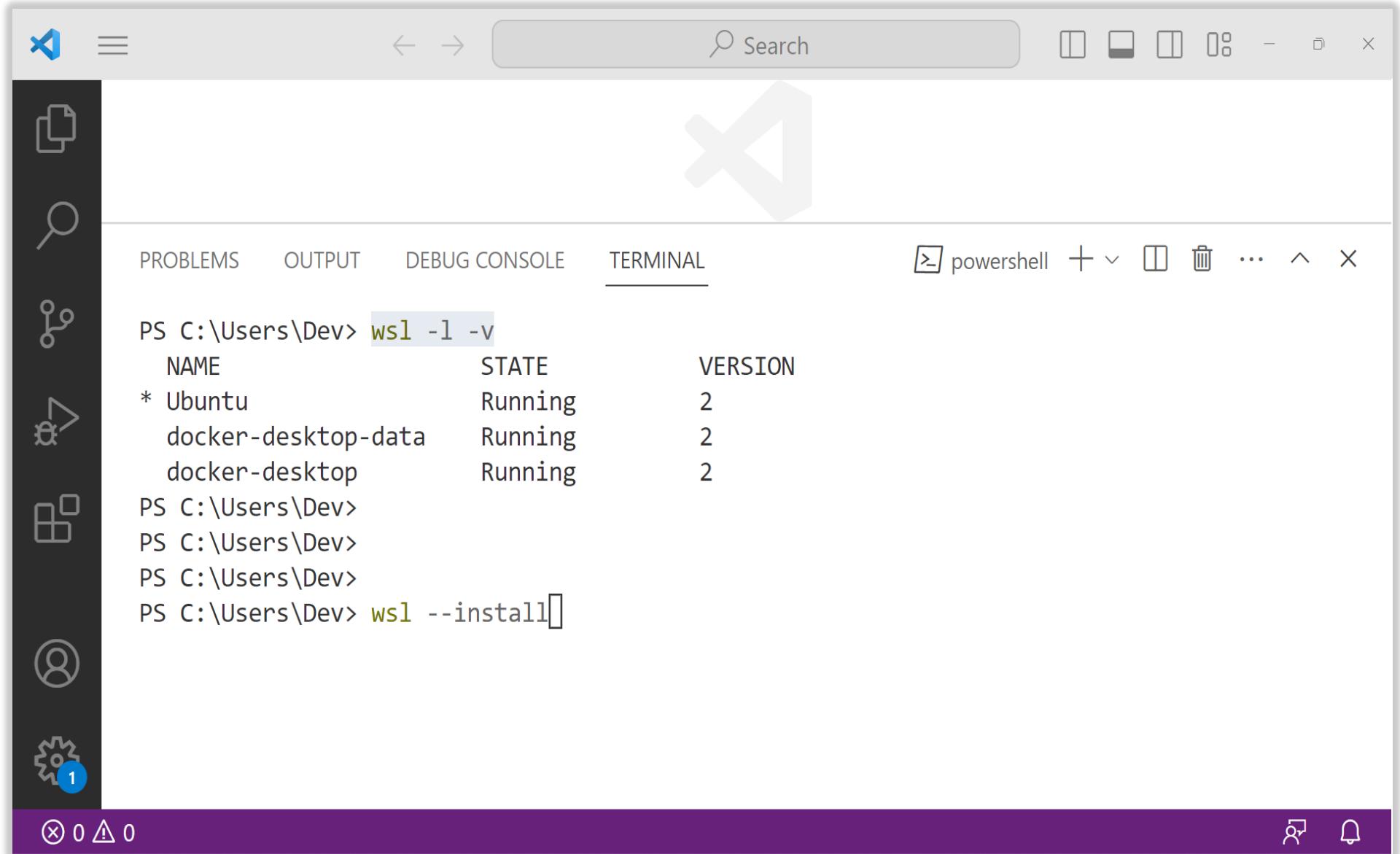
Ln 6, Col 21 Spaces: 2 UTF-8 LF JavaScript

IntelliSense Run and Debug Built-in Git Extensions

Visual Studio Code - Code Editor



WSL2



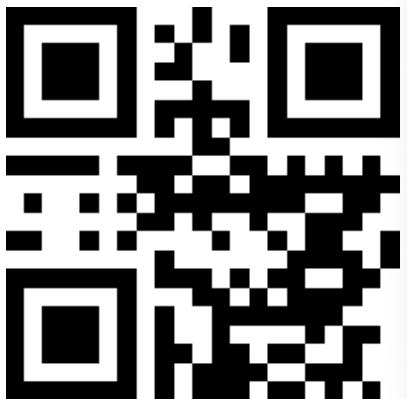
The screenshot shows the VS Code interface with the terminal tab selected. The terminal window displays the following command and its output:

```
PS C:\Users\Dev> wsl -l -v
NAME          STATE    VERSION
* Ubuntu       Running   2
  docker-desktop-data  Running   2
  docker-desktop      Running   2
PS C:\Users\Dev>
PS C:\Users\Dev>
PS C:\Users\Dev>
PS C:\Users\Dev> wsl --install[]
```

The terminal status bar at the bottom indicates 0 errors and 0 warnings. The left sidebar shows the standard VS Code icons for files, search, symbols, and more.



Homebrew



The screenshot shows a web browser window displaying the Homebrew website at [brew.sh](https://brew.sh). The page has a dark background with a central white graphic of a beer mug with foam and an apple. The word "Homebrew" is written in large, bold, gold-colored letters. Below it, the subtitle "The Missing Package Manager for macOS (or Linux)" is displayed in a smaller white font. A search bar with a magnifying glass icon and a dropdown menu for language selection (set to English) are visible. At the bottom, there is a large call-to-action button with the text "Install Homebrew" in gold letters, accompanied by a terminal command line and a clipboard icon.

Homebrew — The Missing Package Manager for macOS (or Linux)

Search

English

Install Homebrew

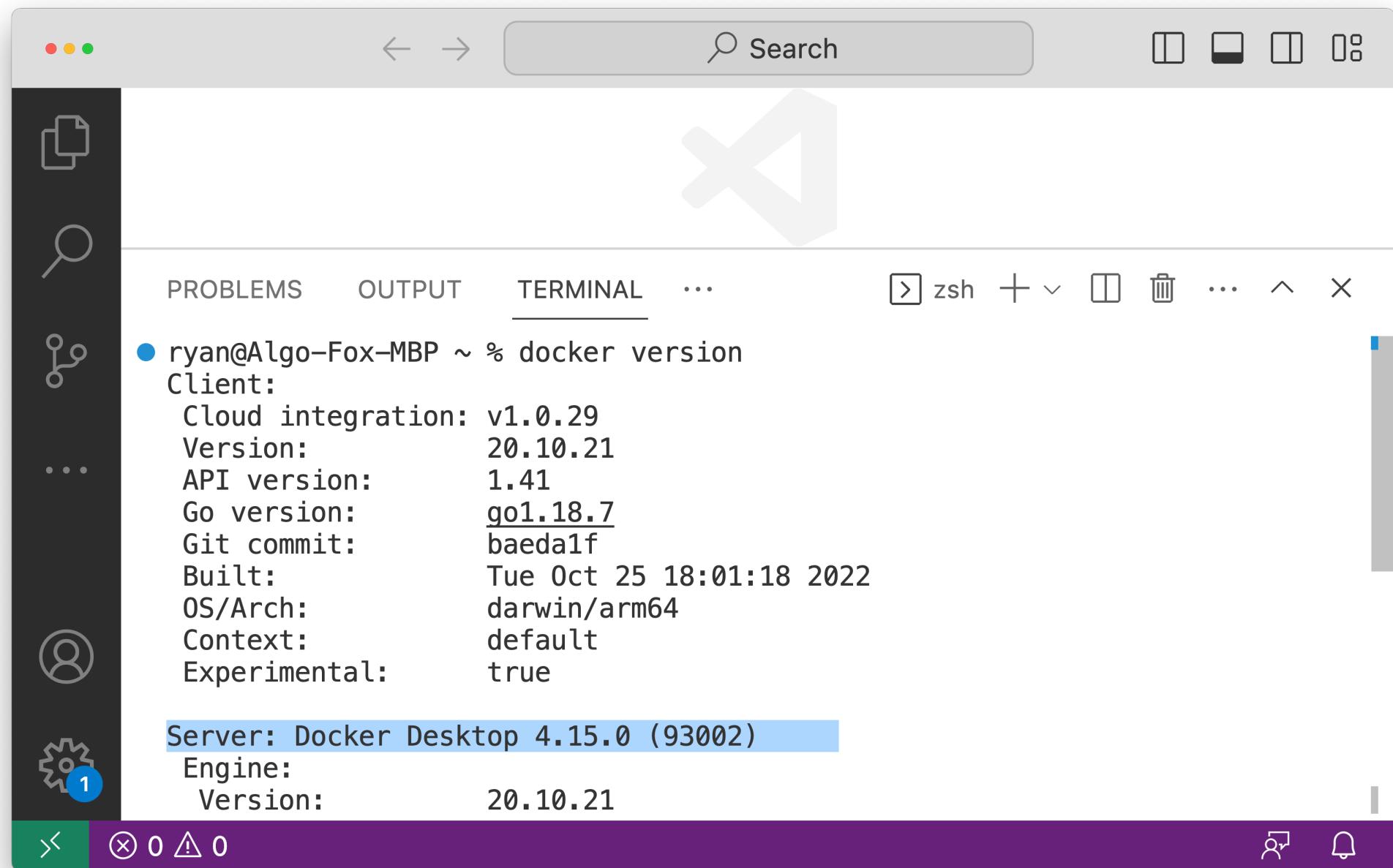
```
$ /bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"
```



A screenshot of the Visual Studio Code (VS Code) interface. The window title bar includes a search bar labeled "Search" and standard window control buttons. The left sidebar features a dark theme with various icons: a file, a magnifying glass, a network, three dots, a user profile, and a gear with a blue notification bubble containing the number "1". The main area has a light gray background with a large, semi-transparent Microsoft logo watermark. The bottom status bar is purple and displays icons for close, minimize, maximize, and notifications (0 errors, 0 warnings).

The terminal tab is active, showing the output of a Git command:

```
ryan@Algo-Fox-MBP ~ % git --version
git version 2.37.1 (Apple Git-137.1)
ryan@Algo-Fox-MBP ~ %
```



The screenshot shows the Visual Studio Code interface with the Docker extension installed. The sidebar on the left has icons for file, search, connections, and other settings, with a gear icon having a '1' notification. The main area shows the terminal tab active, displaying the output of the 'docker version' command:

```
ryan@Algo-Fox-MBP ~ % docker version
Client:
  Cloud integration: v1.0.29
  Version:          20.10.21
  API version:      1.41
  Go version:       go1.18.7
  Git commit:       baeda1f
  Built:            Tue Oct 25 18:01:18 2022
  OS/Arch:          darwin/arm64
  Context:          default
  Experimental:    true

Server: Docker Desktop 4.15.0 (93002)
Engine:
  Version:          20.10.21
```

The status bar at the bottom shows the Docker extension icon with a '1' notification, along with the message '0 errors 0 warnings'.



A screenshot of the Visual Studio Code (VS Code) interface. The window title bar shows the VS Code logo. The left sidebar has icons for file, search, and other settings, with a gear icon having a blue circle containing the number '1' indicating an update. The main area is the Terminal tab, which is active. The terminal output shows:

```
ryan@Algo-Fox-MBP ~ % python --version
Python 3.10.7
ryan@Algo-Fox-MBP ~ %
```

The bottom status bar shows the terminal input field, a red 'X' button, and status indicators for 0 errors and 0 warnings.



pipX

A large, bold, black "pip" text is partially obscured by a thick, green brushstroke "X".

A screenshot of the Visual Studio Code interface. The title bar shows "Search". The left sidebar has icons for剪切 (Scissors), 搜索 (Search), 共享 (Share), and three dots. The bottom of the sidebar shows a user icon, a gear icon with a "1" notification, and a close button. The main area is a terminal window titled "zsh". The tab bar at the top includes "PROBLEMS", "OUTPUT", "TERMINAL" (which is underlined), "...", and "..." again. The terminal content shows:

```
ryan@Algo-Fox-MBP ~ % pipx --version
1.2.0
ryan@Algo-Fox-MBP ~ %
```

The bottom status bar shows "x", "0 0", and "0 0". On the far right of the status bar are icons for user, notifications, and settings.

# AlgoKit Installation





```
ryan@Algo-Fox-MBP ~ % brew install algorandfoundation/tap/algokit
==> Downloading https://github.com/algorandfoundation/algokit-cli/releases/download/v0.3.3/a
==> Downloading from https://objects.githubusercontent.com/github-production-release-asset-2
#####
All formula dependencies satisfied.
==> Installing Cask algokit
==> Running installer script 'pipx'
    installed package algokit 0.3.3, installed using Python 3.11.2
    These apps are now globally available
        - algokit
==> Running installer script 'pipx'
/Users/ryan/.local/bin has been added to PATH, but you need to open a new
terminal or re-login for this PATH change to take effect.

You will need to open a new terminal or re-login for the PATH changes to take
effect.

Otherwise pipx is ready to go! ✨ ✨ ✨
==> Running installer script 'bash'
🍺 algokit was successfully installed!
```



```
ryan@Algo-Fox-MBP ~ % pipx install algokit
installed package algokit 0.3.3, installed using Python 3.11.2
These apps are now globally available
  - algokit
done! ✨ ✨ ✨
ryan@Algo-Fox-MBP ~ %
```

Let's  
**#BUIDL**



# Bootcamp Resources

<https://github.com/algorand-devre/bootcamp/>

<https://developer.algorand.org>

<https://discord.gg/algorand>



WE WANT MORE

# Tomorrow

- <https://algorand.foundation/events>
- Look for Bootcamp
- Sign up!



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