

Algorand Developer Bootcamp - Ep.1

Developer Onboarding with AlgoKit & Python SDK



Ryan R. Fox

Developer Advocate
@AlgoFoundation



Joe Polny

Developer Advocate
@AlgoFoundation



Ryan R. Fox

@ryanRfox



Joe Polny

@joe_polny



@AlgoDevs



Bootcamp Agenda

Ep.1 Learn & Install

Ep.2 Build & Deploy

Ep.3 Test & Debug

Ep.4 Interact



Ep.1 Agenda

Developer Environment Setup

Intro to Algorand using Python SDK

Assignment

Q&A



25

LFG

@AlgoDevs



Show me!



templates + toolchain + web3 infrastructure



Auction



Crowdfunding



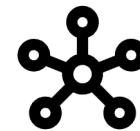
VRF Shuffle



```

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

```



Network(s)



Wallet



APIs



Explorer



Algokit Build Process

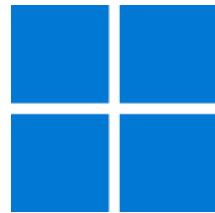
```
$ algokit init
  Select dApp template
  Bootstrap toolchain
  Compile source code
$ algokit localnet start
$ algokit localnet explore
  Configure DevWallet
  Deploy smart contract
  Interact using Beaker Studio
```



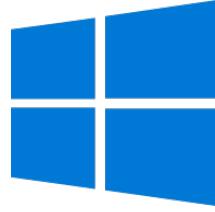
Prerequisites



AlgоКит on Windows



Windows 11



Windows 10

Build 19041+



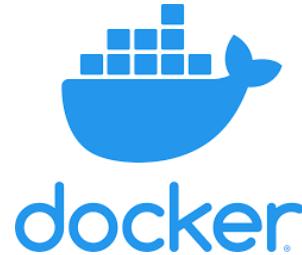
Windows Prerequisites



WSL2



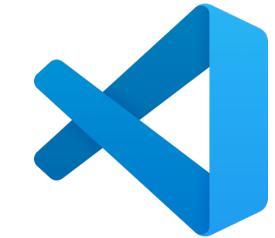
4.8+



3.10+



Required



VS Code

Recommended



AlgоКит on macOS



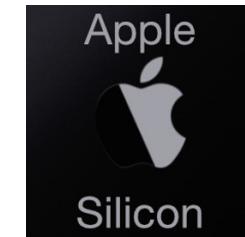
macOS Big Sur



macOS Monterey



macOS
Ventura



Apple
Silicon



intel
CORE

Support Versions

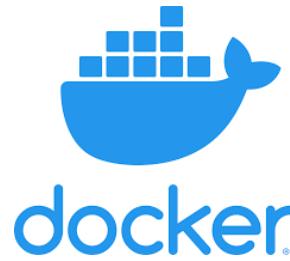
Supported Processors



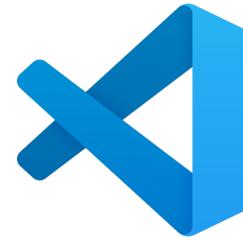
macOS Prerequisites



Homebrew



4.8+



VS Code



Chrome

Required

Recommended



Dev Env Setup





VS Code



code.visualstudio.com

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 2019.6.2421 54.9M 4.5 Microsoft [Install](#)
- GitLens — Git supercharged 9.8.5 23.1M 5 Eric Amadio [Install](#)
- C/C++ 0.24.0 23M 3.5 Microsoft [Install](#)
- ESLint 1.8.0 21.9M 4.5 Integrates ESLint JavaScript into VS Code Dirk Baumer [Install](#)
- Debugger for Chrome 4.11.6 20.6M 4 Microsoft [Install](#)
- Language Support for Java 0.470 18.6M 4.5 Red Hat [Install](#)
- vscode-icons 8.8.0 17.2M 5 Icons for Visual Studio Code VSCode Icons Team [Install](#)
- Vetur 0.2.1 17M 4.5 Vue tooling for VS Code Pine Wu [Install](#)

blog-post.js x JS index.js JS utils.js

```

src > components > JS blog-post.js > <function> > 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     <div>
8       <div> {data.debug}
9       <div> {data.debugger}
10      <div> {data.decodeURI}
11      <img alt="image" data-decodeURIComponent=""/>
12    </div>
13    <div> {data.default}
14    <div> {data.defaultStatus}
15    <div> {data.delete}
16    <div> {data.departFocus}
17    </div>
18  )
19 }
20
21 export const query = graphql`
```

PROBLEMS TERMINAL ... 2: Task - develop + ☰ ^ x

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

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

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

IntelliSense Run and Debug Built-in Git Extensions

This screenshot shows the official website for Visual Studio Code. It features a large central image of the VS Code interface with a dark theme, displaying code snippets and extension marketplace items. Below the main image, there are four cards highlighting features: 'IntelliSense' (with a lightbulb icon), 'Run and Debug' (with a play button icon), 'Built-in Git' (with a branching icon), and 'Extensions' (with a square grid icon). To the left of the main image, there's a QR code and a large VS Code logo. At the top, there are links for 'Docs', 'Updates', 'Blog', 'API', 'Extensions', 'FAQ', and 'Learn', along with a search bar and a 'Download' button.

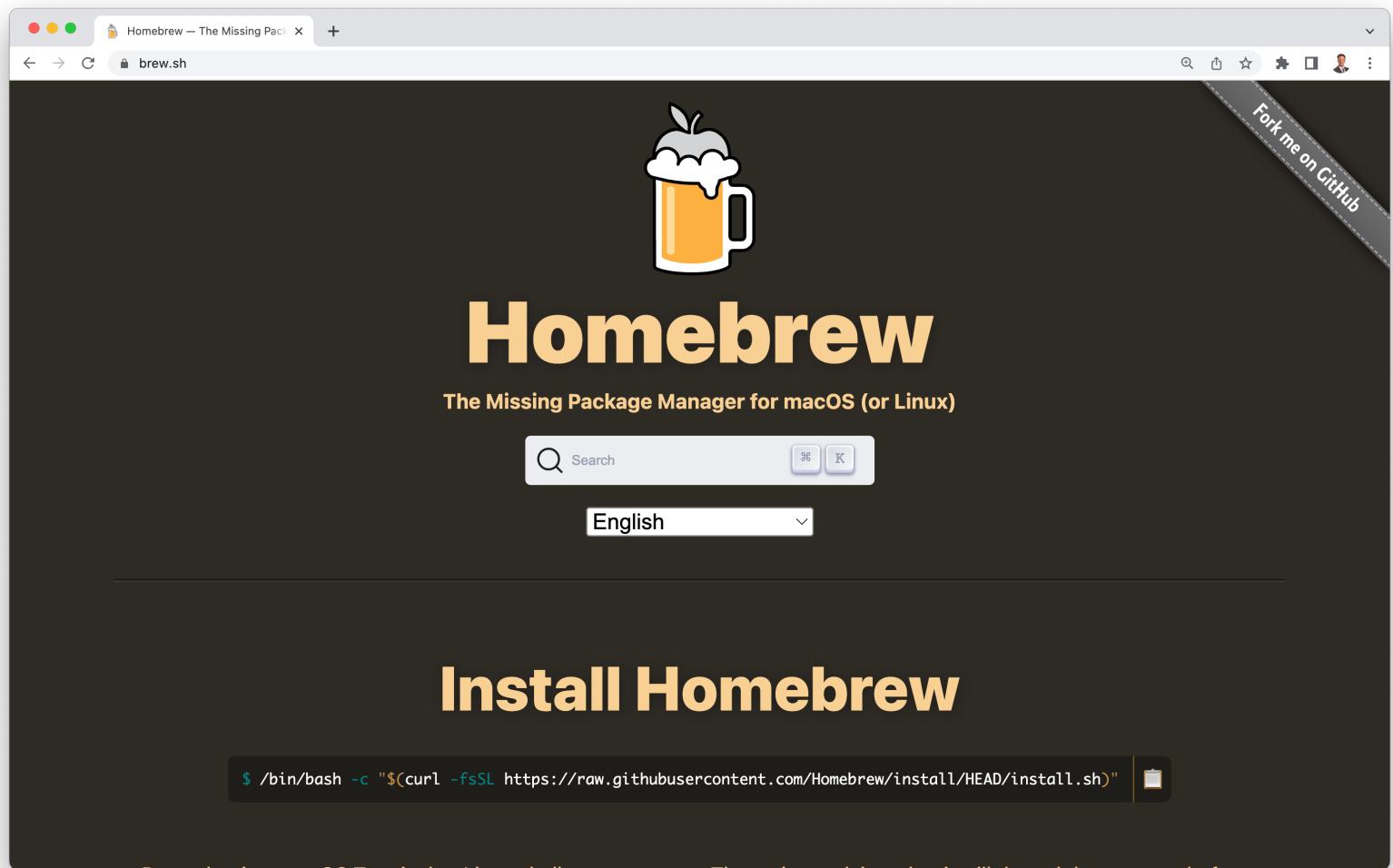
The image shows a Windows desktop environment with a teal border around the main content area. On the left side, there are three icons: the Windows logo, a blue icon with a white penguin face (WSL2), and a black QR code. Below these icons is the text "WSL2". In the center, a Microsoft Visual Studio Code (VS Code) window is open. The title bar of the VS Code window also has a teal border. The window contains a terminal tab with the following text:

```
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
```

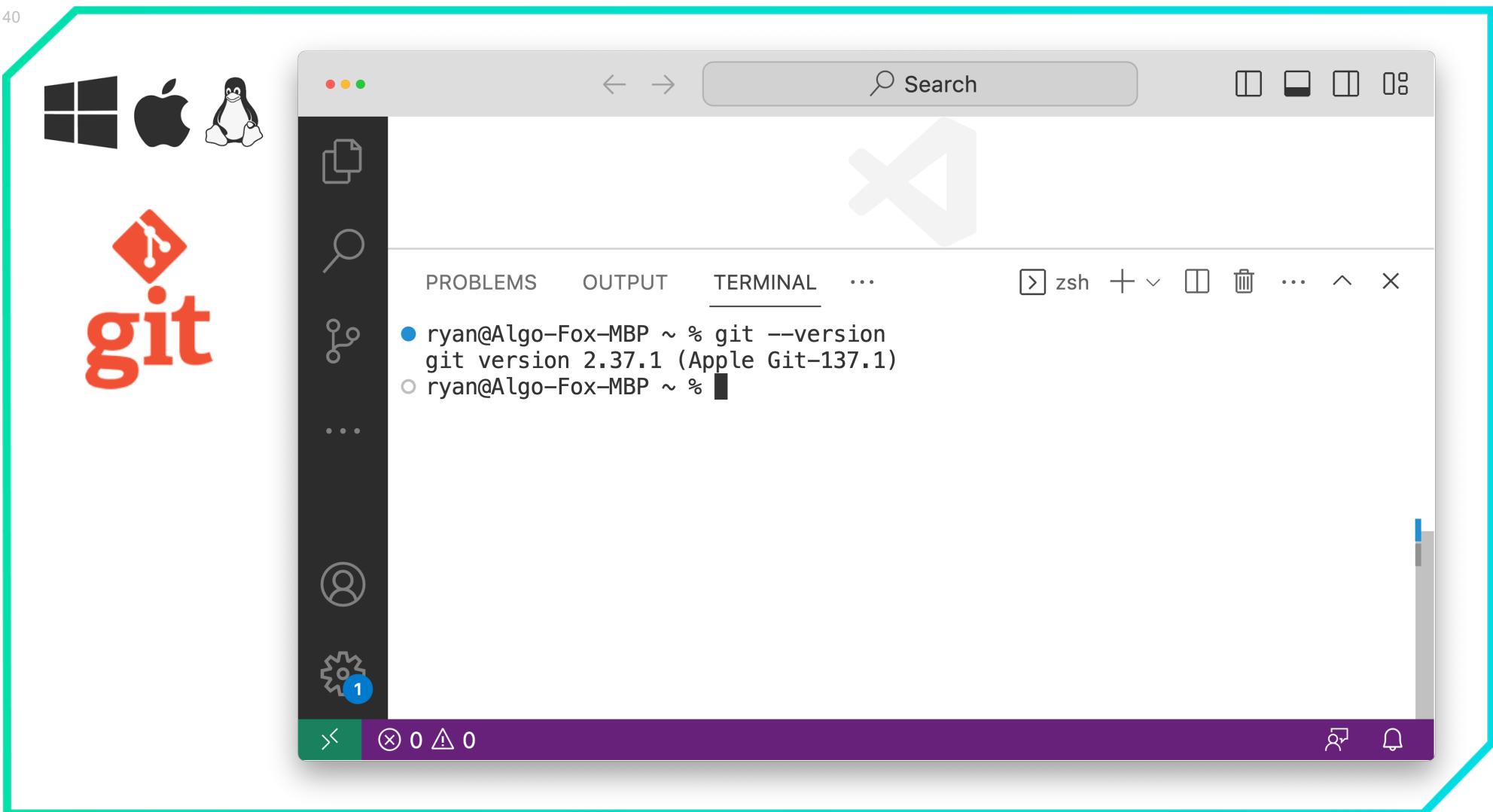
The VS Code interface includes a sidebar with various icons (File, Find, Connect, etc.) and a status bar at the bottom showing "0 0 0" and some icons.



Homebrew

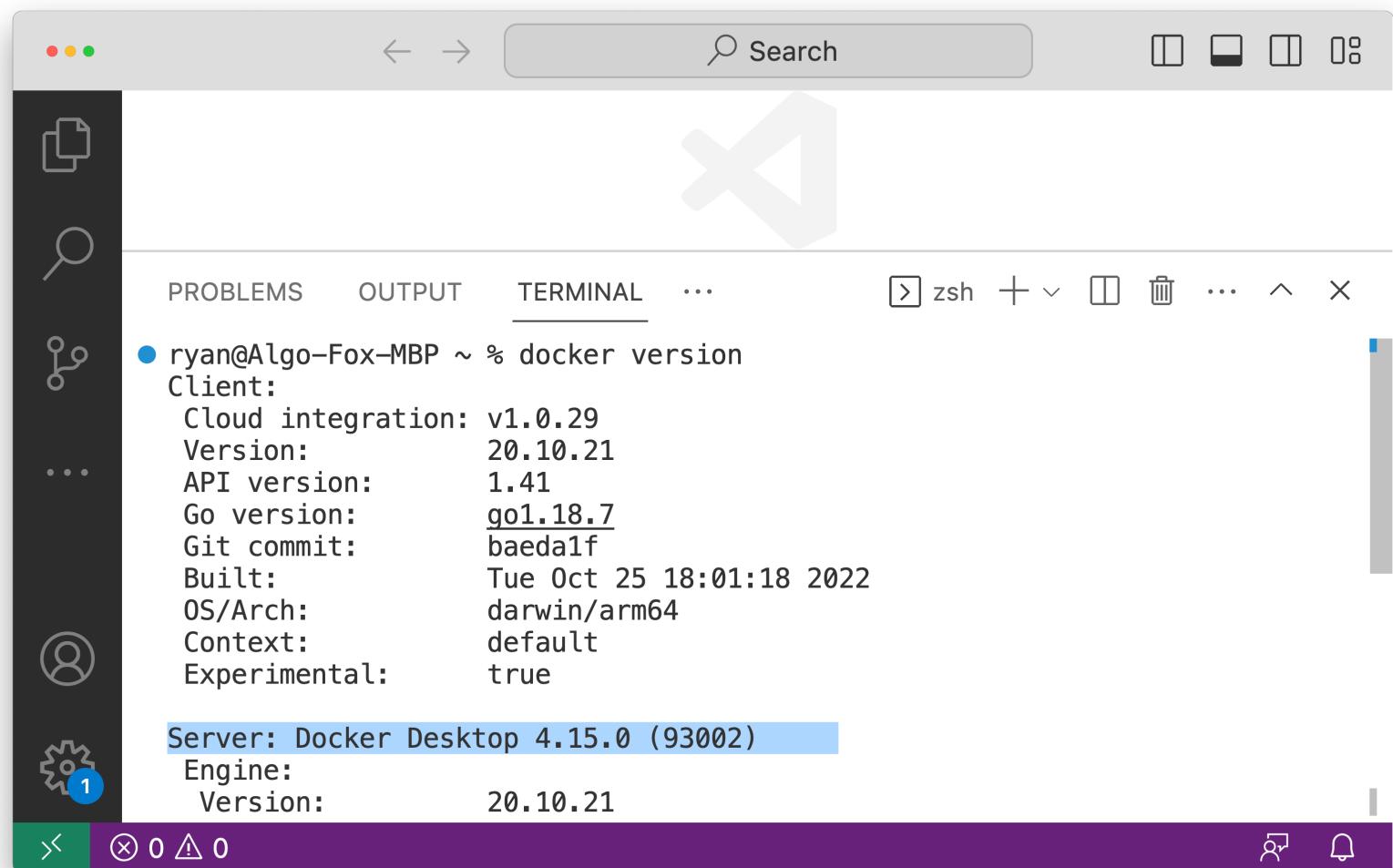


A screenshot of a web browser displaying the Homebrew website at brew.sh. The page has a dark background. At the top center is a large illustration of a beer mug with a frothy head and an apple on top. Below it, the word "Homebrew" is written in a large, bold, light-colored font. Underneath that, in a smaller font, is the tagline "The Missing Package Manager for macOS (or Linux)". To the right of the main title, there's a "Fork me on GitHub" button. A search bar and a language selection dropdown (set to English) are located below the main title. A horizontal line separates this from the "Install Homebrew" section. In the "Install Homebrew" section, there is a terminal-style code block showing the command: `$ /bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"`. The entire screenshot is framed by a thick cyan border.





docker
4.8+



A screenshot of the Visual Studio Code (VS Code) interface. The title bar shows the VS Code logo and the word "Search". 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 a terminal window titled "TERMINAL". It displays the output of the command "docker version".

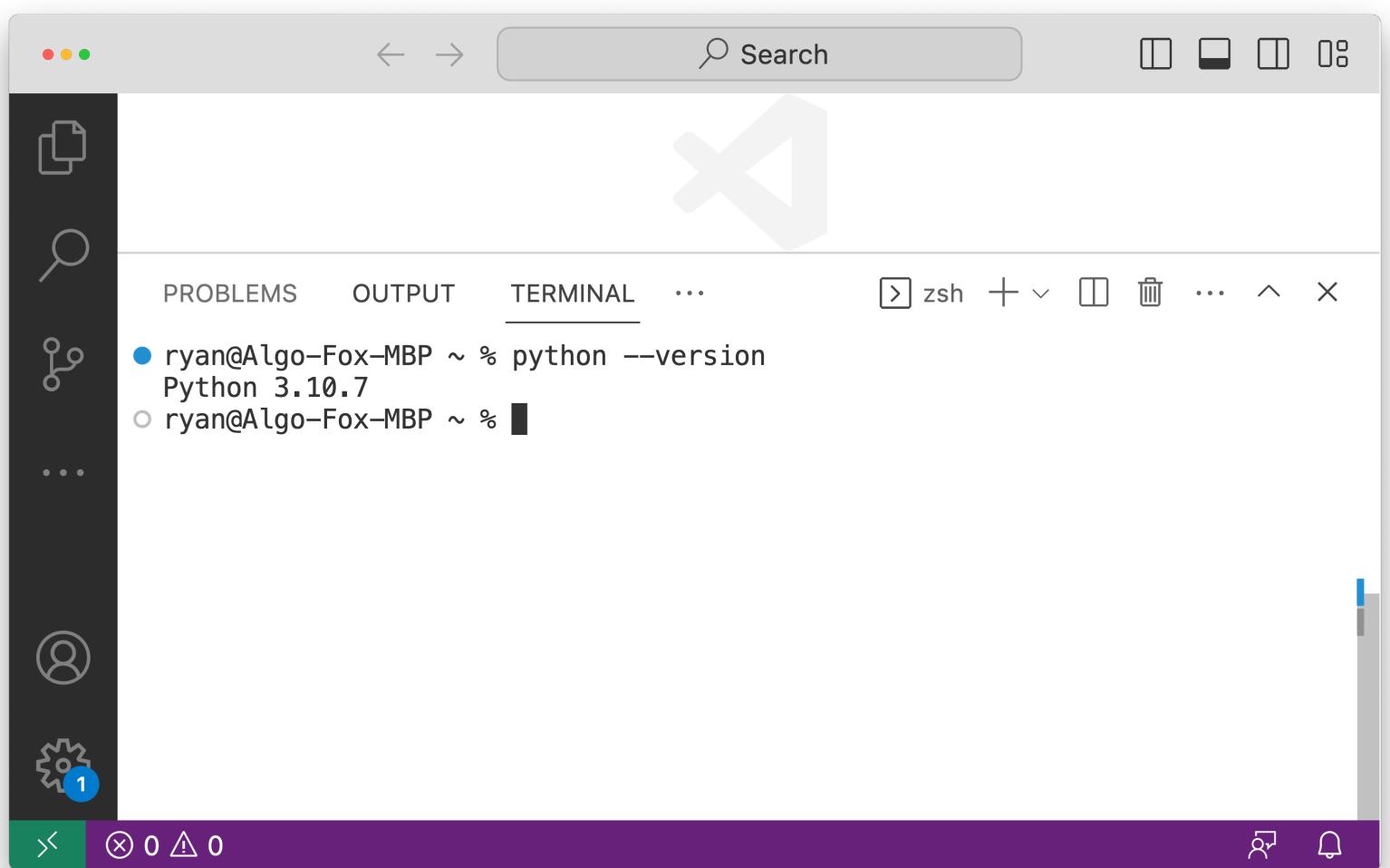
```
ryan@Algo-Fox-MBP ~ % docker version
Client:
  Cloud integration: v1.0.29
  Version:           20.10.21
  API version:       1.41
  Go version:        go1.18.7
  Git commit:        baeda1f
  Built:             Tue Oct 25 18:01:18 2022
  OS/Arch:           darwin/arm64
  Context:            default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

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

The status bar at the bottom shows the Docker icon, a green "X" icon, and the text "⊗ 0 △ 0".



python™
3.10+



The screenshot shows the Visual Studio Code (VS Code) interface. The title bar includes a search bar labeled "Search" and standard window control icons. The left sidebar has icons for file operations, search, connections, and other settings, with a gear icon having a blue circle containing the number "1". The main area is the "TERMINAL" tab, which displays the following text:

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

The bottom status bar shows icons for file operations, a search count of 0, and a warning count of 0.

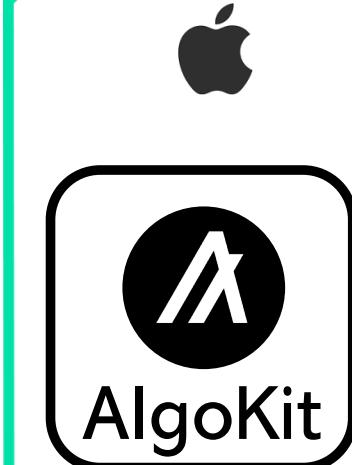
A screenshot of the Visual Studio Code (VS Code) interface. The window title bar shows the VS Code logo and the word "Search". The main area displays the terminal output:

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

The terminal tab is selected in the top navigation bar. To the left, the sidebar shows icons for Windows, Apple, and Linux operating systems, followed by a large "pipX" logo with a green brushstroke. A QR code is also present in the sidebar.

AlgoKit Installation





A screenshot of the Visual Studio Code (VS Code) interface, specifically focusing on the Terminal tab. The terminal window shows the output of a command-line session:

```
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!
```

The screenshot shows a terminal window with a dark theme. At the top, there are icons for Windows, Apple, and Linux. Below that is a large AlgoKit logo. On the left side, there's a sidebar with icons for file, search, network, and user, with a '1' notification badge on the gear icon. The main area is a terminal window with the following text:

```
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



Feedback

<http://bit.ly/algo-bc1>



Bootcamp Resources

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

<https://developer.algorand.org>

<https://discord.gg/algorand>



WE WANT MORE

Tomorrow

<https://developer.algorand.org/events>



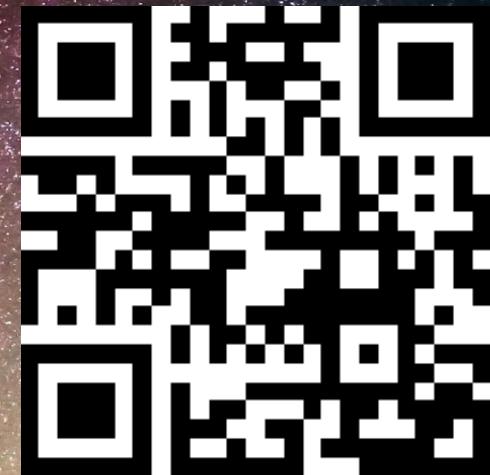
Ryan R. Fox

@ryanRfox



Joe Polny

@joe_polny



@AlgoDevs



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