

Visual Studio Code

Tips and Tricks

Foreword



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View Online neave.dev/vscode



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What is VS Code?

“ Visual Studio Code is a free code editor that is optimized for building and debugging modern web and cloud applications.”

You can run it on Windows, Linux, Mac or Online

<https://vscode.dev>

Key Features:

- It supports a range of languages,
- Productivity shortcut circuits
 - Keyboard shortcuts
 - Tasks
 - Snippets
- Customizable with
 - Themes
 - Extensions
- Integrated terminal.

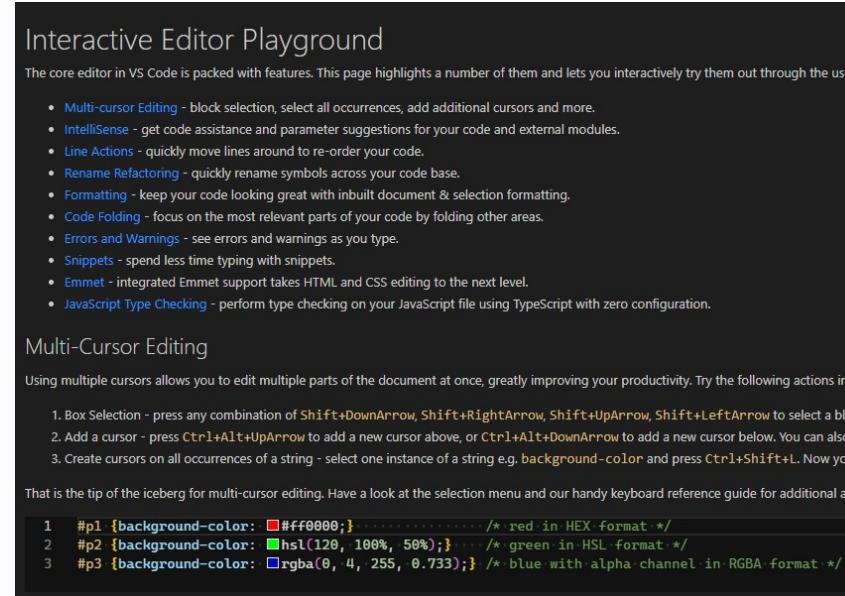
Documentation and Updates

- Official Documentation
 - Intro Videos
 - Tips and Tricks
 - Updates
- VSCode YouTube Channel

Inbuilt Features

Help Menu

- Keyboard shortcut reference
- Walkthroughs
- Interactive Editor Playground



The screenshot shows a dark-themed browser window titled "Interactive Editor Playground". The page content is as follows:

Interactive Editor Playground

The core editor in VS Code is packed with features. This page highlights a number of them and lets you interactively try them out through the use of code snippets.

- Multi-cursor Editing - block selection, select all occurrences, add additional cursors and more.
- IntelliSense - get code assistance and parameter suggestions for your code and external modules.
- Line Actions - quickly move lines around to re-order your code.
- Rename Refactoring - quickly rename symbols across your code base.
- Formatting - keep your code looking great with inbuilt document & selection formatting.
- Code Folding - focus on the most relevant parts of your code by folding other areas.
- Errors and Warnings - see errors and warnings as you type.
- Snippets - spend less time typing with snippets.
- Emmet - integrated Emmet support takes HTML and CSS editing to the next level.
- JavaScript Type Checking - perform type checking on your JavaScript file using TypeScript with zero configuration.

Multi-Cursor Editing

Using multiple cursors allows you to edit multiple parts of the document at once, greatly improving your productivity. Try the following actions in the playground:

1. Box Selection - press any combination of `Shift+DownArrow`, `Shift+RightArrow`, `Shift+UpArrow`, `Shift+LeftArrow` to select a block of text.
2. Add a cursor - press `Ctrl+Alt+UpArrow` to add a new cursor above, or `Ctrl+Alt+DownArrow` to add a new cursor below. You can also use `Ctrl+Shift+UpArrow` and `Ctrl+Shift+DownArrow`.
3. Create cursors on all occurrences of a string - select one instance of a string e.g. `background-color` and press `Ctrl+Shift+L`. Now you can edit all occurrences at once.

That is the tip of the iceberg for multi-cursor editing. Have a look at the selection menu and our handy keyboard reference guide for additional actions.

```
1 #p1 {background-color: #ff0000;} /* red in HEX format */
2 #p2 {background-color: hsl(120, 100%, 50%); /* green in HSL format */
3 #p3 {background-color: rgba(0, 4, 255, 0.733); /* blue with alpha channel in RGBA format */
```



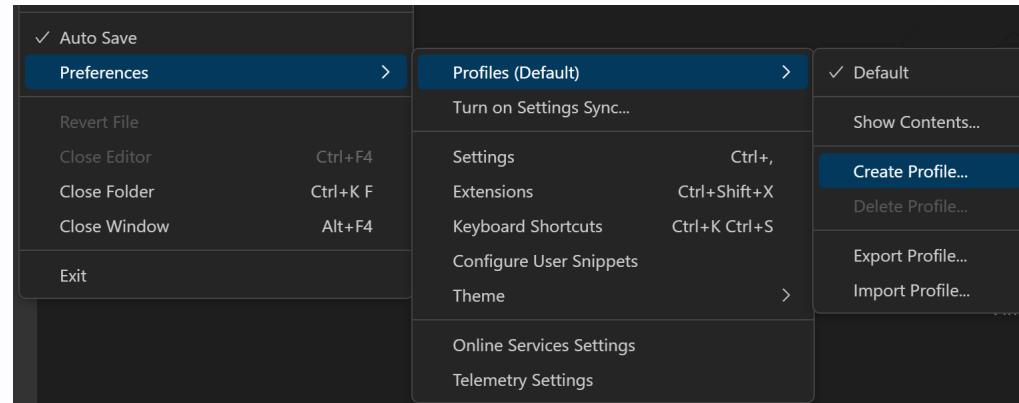
Settings

Inbuilt Features

Profiles

VS Code has a Default Profile. Customize Settings, Keyboard Shortcuts, User Snippets, User Tasks or Extensions.

You can have additional profiles.



- Have a profile for Frontend, Backend, AWS and Azure or a Project.
- Customize the profile for a stack ie (Jira, AWS and Python).
- You could install the tools and extensions as part of that project.

Customisation

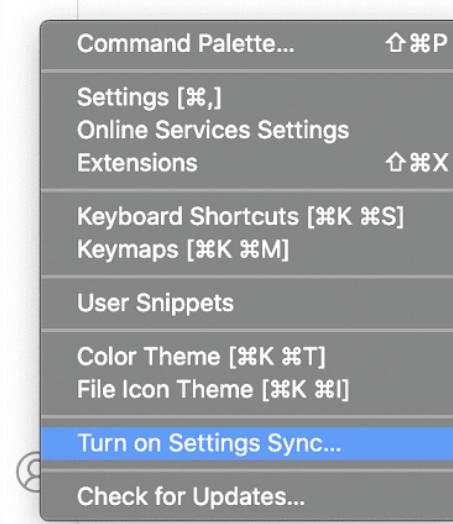
- Edit the settings via the UI or the underlying JSON.
- Default settings or open Preferences: Open Default Settings (JSON)
- Customize the User settings `Ctrl+,` (UI) - `Ctrl+P` and go to Open User Settings (JSON)

```
{  
  "editor.fontFamily": "'Cascadia Code'",  
  "editor.formatOnSave": true,  
  "editor.rulers": [ 120 ],  
  "editor.stickyScroll.enabled": true,  
  "editor.trimAutoWhitespace": true,  
  "explorer.fileNesting.enabled": true,  
  "files.trimTrailingWhitespace": true,  
  "git.branchPrefix": "yourusername/",  
  "terminal.integrated.fontFamily": "'CaskaydiaCove Nerd Font Mono', 'Cascadia Code', Consolas, 'Courier New', monospace",  
  "workbench.sideBar.location": "right"  
}
```

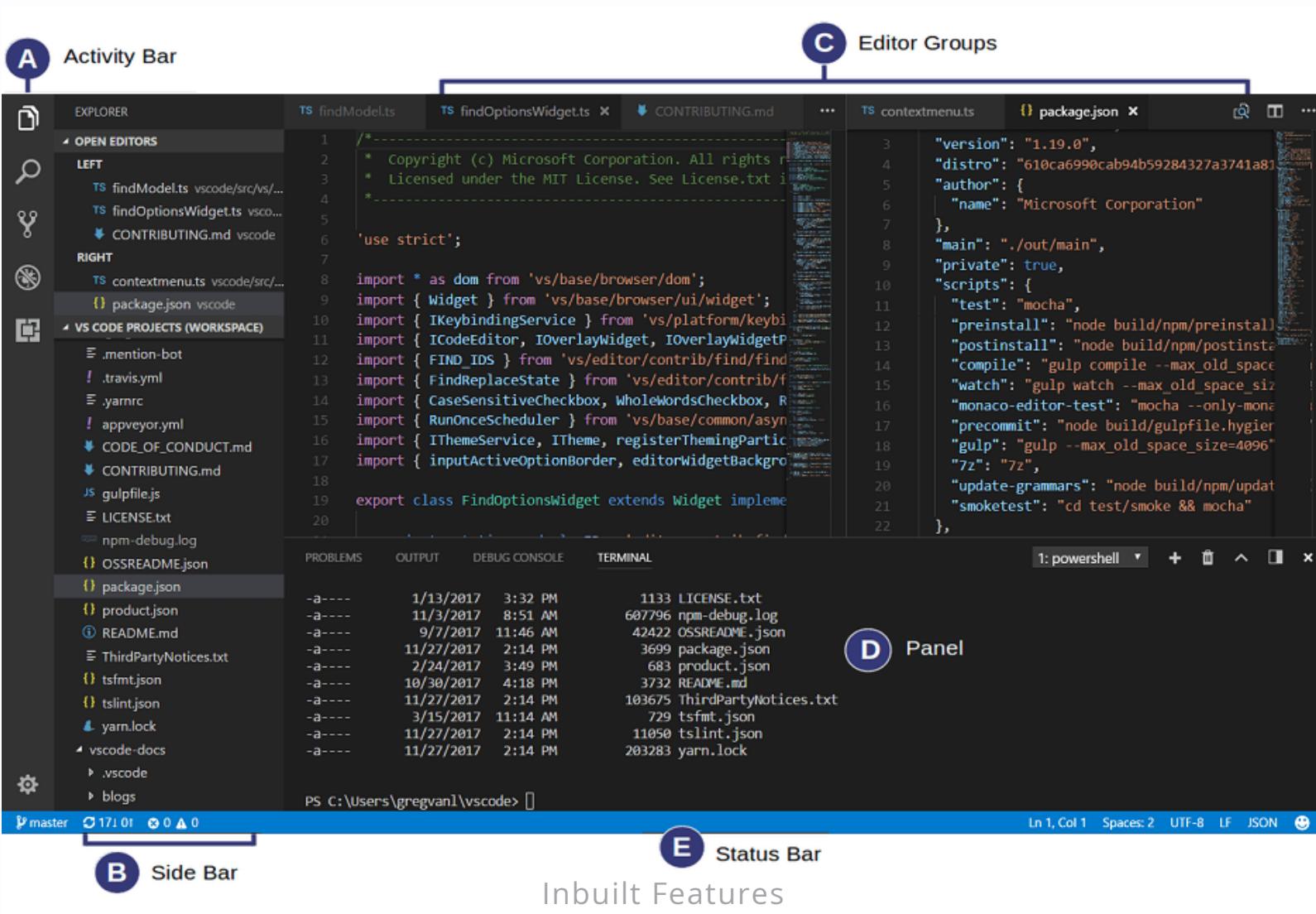
Inbuilt Features

Synchronized Settings

Settings sync cross
multiple instances of
VS Code



Layout



Customize the layout

- You could move the sidebar to the right then when you `Toggle Sidebar/Ctrl+B` it doesn't make the code jump around.
- Add a secondary sidebar with Outline view for better navigation.

Grouping

Ctrl+\

Inbuilt Features

The screenshot shows a code editor window in VS Code with the file 'ADME.md' open. The file contains JSON configuration for a sidebar and various keyboard shortcuts. A specific section of the code is highlighted with a light gray background, demonstrating the 'Grouping' feature. The highlighted section starts at line 91 and ends at line 99, containing the following code:

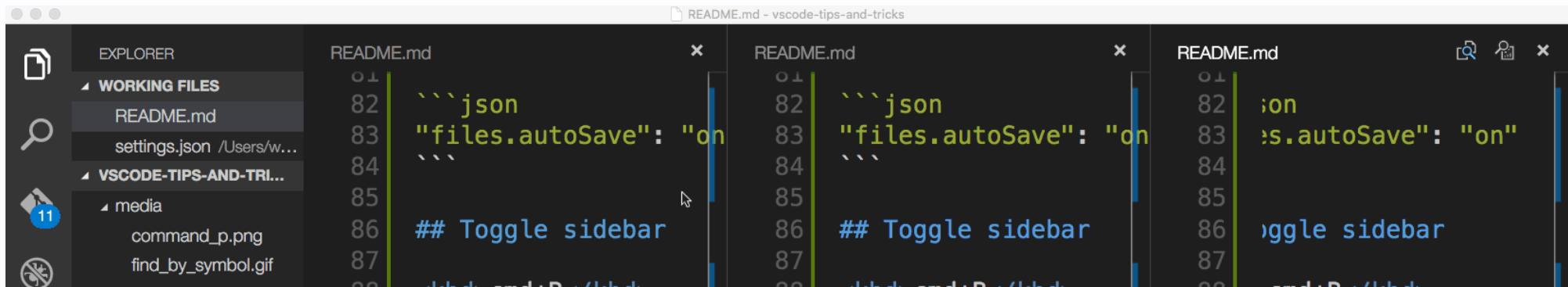
```
## Side by side editing
```

The code editor interface includes a status bar at the top with 'elp' and 'Finish 05:00' and a bottom status bar showing 'Spaces: 4 Ln'.

```
ADME.md
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97
98
99
00
01
02
03
04
05
06
07
08
```

```
```json
"files.autoSave": "on"
```
## Toggle sidebar
<kbd>cmd+B</kbd>
![toggle side bar](/media/toggle_side_bar.gif)
## Side by side editing
<kbd>cmd+`</kbd> or <kbd>cmd</kbd> then click a file from
## Switch between editors
<kbd>cmd+1</kbd>, <kbd>cmd+2</kbd>, <kbd>cmd+3</kbd>
## History
Navigate entire history with <kbd>ctrl+tab</kbd>
Navigate back with <kbd>ctrl+-</kdbd>.
Navigate forward with <kbd>ctrl+shift+up</kbd>
! [navigate history](/media/navigate_history.gif)
## Navigate to a file
```

Switch to next group with `Ctrl+[1,2,3...]`



Alternatively: `Ctrl+P` and `View: Move Editor to Next Group`

Navigation

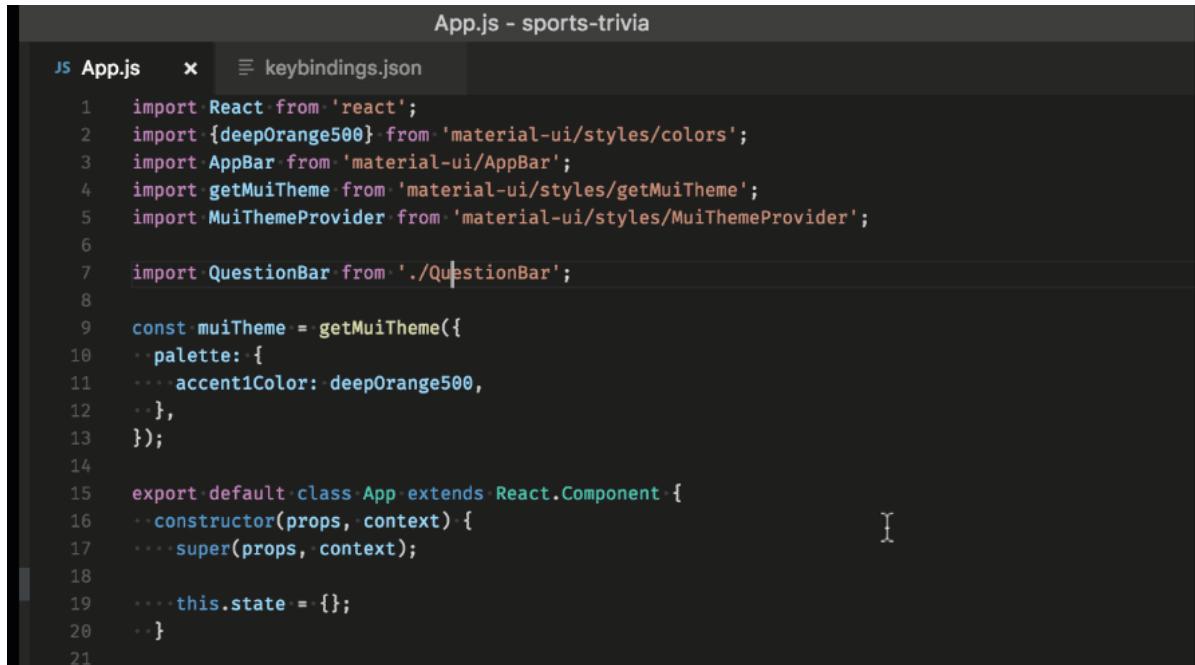
ctrl+R Displays a Quick Pick dropdown with the list from `File > Open Recent` with recently opened folders and workspaces followed by files.

Multi-Root Workspaces

Normally your workspace has a single root/project folder but you can have a workspace with multiple project folders in Visual Studio Code with [multi-root workspaces](#). Uses a `.code-workspace` file

```
{  
  "folders": [  
    {  
      // Source code  
      "name": "Product",  
      "path": "vscode"  
    },  
    {  
      // Docs and release notes  
      "name": "Documentation",  
      "path": "vscode-docs"  
    },  
    {  
      // Yeoman extension generator  
      "name": "Extension generator",  
      "path": "vscode-generator-code"  
    }  
  ]  
}
```

Command Palette



The screenshot shows the VS Code interface with the title bar "App.js - sports-trivia". Below the title bar, there's a tab bar with "App.js" selected, followed by "keybindings.json". The main editor area displays the following code:

```
1 import React from 'react';
2 import {deepOrange500} from 'material-ui/styles/colors';
3 import AppBar from 'material-ui/AppBar';
4 import getMuiTheme from 'material-ui/styles/getMuiTheme';
5 import MuiThemeProvider from 'material-ui/styles/MuiThemeProvider';
6
7 import QuestionBar from './QuestionBar';
8
9 const muiTheme = getMuiTheme({
10   palette: {
11     accent1Color: deepOrange500,
12   },
13 });
14
15 export default class App extends React.Component {
16   constructor(props, context) {
17     super(props, context);
18
19     this.state = {};
20   }
21 }
```

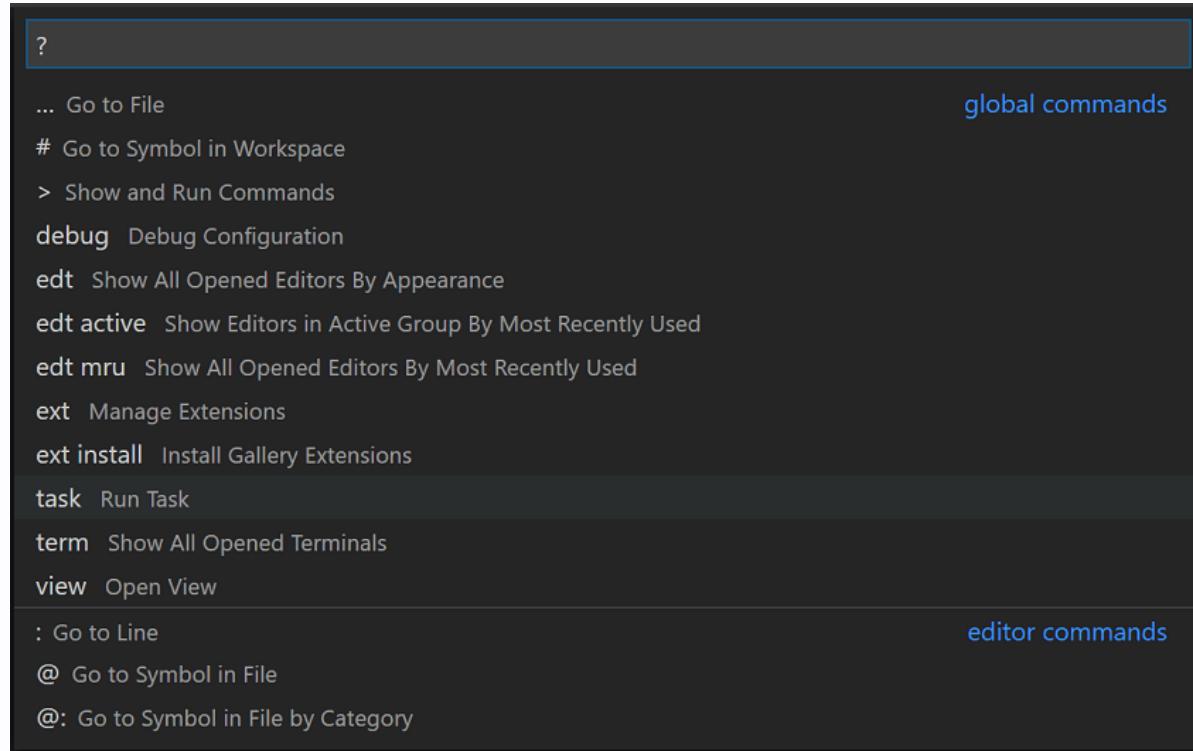
Ctrl+Shift+P

Quick Open File



Ctrl+P

Inbuilt Features



Ctrl+P and type ?term to open a new terminal

Others

Ctrl+T - Go To Symbol

Ctrl+G - Go to Line

Alt+ ← / → - Jump forward and back

Editing

Inbuilt Features

Text Manipulation

- Sort Lines Ascending/Descending
- Join Lines
- Transform Text

Transform Example

Title Hello World

Upper HELLO WORLD

Lower hello world

Camel helloWorld

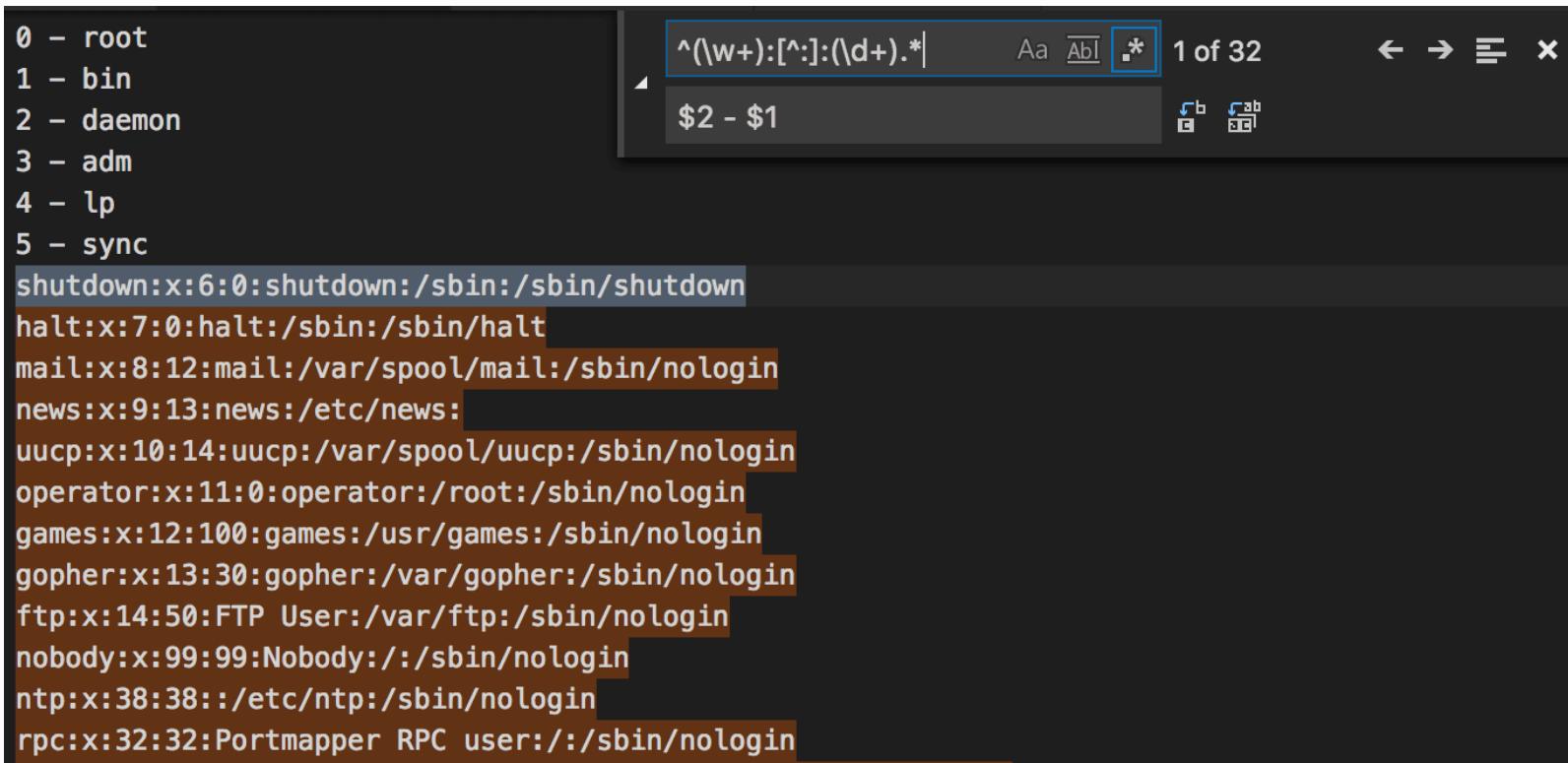
Snake helloWorld → hello_world

Kebab helloWorld → hello-world

Code Formatting

```
render() {
  return (
    <div className={s.app}>
      <AppBar
        title="Notes"
        iconClassNameRight="muidocs-icon-navigation-expandright"
      />
      <div style={{
        marginTop: 20,
        marginLeft: 20
      }}>
        <NewNote />
        <Notes items={this.state.notes}/>
      </div>
    </div>
  );
}
```

Regex Search and Replace



A screenshot of a terminal window showing a search and replace operation. The search term is `^(\w+):[^\:](\d+).*`. The replace term is `$2 - $1`. The terminal shows a list of entries from /etc/passwd, with the first few lines and the search term highlighted.

```
0 - root
1 - bin
2 - daemon
3 - adm
4 - lp
5 - sync
shutdown:x:6:0:shutdown:/sbin:/sbin/shutdown
halt:x:7:0:halt:/sbin:/sbin/halt
mail:x:8:12:mail:/var/spool/mail:/sbin/nologin
news:x:9:13:news:/etc/news:
uucp:x:10:14:uucp:/var/spool/uucp:/sbin/nologin
operator:x:11:0:operator:/root:/sbin/nologin
games:x:12:100:games:/usr/games:/sbin/nologin
gopher:x:13:30:gopher:/var/gopher:/sbin/nologin
ftp:x:14:50:FTP User:/var/ftp:/sbin/nologin
nobody:x:99:99:Nobody:/sbin/nologin
ntp:x:38:38::/etc/ntp:/sbin/nologin
rpc:x:32:32:Portmapper RPC user:/sbin/nologin
```

Multi Cursor

Edit Text Vertically with [multi-cursor](#)

Keep selecting text with `Ctrl+D` and update over multiple locations in a file.

```
31 .global-message-list.transition {  
32   -webkit-transition: top 200ms linear;  
33   -ms-transition: top 200ms linear;  
34   -moz-transition: top 200ms linear;  
35   -khtml-transition: top 200ms linear;  
36   -o-transition: top 200ms linear;  
37   transition: top 200ms linear;  
38 }
```

Expanding and Shrinking Selection

Shift+Alt+Left and Shift+Alt+Right

Find the start and end of a long <div> in HTML

```
7 namespace Hello1
8 {
9     0 references
10    class Program
11    {
12        0 references
13        static void Main(string[] args)
14        {
15            System.Console.WriteLine("Hello World!");
16        }
17    }
18 }
```

Folding

Hide Text for easier reading

Fold Level [1 | 2 | 3 | 4],
Fold All, Unfold All

```
class App extends Component {  
  
  constructor() {  
    super();  
    this.state = {  
      notes: [  
        {  
          text: "go to the grocery store"  
        },  
        {  
          text: 'read medium article about engineering'  
        },  
        {  
          text: 'create build session'  
        },  
        {  
          text: 'fix bug #232'  
        }  
      ];  
    };  
  }  
}
```

Sticky Scroll

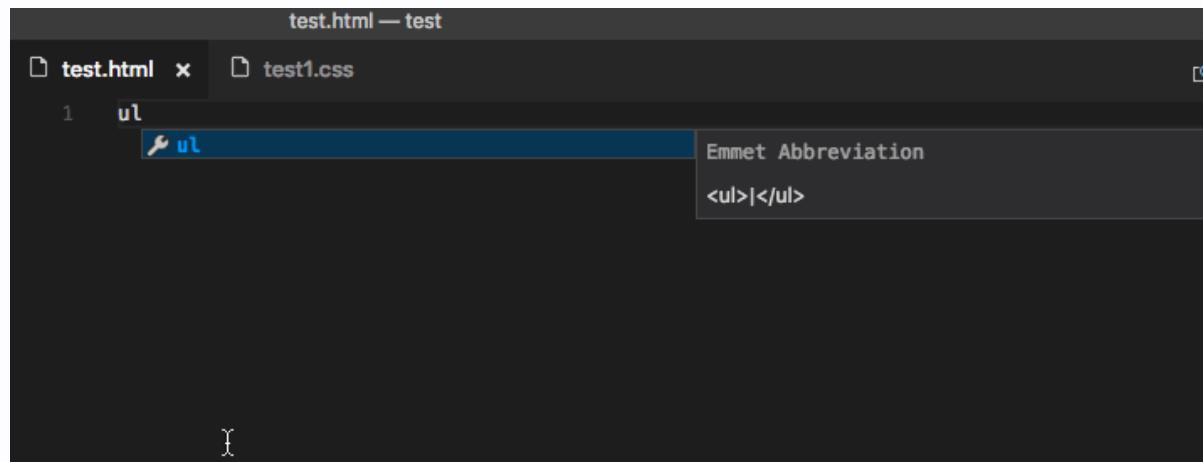
See the code context with Sticky Scroll - useful for long methods

The screenshot shows a code editor window for a TypeScript file named 'test.ts'. The file contains the following code:

```
TS test.ts      ×  
TS test.ts > 📁 TestClass > 🥑 function1 > 🥑 NestedFunction1  
1  class TestClass {  
2  
3    function1() {  
4  
5      function NestedFunction1() {  
6  
7  
8      }  
9  
10     }  
11  
12     function2() {  
13   }
```

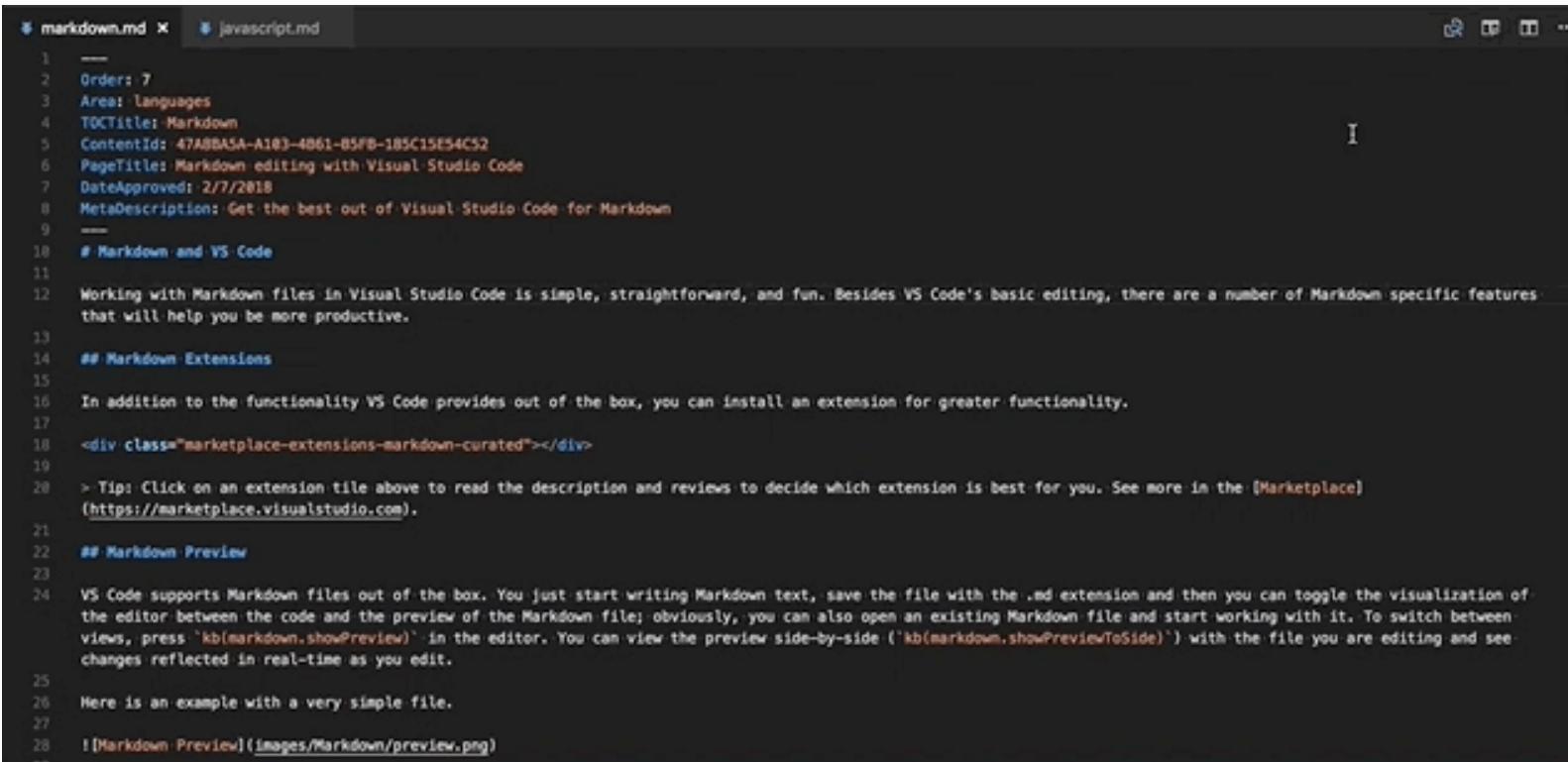
The code is displayed with syntax highlighting and line numbers. A vertical scrollbar is visible on the right side of the editor. A horizontal green bar highlights the closing brace of the innermost function definition at line 8, demonstrating the 'Sticky Scroll' feature which keeps the current line of code in view as the user scrolls.

Emmet



Generate HTML and
CSS from shorthand.
Works with multi-
cursors

Markdown preview



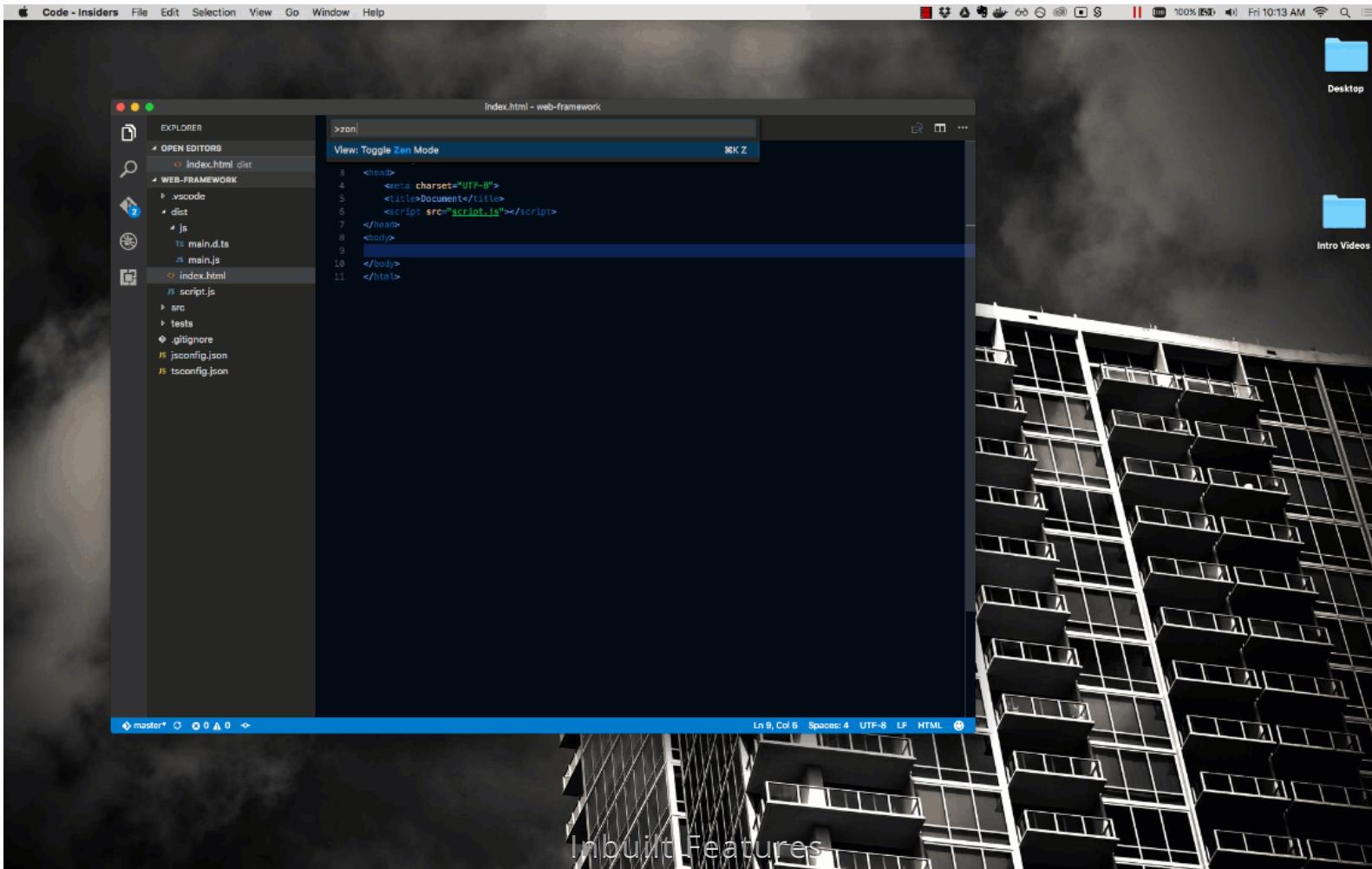
The screenshot shows a dark-themed instance of Visual Studio Code. In the top left, there are two tabs: one for 'markdown.md' and another for 'javascript.md'. The main editor area displays a portion of a Markdown file. The visible text includes:

```
1 —
2 Order: 7
3 Area: Languages
4 TOCTitle: Markdown
5 ContentId: 47A8B85A-A183-4861-85FB-185C15E54C52
6 PageTitle: Markdown editing with Visual Studio Code
7 DateApproved: 2/7/2018
8 MetaDescription: Get the best out of Visual Studio Code for Markdown
9 —
10 # Markdown and VS Code
11
12 Working with Markdown files in Visual Studio Code is simple, straightforward, and fun. Besides VS Code's basic editing, there are a number of Markdown specific features that will help you be more productive.
13
14 ## Markdown Extensions
15
16 In addition to the functionality VS Code provides out of the box, you can install an extension for greater functionality.
17
18 <div class="marketplace-extensions-markdown-curated"></div>
19
20 > Tip: Click on an extension tile above to read the description and reviews to decide which extension is best for you. See more in the Marketplace (https://marketplace.visualstudio.com).
21
22 ## Markdown Preview
23
24 VS Code supports Markdown files out of the box. You just start writing Markdown text, save the file with the .md extension and then you can toggle the visualization of the editor between the code and the preview of the Markdown file; obviously, you can also open an existing Markdown file and start working with it. To switch between views, press 'kb(markdown.showPreview)' in the editor. You can view the preview side-by-side ('kb(markdown.showPreviewToSide)') with the file you are editing and see changes reflected in real-time as you edit.
25
26 Here is an example with a very simple file.
27
28 ! [Markdown Preview] (images/Markdown/preview.png)
```

Productivity / Focus

Zen Mode

Focus on the code with Zen Mode



Inbuilt Features

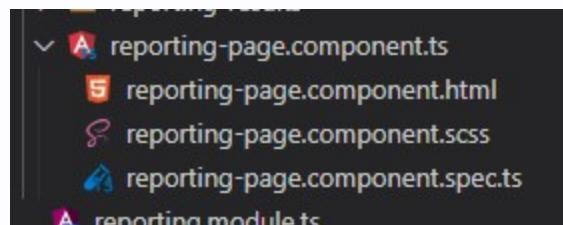
Errors

Jump to the **next error** with **F8**.

Really useful for going through compiler errors.

File Nesting

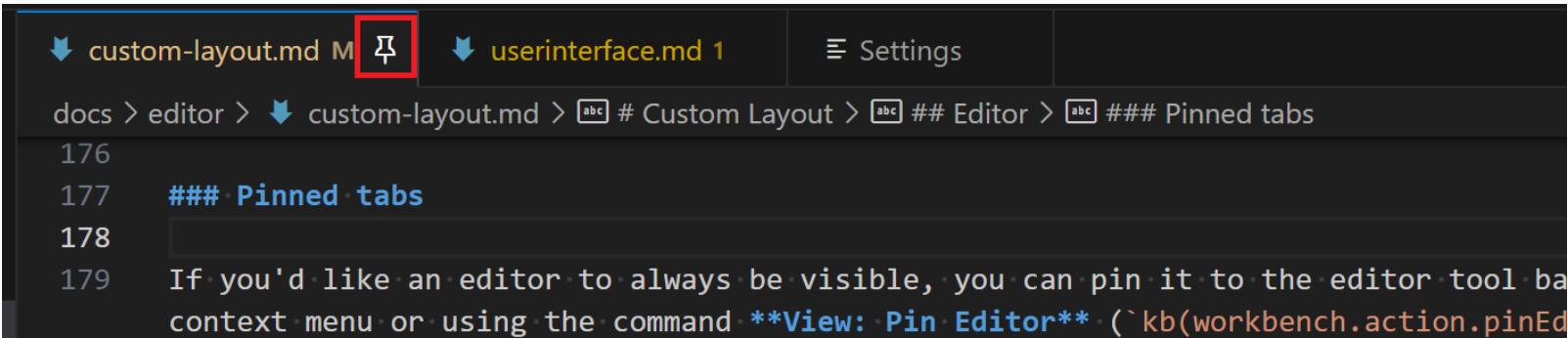
Nest related files under a parent file in the explorer.



```
"explorer.fileNesting.patterns": {  
    "*.component.ts": "$(capture).component.html, $(capture).component.spec.ts, $(capture).component.scss",  
    "README*": "AUTHORS,CHANGELOG*,CODE_OF_CONDUCT*,CONTRIBUTING*,LICENSE*"  
}
```

Pinned Tabs

Pinned Tabs allow you to keep a file open

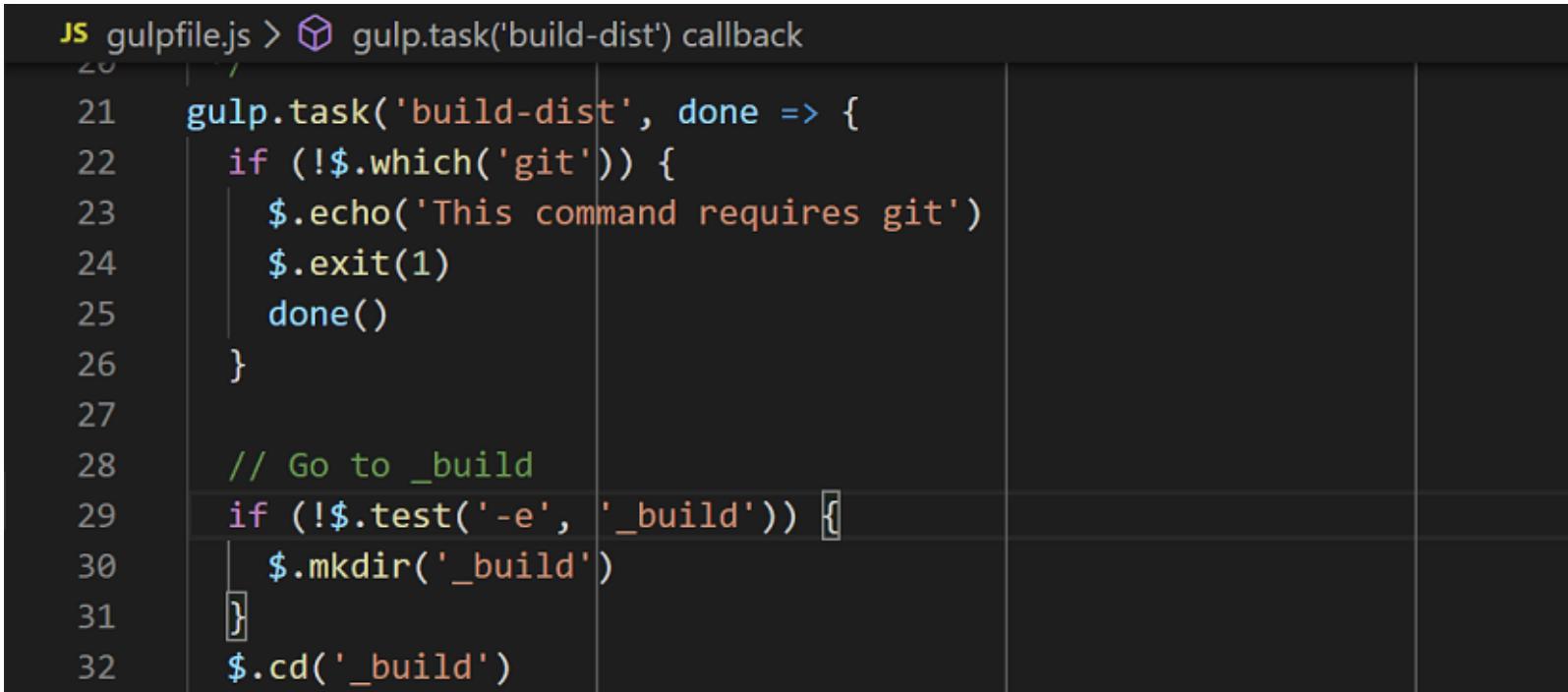


The screenshot shows the VS Code interface with two tabs open: "custom-layout.md" and "userinterface.md 1". The "custom-layout.md" tab has a red box around its pinning icon. The status bar at the bottom displays the navigation path: "docs > editor > custom-layout.md > # Custom Layout > ## Editor > ### Pinned tabs". The code editor shows a section titled "### Pinned tabs" with the following text:

```
176
177 ### Pinned tabs
178
179 If you'd like an editor to always be visible, you can pin it to the editor tool bar context menu or using the command View: Pin Editor (^kb(workbench.action.pinEd
```

Vertical Rulers

Make sure your code isn't getting too long and hard to read.



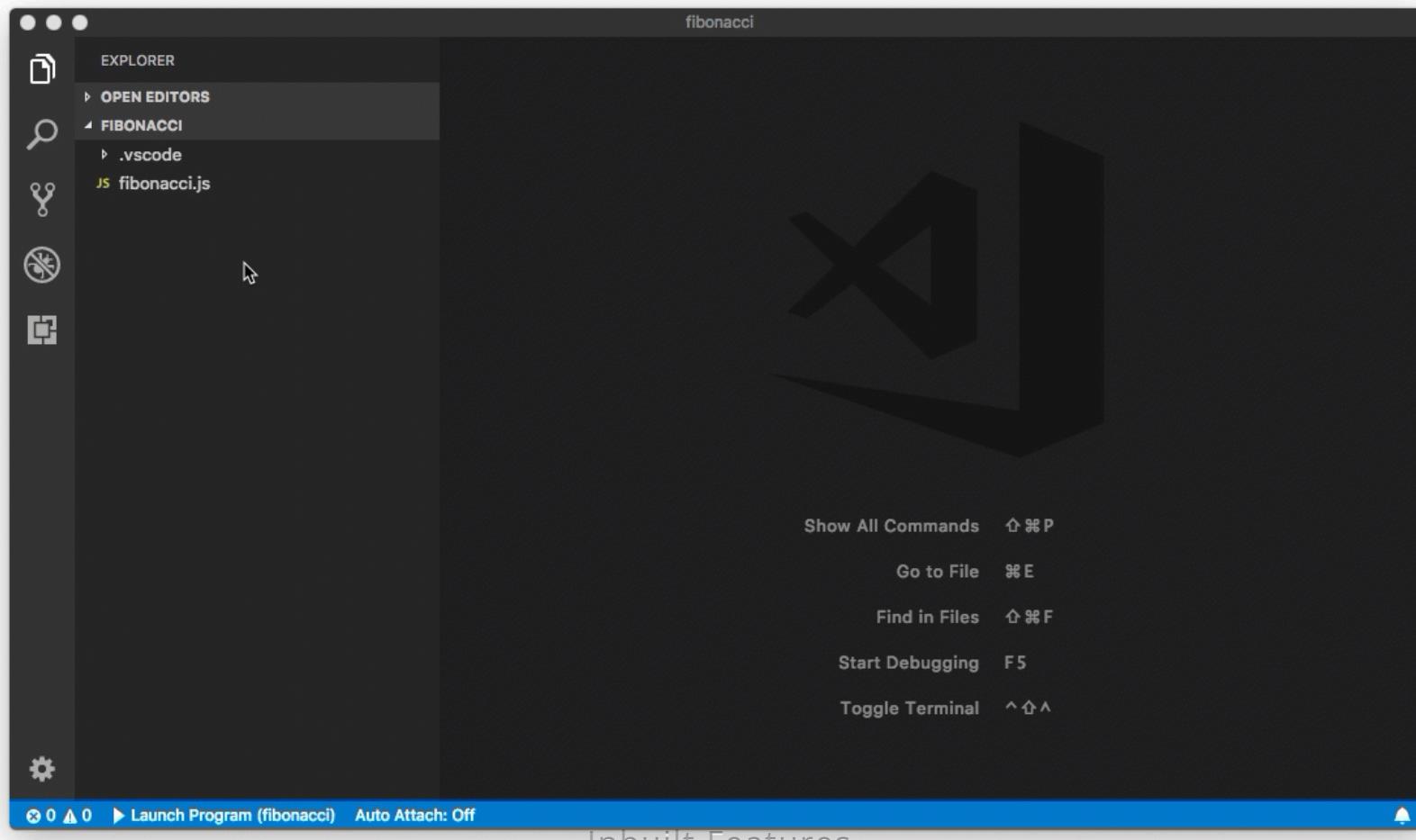
A screenshot of a code editor window titled "JS gulpfile.js > gulp.task('build-dist') callback". The code editor displays the following JavaScript code:

```
JS gulpfile.js > gulp.task('build-dist') callback
21  gulp.task('build-dist', done => {
22    if (!$.which('git')) {
23      $.echo('This command requires git')
24      $.exit(1)
25      done()
26    }
27
28    // Go to _build
29    if (!$.test('-e', '_build')) {
30      $.mkdir('_build')
31    }
32    $.cd('_build')
```

The code editor features vertical ruler lines at the right edge of the code area, indicating specific line lengths or column positions. The first ruler line is positioned at approximately column 75, and the second ruler line is positioned at approximately column 150.

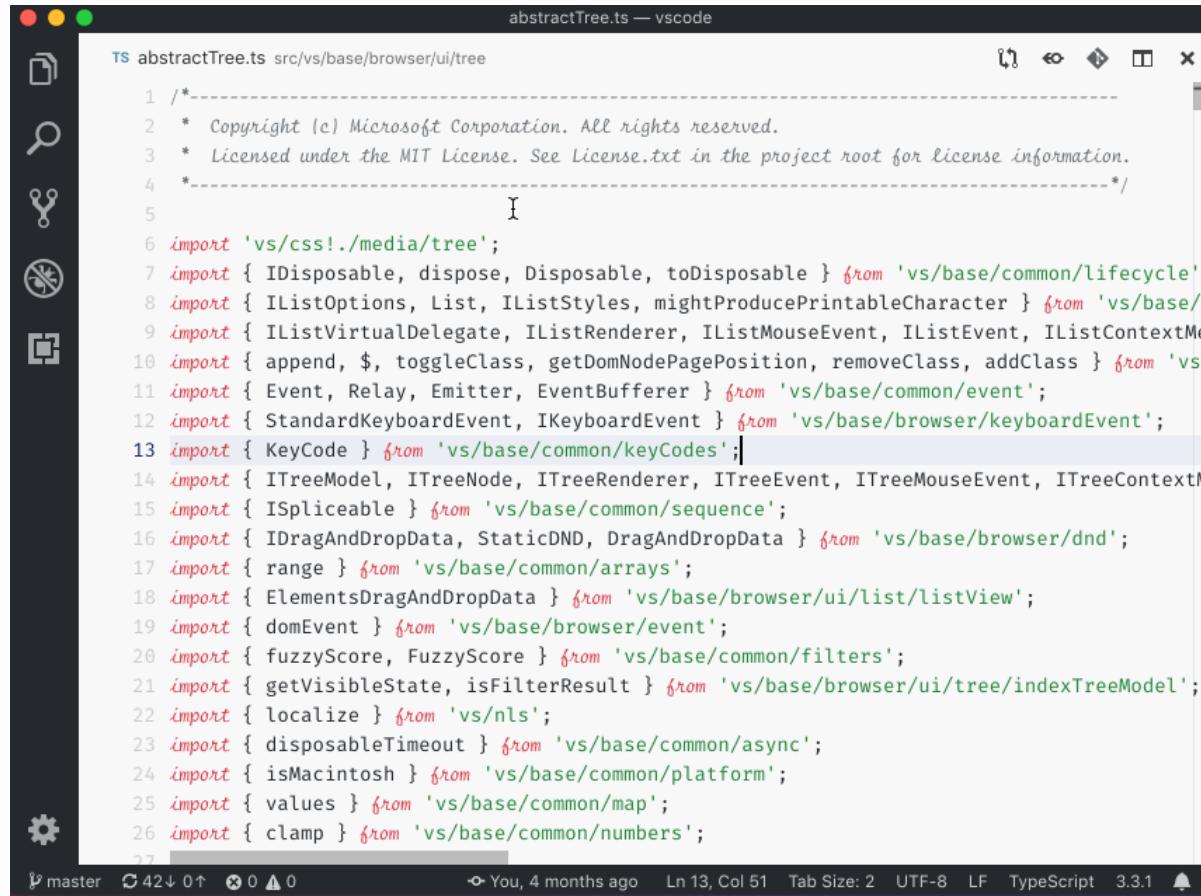
LogPoints

Non-breaking log points to show logging



Inbuilt Features

Screencast Mode



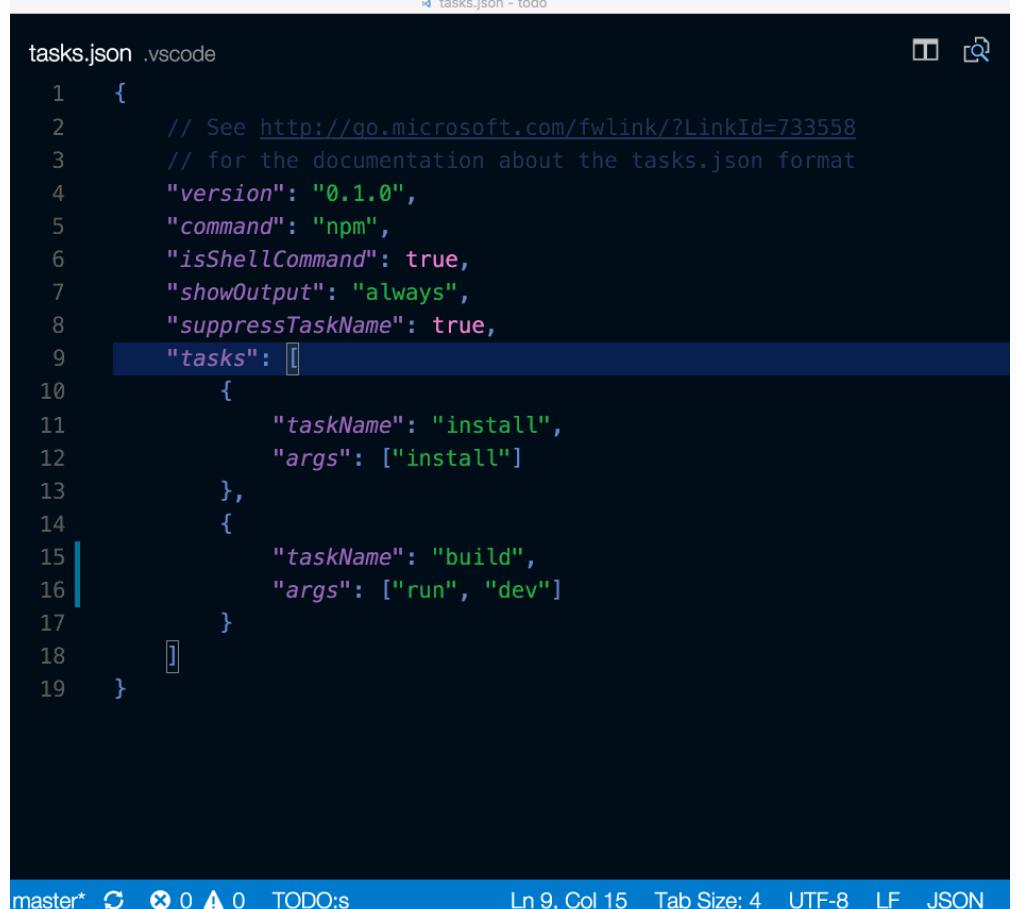
A screenshot of the Visual Studio Code (VS Code) interface in dark mode. The main editor tab is titled "abstractTree.ts — vscode". The code editor displays the "abstractTree.ts" file from the "src/vs/base/browser/ui/tree" directory. The code is a TypeScript file containing imports and class definitions for a tree component. The status bar at the bottom shows the file path, commit information ("You, 4 months ago"), file statistics ("Ln 13, Col 51"), encoding ("UTF-8 LF"), version ("TypeScript 3.3.1"), and a bell icon.

```
abstractTree.ts — vscode
TS abstractTree.ts src/vs/base/browser/ui/tree
1 /**
2  * Copyright (c) Microsoft Corporation. All rights reserved.
3  * Licensed under the MIT License. See License.txt in the project root for license information.
4 */
5
6 import 'vs/css!./media/tree';
7 import { IDisposable, dispose, Disposable, toDisposable } from 'vs/base/common/lifecycle';
8 import { IListOptions, List, IListStyles, mightProducePrintableCharacter } from 'vs/base/b
9 import { IListVirtualDelegate, IListRenderer, IListMouseEvent, IListEvent, IListContextMe
10 import { append, $, toggleClass, getDomNodePagePosition, removeClass, addClass } from 'vs/
11 import { Event, Relay, Emitter, EventBufferer } from 'vs/base/common/event';
12 import { StandardKeyboardEvent, IKeyboardEvent } from 'vs/base/browser/keyboardEvent';
13 import { KeyCode } from 'vs/base/common/keyCodes';
14 import { ITreeModel, ITreeNode, ITreeRenderer, ITreeEvent, ITreeMouseEvent, ITreeContextM
15 import { ISpliceable } from 'vs/base/common/sequence';
16 import { IDragAndDropData, StaticDND, DragAndDropData } from 'vs/base/browser/dnd';
17 import { range } from 'vs/base/common/arrays';
18 import { ElementsDragAndDropData } from 'vs/base/browser/ui/list/listView';
19 import { domEvent } from 'vs/base/browser/event';
20 import { fuzzyScore, FuzzyScore } from 'vs/base/common/filters';
21 import { getVisibleState, isFilterResult } from 'vs/base/browser/ui/tree/indexTreeModel';
22 import { localize } from 'vs/nls';
23 import { disposableTimeout } from 'vs/base/common/async';
24 import { isMacintosh } from 'vs/base/common/platform';
25 import { values } from 'vs/base/common/map';
26 import { clamp } from 'vs/base/common/numbers';
27
```

master 42 0 0 0 0 You, 4 months ago Ln 13, Col 51 Tab Size: 2 UTF-8 LF TypeScript 3.3.1

Task Runners

Run tasks like build,
test and other custom
tasks in Task Runners.



The screenshot shows the VS Code interface with a dark theme. A tab labeled "TASKS.JSON - TODO" is open. The code editor displays the contents of a "tasks.json" file:

```
tasks.json .vscode
1  {
2      // See http://go.microsoft.com/fwlink/?LinkId=733558
3      // for the documentation about the tasks.json format
4      "version": "0.1.0",
5      "command": "npm",
6      "isShellCommand": true,
7      "showOutput": "always",
8      "suppressTaskName": true,
9      "tasks": [
10         {
11             "taskName": "install",
12             "args": ["install"]
13         },
14         {
15             "taskName": "build",
16             "args": ["run", "dev"]
17         }
18     ]
19 }
```

The status bar at the bottom shows "master*" and various icons, along with "Ln 9, Col 15" and "Tab Size: 4".

Remote Development

Remote Description

Remote via SSH

Connect to remote machines with Visual Studio Code via SSH.

Work in WSL

Work in Windows Subsystem for Linux.

Develop in Containers

Work in a Docker Container.

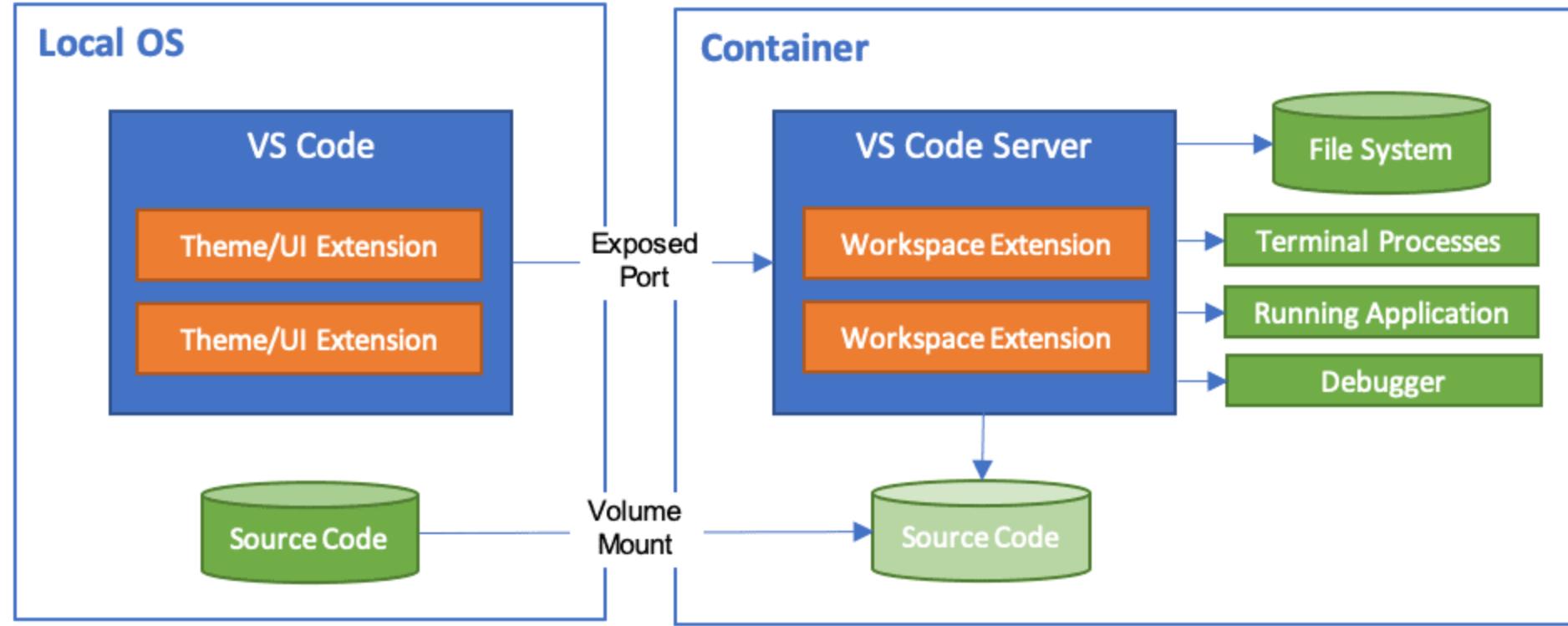
GitHub Codespaces

Work in codespace with Visual Studio Code.

Inbuilt Features

Dev Containers

[Dev Containers](#) uses a `devcontainer.json` file in your project tells VS Code how to access (or create) a development container with a well-defined tool and runtime stack.



Extensions

Extensions

45

Installation

Install extensions with `Ctrl+Shift+X`. You can add to the workspace `@recommended` extensions for a project.

Most Popular extensions can be found with
`@popular`

| | | | | | |
|--|--|---|---|---|---|
|  Jupyter Microsoft  microsoft.com  72.6M Jupyter notebook support, interactive programming and computing that supports...   |  Extension Pack for Java Microsoft  microsoft.com  23.4M Popular extensions for Java development that provides Java IntelliSense, debugging...   |  C/C++ Extension Pack Microsoft  microsoft.com  23M Popular extensions for C++ development in Visual Studio Code.   |  Python Extension Pack Don Jayamanne   7M Popular Visual Studio Code extensions for Python   |  Remote Development Microsoft  microsoft.com  4.8M An extension pack that lets you open any folder in a container, on a remote...   |  PHP Extension Pack Xdebug  xdebug.org  4.5M Everything you need for PHP development   |
|  Live Sass Compiler Ritwick Dey   2.5M Compile Sass or Scss to CSS at realtime with live browser reload.   |  json ZainChen   2.1M Json for Visual Studio Code   |  Auto Complete Tag Jun Han   2M Extension adds autocomplete tag and paired tag automatically for HTML/XML   |  Spring Boot Extension VMware  vmware.com  1.9M Collection of extensions for developing Spring Boot applications   |  Git Extension Pack Don Jayamanne   1.6M Popular Visual Studio Code extensions for Git   |  Live Sass Compiler Glenn Marks   1.4M Compile Sass or Scss to CSS at realtime.   |
|  Salesforce Extension Salesforce  salesforce.com  1.2M Extensions for developing on the Salesforce Platform  |  Angular Essentials (Vue) John Papa  johnpapa.net  1.2M Essential extensions for Angular developers  |  Unity Tools Avin Zarlez   1.2M Various tools to help with Unity development  |  Azure Tools Microsoft  microsoft.com  1M Get web site hosting, SQL and MongoDB data, Docker  |  Node.js Extension Pack Wade Anderson   980K Popular VS Code extensions for Node.js development.  |  Python Path Mathias Gesbert   868K Python imports utils.  47 |

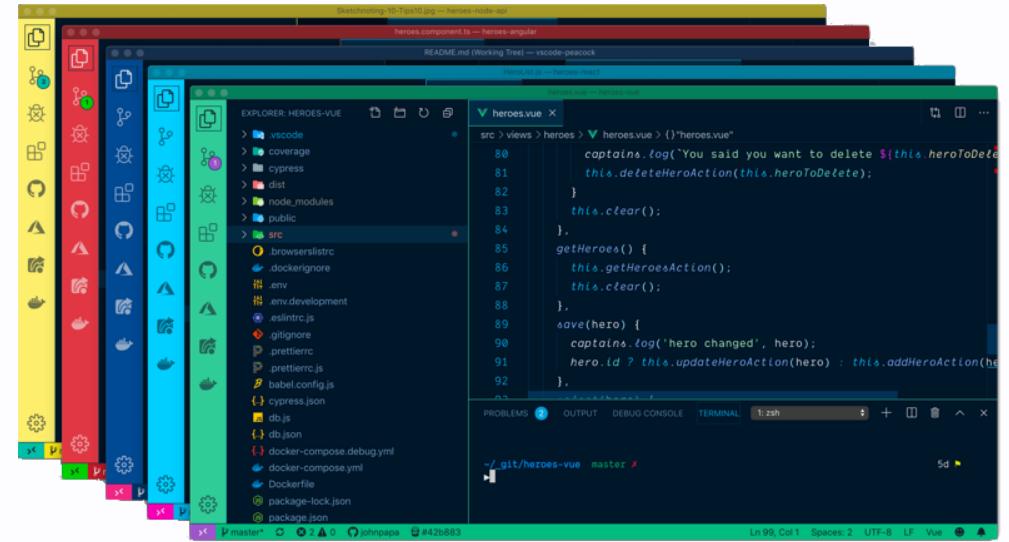
Marp

This slide deck written in Markdown within VSCode. I used the Marp extension to preview it.

Marp has a CLI - so this slide has a CICD pipeline 😊

Peacock

Peacock allows you to colour code VS Code.



IntelliCode

AI-assisted
development features
for Python,
TypeScript/JavaScript
and Java developers

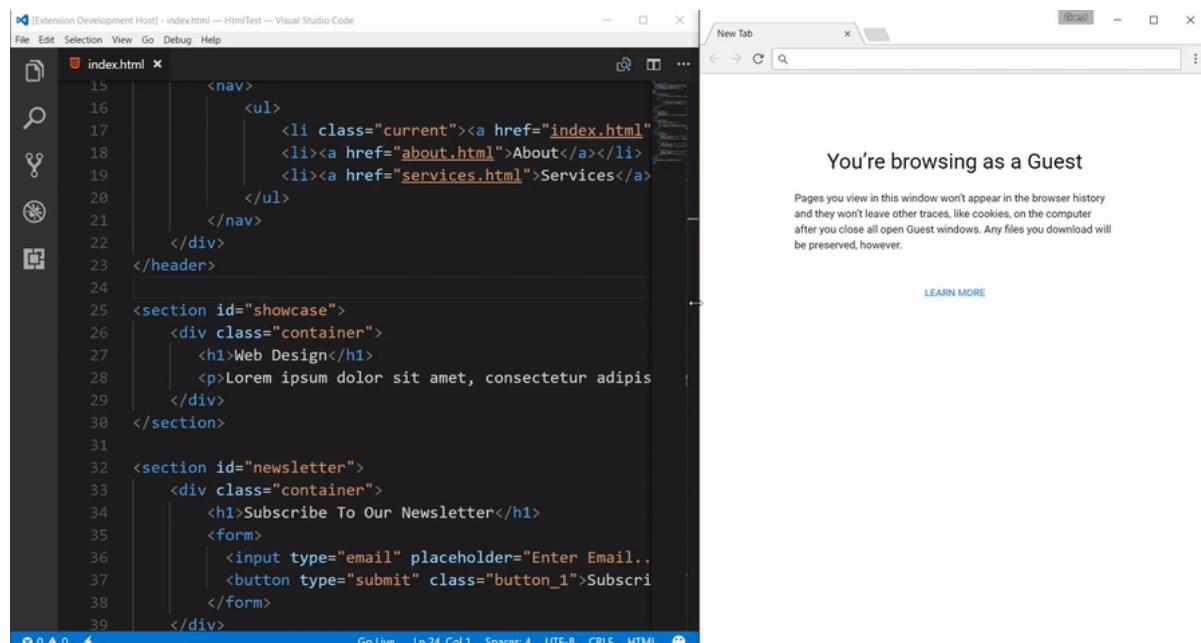
IntelliCode

```
loss = tf.reduce_sum(tf.square(linear_model - y))  
optimizer = tf.train.GradientDescentOptimizer(0.01)  
  
train = optimizer
```

LiveServer

Launch a development local Server with live reload feature for static & dynamic pages

LiveServer



The screenshot shows the Visual Studio Code interface with the 'LiveServer' extension installed. On the left, the 'index.html' file is open in the editor, displaying HTML code for a navigation bar and two sections. On the right, a browser window titled 'New Tab' shows a guest message: 'You're browsing as a Guest'. Below this message is a note about guest browsing: 'Pages you view in this window won't appear in the browser history and they won't leave other traces, like cookies, on the computer after you close all open Guest windows. Any files you download will be preserved, however.' A 'LEARN MORE' link is also present. The bottom status bar of the VS Code window shows 'Go Live' and other settings.

Indent Rainbow

Indent Rainbow

```
1 import nimbench          1 import nimbench
2
3 bench(str, m):
4     for n in 0..<m:
5         var dest ="apple"
6         while(dest.len<100):
7             var
8                 offs=dest.len-5
9                 i=offs
10                while i<offs+10:
11                    dest.add(dest[i])
12                    i.inc
13                doNotOptimizeAway(dest)
14
15 runBenchmarks()          1 import nimbench
2
3 bench(str, m):
4     for n in 0..<m:
5         var dest ="apple"
6         while(dest.len<100):
7             var
8                 offs=dest.len-5
9                 i=offs
10                while i<offs+10:
11                    dest.add(dest[i])
12                    i.inc
13                doNotOptimizeAway(dest)
14
15 runBenchmarks()
```

Path Intellisense

Path Intellisense
autocompletes
filenames

```
EXPLORER
WORKING FILES 1 UNSAVED
● index.html

MY-PROJECT
CSS
  styles.css
SRC
  foo.js
  app.js
index.html

• index.html
1  <!DOCTYPE html>
2  <html lang="en">
3  <head>
4    <meta charset="UTF-8">
5    <title>Document</title>
6    ...
7  </head>
8  <body>
9    ...
10 </body>
11 </html>
```

Code Spell Checker

Code Spell Checker for source code

```
• validator.ts src
  1 import {
  2   | TextDocument, Diagnostic, DiagnosticSeverity,
  3 } from 'vscode-languageserver';
  4 import { isWordInDictionary } from './spellChecker';
  5 import * as Text from './util/text';
  6
  7 import * as Rx from 'rx';
  8 import { merge } from 'tsmerge';
  9
 10 /**
 11  * defalt costants
 12 */
 13
 14 const defaultMaxNumberOfProblems = 200;
 15 const defaultMinWordLength      = 4;
 16
 17 export interface ValidationOptions {
 18   maxNumberOfProblems?: number;
 19   minWordLength?: number;
 20   // words to always flag as an error
 21   flagWords?: string[];
 22 }
 23
 24 export function validateTextDocument(textDocument: TextDocument, options: ValidationOpti
 25   | return validateTextDocumentAsync(textDocument, options)
 26   |   .toArray()
```

Error Lens

Improve highlighting of errors, warnings and other language diagnostics.

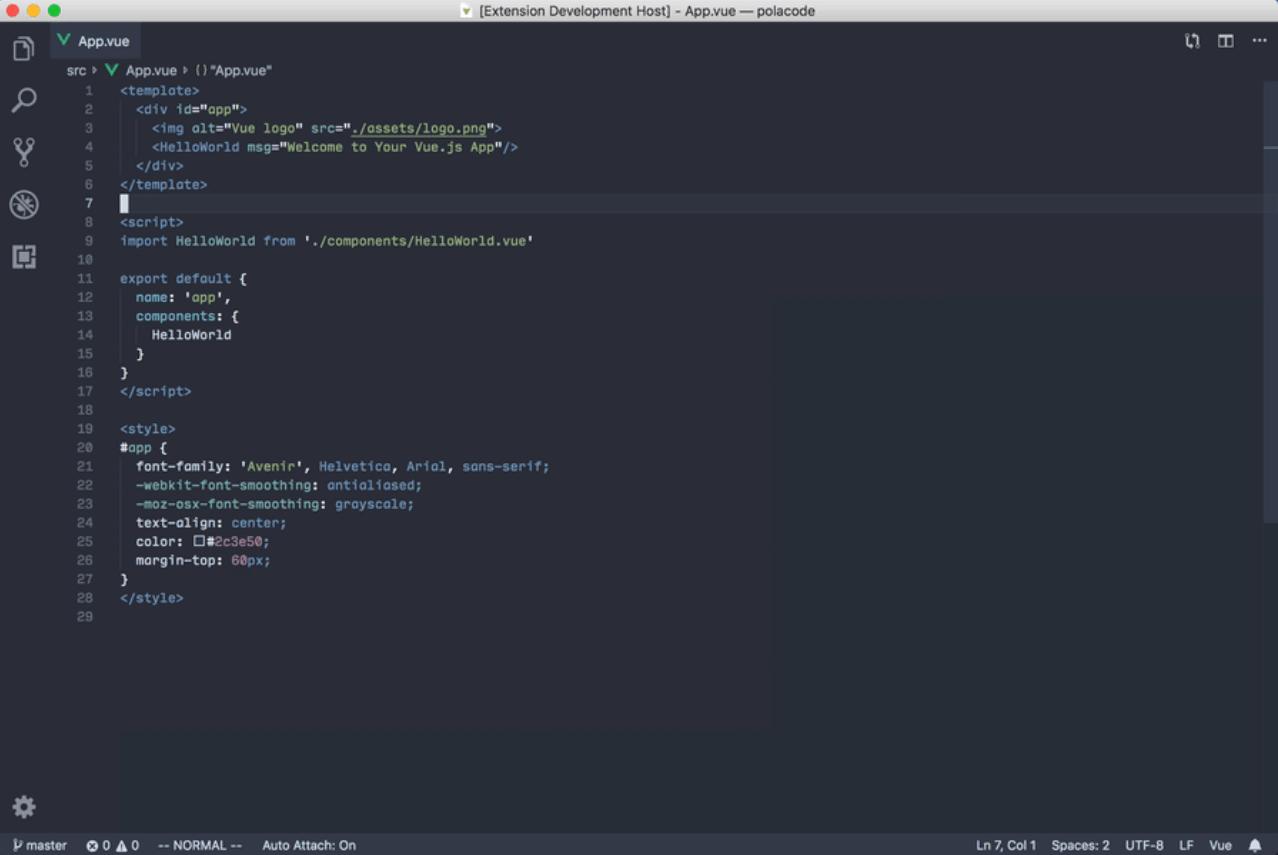
Error Lens

```
vscode.workspace.onDidOpenTextDocument(textDocument => {
  updateDecorationsForUri(textDocument.uri) Missing semicolon (semicolon)
}, undefined, context.subscriptions; ')' expected.
```

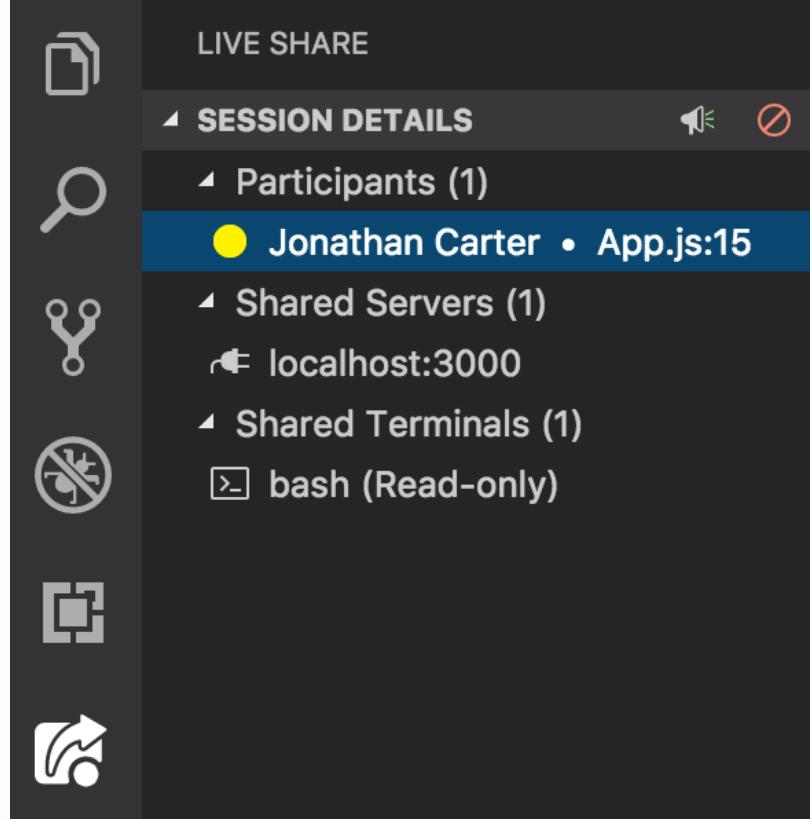
Polacode

 Polaroid for your code. Take screenshots of your code

Polacode



```
src > App.vue > () "App.vue"
1  <template>
2    <div id="app">
3      
4      <HelloWorld msg="Welcome to Your Vue.js App"/>
5    </div>
6  </template>
7
8  <script>
9  import HelloWorld from './components/HelloWorld.vue'
10
11 export default {
12   name: 'app',
13   components: {
14     HelloWorld
15   }
16 }
17 </script>
18
19 <style>
20 #app {
21   font-family: 'Avenir', Helvetica, Arial, sans-serif;
22   -webkit-font-smoothing: antialiased;
23   -moz-osx-font-smoothing: grayscale;
24   text-align: center;
25   color: #2c3e50;
26   margin-top: 60px;
27 }
28 </style>
29
```



LiveShare

Real-time collaborative development from the comfort of your favourite tools.

[LiveShare / Docs](#)

Jira and Bitbucket

Bringing the power of Jira and Bitbucket to VS Code

- You can create and view issues
- Start work on issues
- Create pull requests
- Do code reviews
- Start builds
- Get build statuses and more!

Jira and Bitbucket

GitHub Copilot

GitHub Copilot Your AI
pair programmer

```
1 def common_prefix(a, b):
2     """Return the common prefix of two lists."""
3     if len(a) < len(b):
4         return common_prefix(b, a)
5     for i in range(len(a)):
6         if a[i] != b[i]:
7             return a[:i]
8     return a
9
10
11 | |
```

C# Dev Kit

Official C# extension from Microsoft

- Project System / Solution Explorer
- Code Editing (Uses the C# extension)
- Package Management
- Debugging
- Testing

C# Dev Kit

Markdown Example

```
Console.WriteLine("C# Example");
✓ 0.0s
```

csharp - C# Script Code

C# Example

```
gantt
title A Gantt Diagram
dateFormat YYYY-MM-DD
section Section
A task :a1, 2024-01-01, 1d
Another task :after a1, 2d
section Another
Task in sec :2024-01-04, 3d
another task : 2d
✓ 0.0s
```

mermaid - Mermaid Code

```
<h1>HTML Example</h1>
✓ 0.0s
```

html - HTML Code

HTML Example

Polygot Notebooks

Polygot Notebooks allows C#, F#, PowerShell, JavaScript, SQL, KQL, Python, R, HTML, HTTP, Mermaid.

API Clients

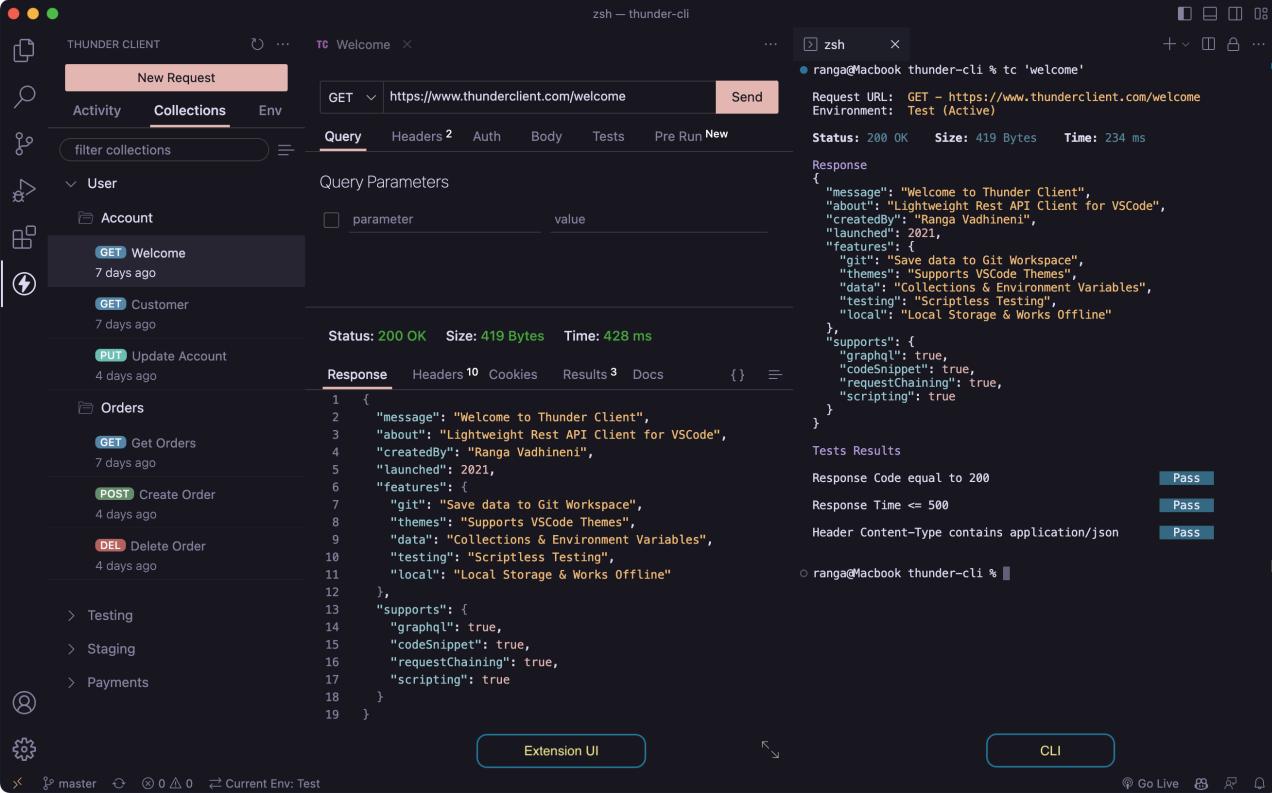
REST Client

```
GET https://example.com/topics/1 HTTP/1.1  
  
POST https://example.com/comments HTTP/1.1  
content-type: application/json  
  
{  
    "name": "sample",  
    "time": "Wed, 21 Oct 2015 18:27:50 GMT"  
}
```

```
curl https://www.example.com
```

Thunder Client

Lightweight Rest API Client for VS Code



```
2 export class MyClass {  
3  
4     /**  
5      * MyMethod  
6      * * Important information is highlighted  
7      * ! Deprecated method, do not use  
8      * ? Should this method be exposed in the public API?  
9      * TODO: refactor this method so that it conforms to the API  
10     * @param myParam The parameter for this method  
11     */  
12     public MyMethod(myParam: any): void {  
13         let myVar: number = 123;  
14  
15         /* This is highlighted  
16         if (myVar > 0) {  
17             throw new TypeError(); //! This is an alert  
18         }  
19  
20         //? This is a query  
21         let x = 1;  
22  
23         //!!! this.lineOfCode() === commentedOut;  
24  
25         //TODO: Create some test cases  
26     }  
27 }
```

Better Comments

Better Comments
colour codes your
commit messages

A screenshot of the Visual Studio Code interface. On the left is the sidebar with various icons. The main area shows a tree view of files under 'todo-tree'. One file, 'extension.js', is open in the editor. In the editor, several lines of code contain todo items, which are highlighted with purple background and white text. The bottom status bar indicates there are 13 todo items in total.

TODO Tree

TODO Tree quickly find all your todo items.

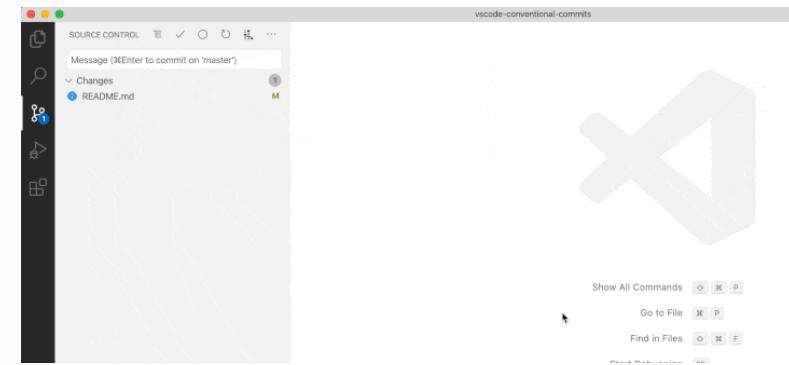
Conventional Commits

Conventional Commits

```
<type>[optional scope]: <description>
```

```
[optional body]
```

```
[optional footer(s)]
```



Follows conventionalcommits.org and uses [gitmoji](https://gitmoji.com)
which then dovetails to semver.org

```
feat(api): ✨ Add Get User Endpoint
```

Allow users to get the profile

ABC-123

Unique Lines

Keep **unique lines** of text and remove duplicates from current selection. Also includes a command to shuffle currently selected lines.

| Before | After |
|--------|-------|
| A | A |
| B | B |
| B | C |
| C | |
| C | |

Extensions

Encode Decode

Encode Decode converts text.

- Convert String **to/from** Base64, HTML Entities, JSON Byte Array, JSON String, Unicode, XML Entities
- Convert String to MD5/SHA1/SHA256/SHA512 (as Base64 or Hex)

A screenshot of a code editor window showing the file `extension.ts`. The code is written in TypeScript and handles the activation of a VS Code extension. It includes imports for `vscode`, `BookmarksController`, and `WhatsNewManager`. The code sets up a provider, registers it with the viewer, shows the page in activation, and adds a command to the context menu. It also loads pre-saved bookmarks from workspace state.

```
extension.ts src/extension.ts/ activate/ vscode.workspace.onDidChange
48     return vscode.window.createTextEditorDecorationType(decorationOp
49 }
50
51 // this method is called when vs code is activated
52 export function activate(context: vscode.ExtensionContext) {
53
54     let bookmarks: BookmarksController;
55     let activeEditorCountLine: number;
56     let timeout: NodeJS.Timer;
57
58     const provider          BookmarksContentProvider();
59     const viewer = new WhatsNewManager(context).registerContentProv
60     viewer.showPageInActivation();
61     context.subscriptions.push(vscode.commands.registerCommand("book
62
63     // load pre-saved bookmarks
64     const didLoadBookmarks: boolean = loadWorkspaceState();
```

Bookmarks

Bookmark your code
and quickly jump to
bookmarks.

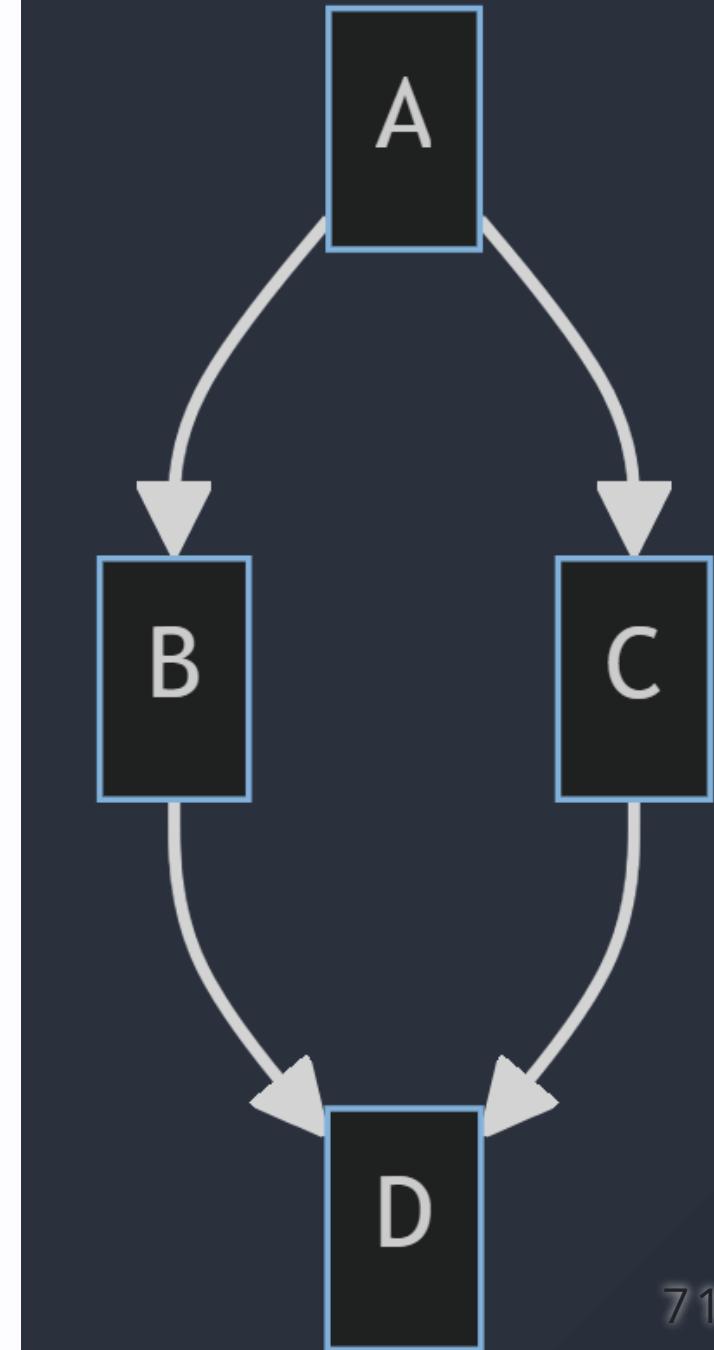
Markdown Preview

Mermaid Support

[Markdown Preview Mermaid Support](#) allows you to create [Mermaid JS](#) documents that can be included in Markdown documents.

```
graph TD;
    A--->B;
    A--->C;
    B--->D;
    C--->D;
```

Extensions



Aside: Mermaid JS can generate

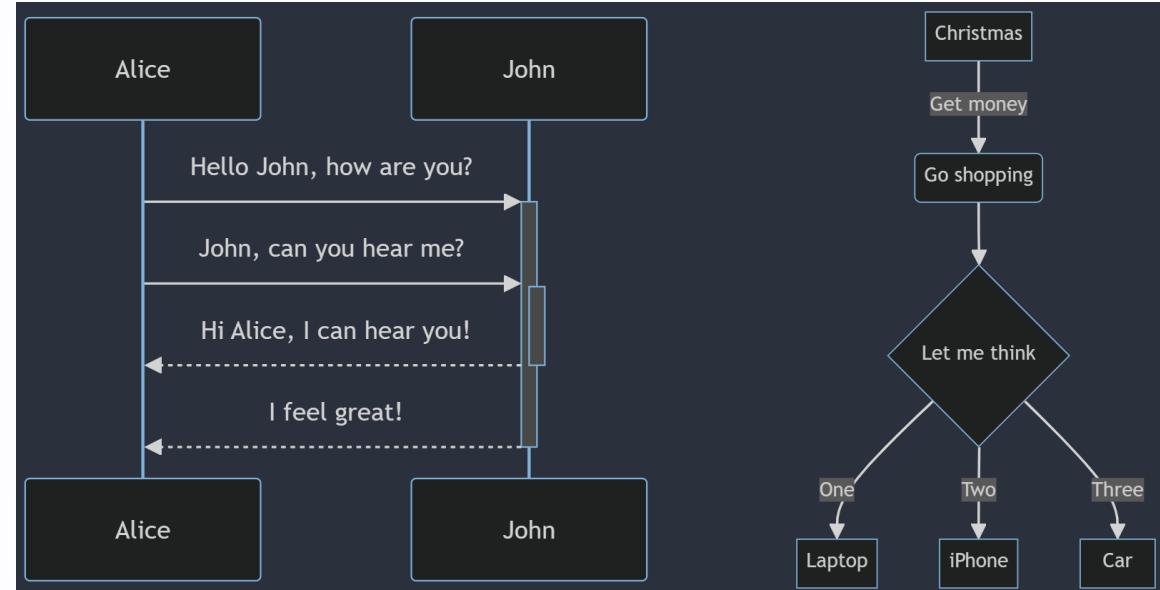
- Generate Flowchart
- Sequence Diagram
- Class Diagram
- State Diagram
- Entity Relationship Diagram
- User Journey
- Gantt
- Pie Chart
- Quadrant Chart
- Requirement Diagram

```
sequenceDiagram
```

```
    Alice->>+John: Hello John, how are you?  
    Alice->>+John: John, can you hear me?  
    John-->-Alice: Hi Alice, I can hear you!  
    John-->>-Alice: I feel great!
```

```
flowchart TD
```

```
    A[Christmas] -->|Get money| B((Go shopping))  
    B --> C{Let me think}  
    C -->|One| D[Laptop]  
    C -->|Two| E[iPhone]  
    C -->|Three| F[fa:fa-car Car]
```



```
{} heroes.json ✘  
{} heroes.json > [ ]members > {} 0 > [ ]powers  
1 {  
2   "squadName": "Super hero squad",  
3   "homeTown": "Metro City",  
4   "formed": 2016,  
5   "secretBase": "Super tower",  
6   "active": true,  
7   "members": [  
8     {  
9       "name": "Molecule Man",  
10      "age": 29,  
11      "secretIdentity": "Dan Jukes",  
12      "powers": [  
13        "Radiation resistance",  
14        "Turning tiny",  
15        "Radiation blast"  
16      ]  
17    },  
18    {  
19      "name": "Aykut Sarac",  
20      "age": 21,  
21      "secretIdentity": "John Doe",  
22      "powers": [  
23        "React",  
24        "TypeScript",  
25        "JavaScript"  
26      ]  
27    },  
28  ]
```

JSON Crack

JSON Crack
seamlessly
visualize your
JSON data
instantly into
graphs.

SemanticDiff

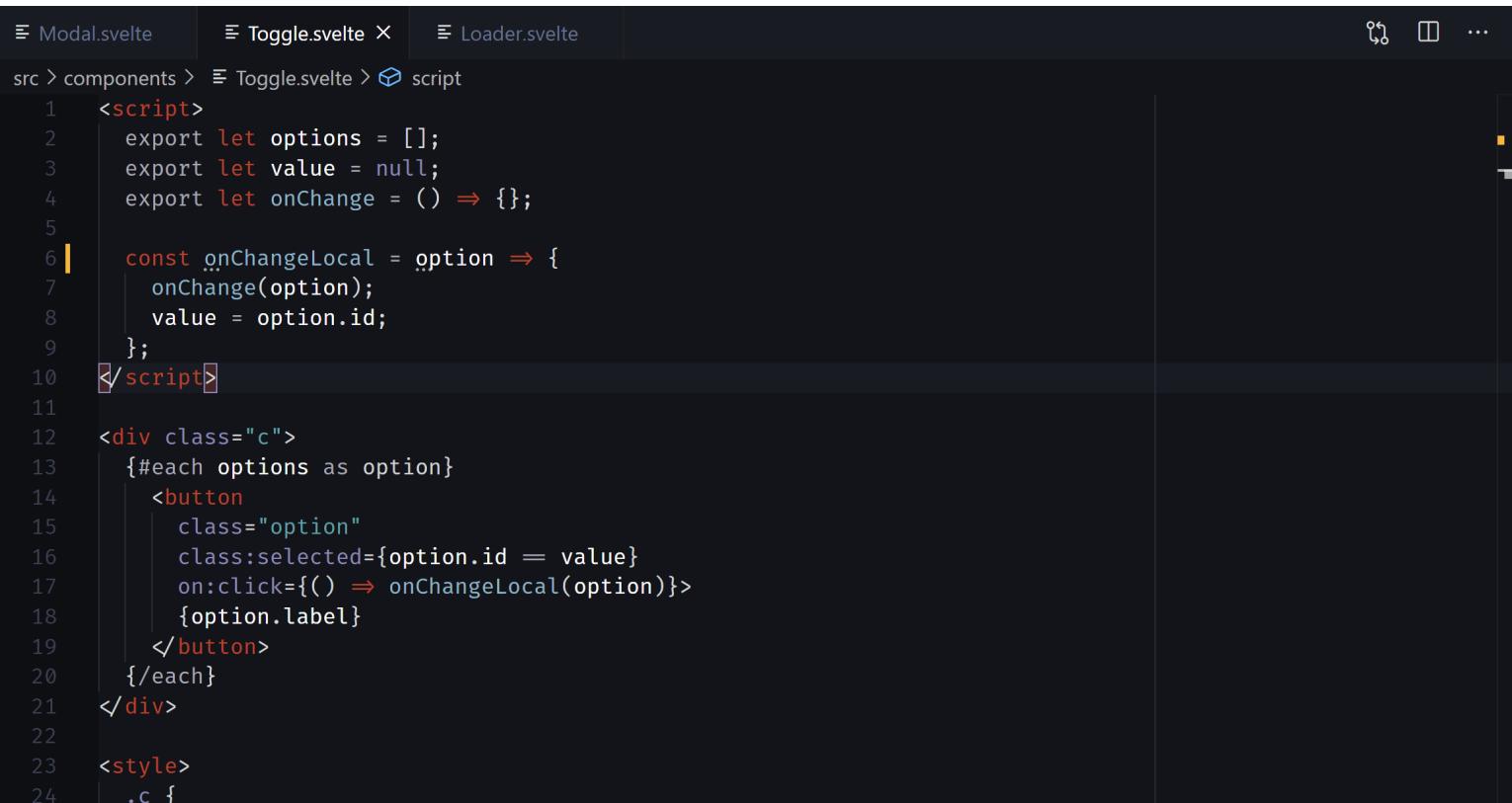
SemanticDiff is a
programming
language aware
diffs.

Can show
differences when
you move code.

```
File Edit Selection View Go Run Terminal Help 0077.py - semanticdiff-testcases - Visual Studio Code home > michael > projects > semanticdiff-testcases > python > 0077.py 0077.py (b9a2bc2c) ↔ 0077.py (77f120c0) ↗ x 1 import os 2 import hashlib 3 4 def print_hashes(path): 5     for file in os.listdir(path): 6         file_path = os.path.join(path, file) 7         if os.path.islink(file_path): 8             continue 9         if not os.path.isfile(file_path): 10            continue 11 12         def calc_hash(file_path): 13             h = hashlib.md5() 14             with open(file_path, "rb") as fp: 15                 while True: 16                     data = fp.read(4096) 17                     if not data: 18                         break 19                     h.update(data) 20 21         return h 22 23         h = calc_hash(file_path) 24         print(f"\{h.hexdigest()\} {file}\") 25 26 print_hashes(".") 27 1 import os 2 import hashlib 3 4 def calc_hash(file_path): 5+     h = hashlib.sha256() 6     with open(file_path, "rb") as fp: 7         while True: 8             data = fp.read(4096) 9+             if data == b"": 10                 break 11             h.update(data) 12 13     return h 14 15+ def print_hashes(path): 16+     for file in os.listdir(path): 17+         file_path = os.path.join(path, file) 18+         if os.path.islink(file_path): 19+             continue 20+         if not os.path.isfile(file_path): 21+             continue 22+ 23         h = calc_hash(file_path) 24         print(f"\{h.hexdigest()\} {file}\") 25 26 print_hashes(".") 27
```

FootSteps

FootSteps
Highlight and
navigate
between your
most recently
edited chunks of
code

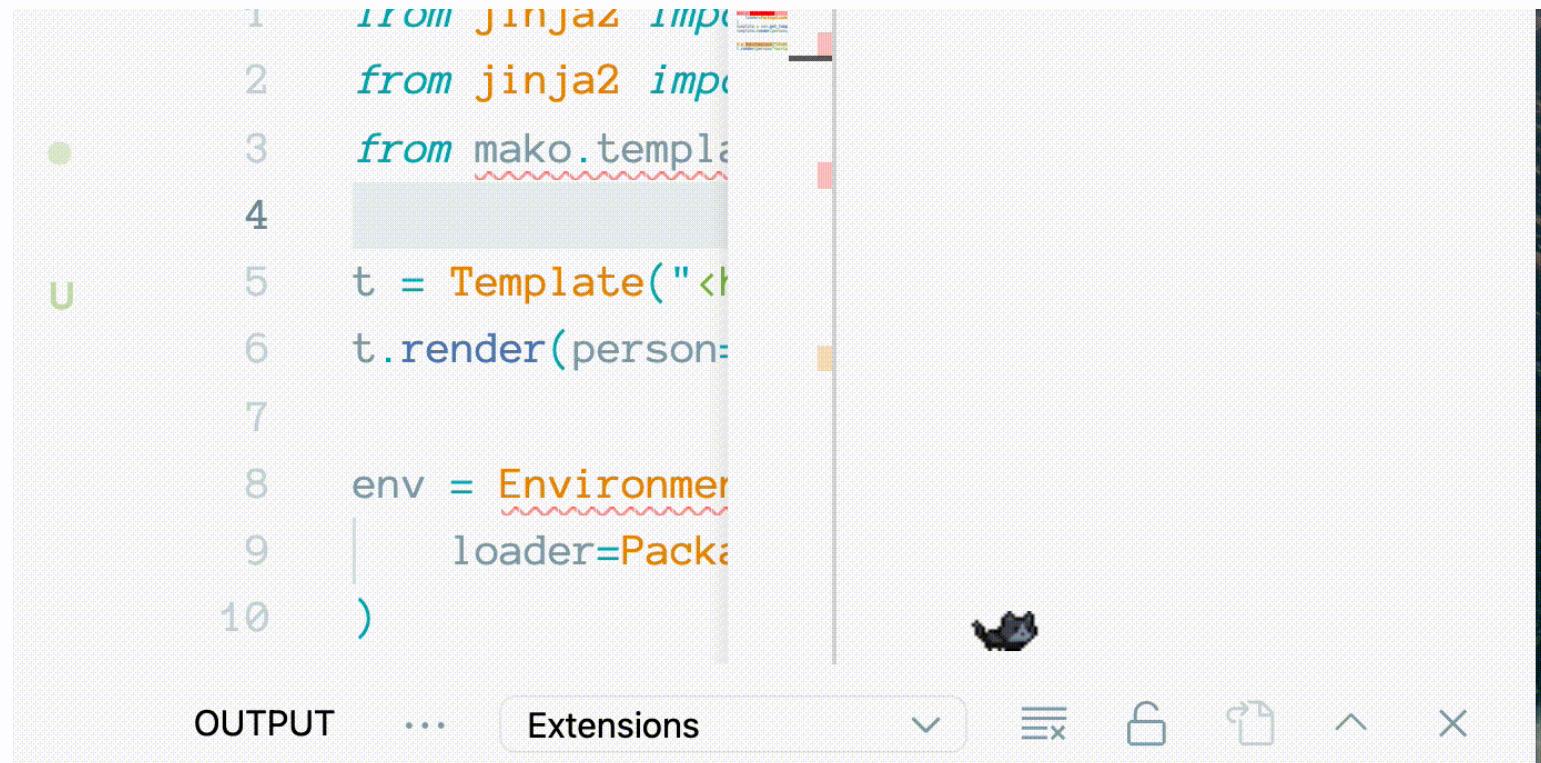


A screenshot of a code editor interface. At the top, there are three tabs: "Modal.svelte", "Toggle.svelte X", and "Loader.svelte". Below the tabs, the file "Toggle.svelte" is open, showing Svelte code. A vertical yellow highlight bar is positioned on the left side of the editor, spanning from line 6 down to line 24. The code itself includes imports for "script", "option", and "style", and defines variables "options", "value", and "onChange". It also contains a script block with a local onChange function and a div block with a foreach loop over "options" and a button for each item.

```
src > components > Toggle.svelte > script
1  <script>
2    export let options = [];
3    export let value = null;
4    export let onChange = () => {};
5
6    const onChangeLocal = option => {
7      onChange(option);
8      value = option.id;
9    };
10   </script>
11
12  <div class="c">
13    {#each options as option}
14      <button
15        class="option"
16        class:selected={option.id == value}
17        on:click={() => onChangeLocal(option)}>
18        {option.label}
19      </button>
20    {/each}
21  </div>
22
23  <style>
24    .c {
```

Pets for your VS Code

Pets gives you a virtual pet to play with while you are coding.



```
1 from jinja2 import
2 from jinja2 import
3 from mako.template import
4
5 t = Template("{{ person.name }}")
6 t.render(person=person)
7
8 env = Environment(
9     loader=PackageLoader('jinja2-petshop'))
10 )
```

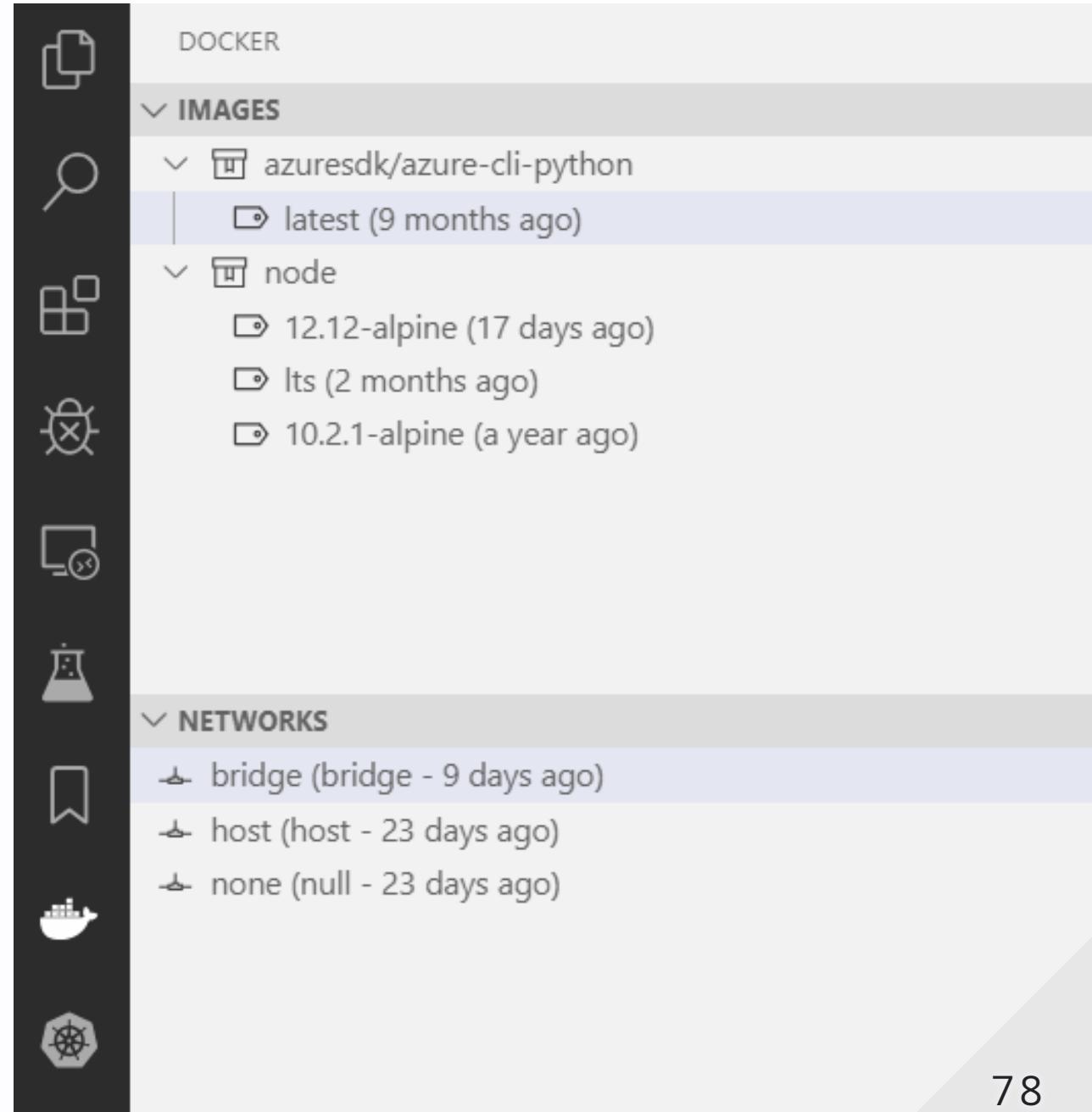
OUTPUT ... Extensions

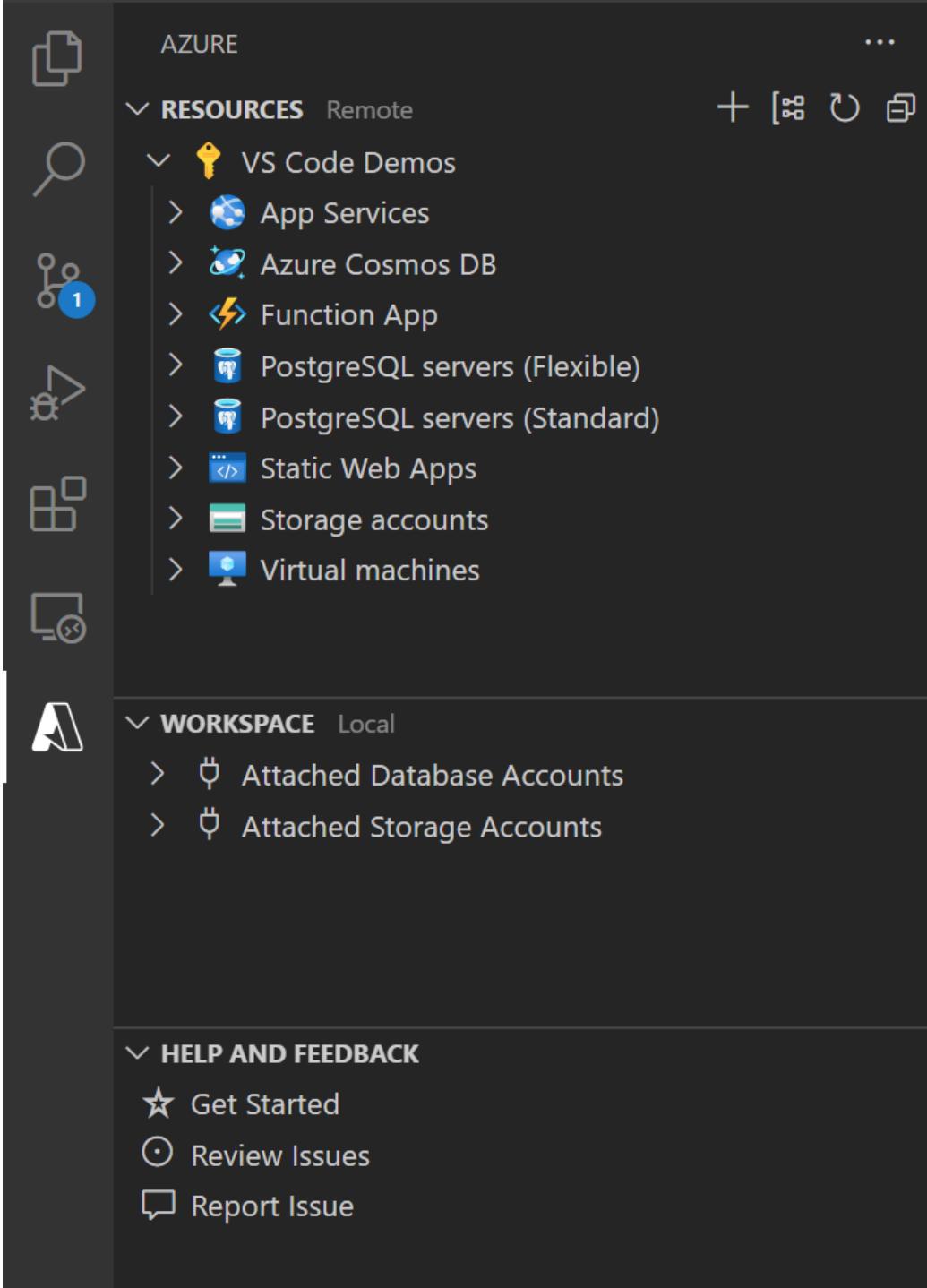
Docker

Makes it easy to
create, manage, and
debug containerized
applications.

Docker

Extensions





Azure Tools

Get web site hosting,
SQL and MongoDB
data, Docker
Containers, Serverless
Functions and more,
all on Azure.

Azure Tools

AWS Toolkit

Including CodeWhisperer, CodeCatalyst, and support for Lambda, S3, CloudWatch Logs, and many other services

AWS Toolkit

