

BETTER DEVELOPER EXPERIENCE WITH VS CODE

VS CODE で試みる開発体験の向上

TOMOMI IMURA

ALOHA!

I am **Tomomi Imura**

Principal Cloud Advocate at **Microsoft**

@girlie_mac on **Twitter**

@girliemac on **GitHub**



“



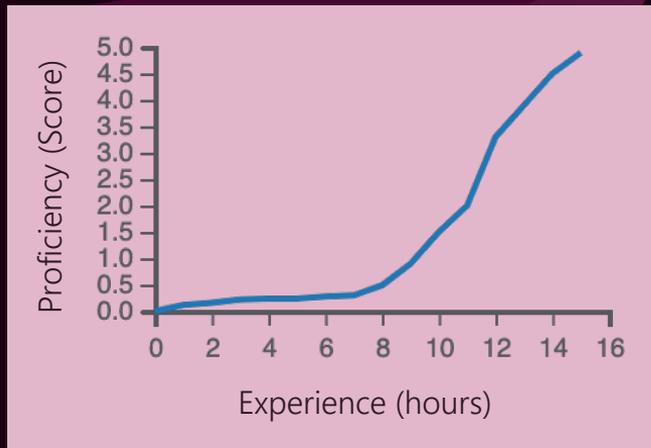
I love you but I hate you

- 匿名 Teams アプリ開発者

MICROSOFT TEAMS PLATFORM

Teams の開発は簡単ではない

- ▶ 複数のテクノロジースタック(Azure, bot frameworks, Graph API など)
- ▶ 初期設定が面倒
- ▶ 学習曲線が激しい



Learning Curve (Example, not actual!)

EXAMPLE: TEAMS BOT DEV FLOW

- ▶ M365 開発アカウント登録
- ▶ Azure ユーザ登録
- ▶ Azure AD でのアプリ登録
- ▶ Bot Framework でのボット登録
- ▶ App manifest (JSON) の作成と App ID を紐づけてアプリを設定
- ▶ コード & デバッグ
- ▶ Teams クライアントでテスト
- ▶ パブリッシュ

“

I just hate you 🖐️

- 匿名 Teams アプリ開発者

“

だけど VS Code は好き

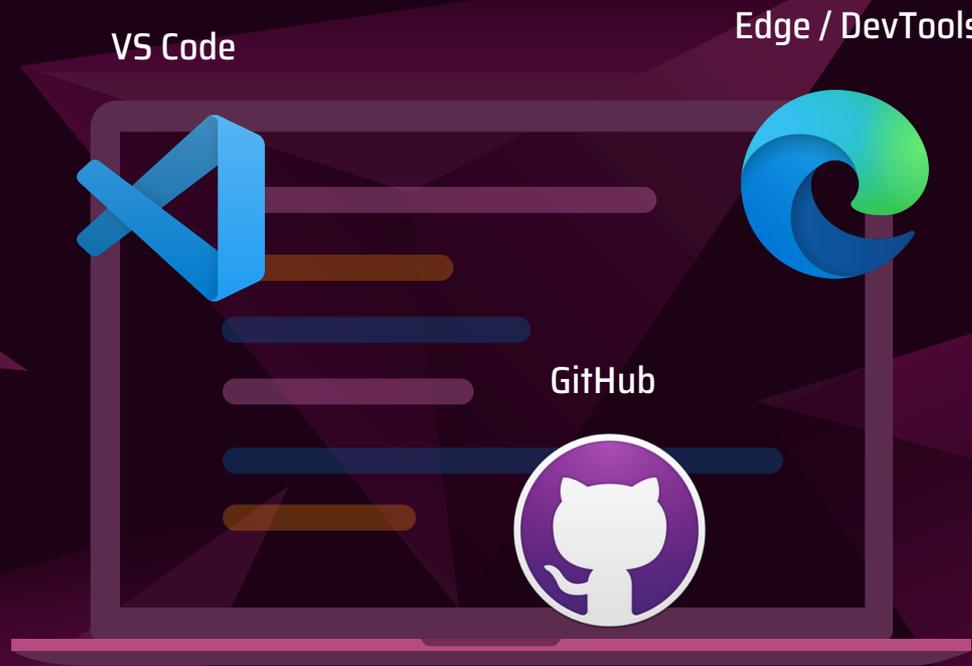
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TOOLS DEVELOPERS LOVE

OMG, we are so lucky to have 'em!

WEB DEVS CANNOT LIVE WITHOUT

いわゆる *de-facto* スタ
ンダードと呼ばれる開
発ツールを持っていて
ラッキー！



TEAMS TOOLKIT FOR VS CODE

開発者の苦悩を和らげるレスキュー！

The screenshot displays the Visual Studio Code interface with the 'Extension: Teams Toolkit' window open. The left sidebar shows a list of installed and available extensions, with 'Teams Toolkit' by Microsoft highlighted. The main panel shows the details for the 'Teams Toolkit' extension, version 4.0.5, published by Microsoft. It has 90,504 downloads and a 5-star rating from 25 reviews. The extension is currently installed globally, and the 'Disable' and 'Uninstall' buttons are visible. Below the main details, there are tabs for 'Details', 'Feature Contributions', 'Changelog', 'Dependencies', and 'Runtime St...'. The 'Details' tab is active, showing the title 'Microsoft Teams Toolkit for Visual Studio Code' and a section titled 'What is Teams Toolkit?' which describes the extension's purpose: 'The Teams Toolkit helps developers create and deploy Teams apps with integrated Identity, access to cloud...'. On the right side of the details panel, there are sections for 'Categories' (listing Azure, Extension Packs, and Snippets) and 'Extension Resources'.

Extension: Teams Toolkit

EXTENSION... Teams Toolkit

Teams Toolkit 498ms
Create, debug, and dep...
Microsoft

AWS Too... 783K ★ 3.5
Amazon Web Services t...
Amazon Web ... **Install**

Teams 1K ★ 5
Teams color theme for ...
almzau **Install**

XML Toolkit 62K ★ 5
Language Support for X...
SAP OSS **Install**

Salesforce ... 14K ★ 5
Salesforce DX utilities f...
drossi750 **Install**

Alexa Skills... 36K ★ 5
Build and manage Alexa...
Amazon Alexa **Install**

Template Toolkit 12K

Teams Toolkit v4.0.5
Microsoft | 90,504 | ★★★★★ (25)
Create, debug, and deploy Teams apps with Teams Tool...
Disable **Uninstall** **Refresh** **Settings**
This extension is enabled globally.

Details Feature Contributions Changelog Dependencies Runtime St...

Microsoft Teams Toolkit for Visual Studio Code

What is Teams Toolkit?

The Teams Toolkit helps developers create and deploy Teams apps with integrated Identity, access to cloud...

Categories

- Azure
- Extension Packs
- Snippets

Extension Resources

TEAMS TOOLKIT FOR VS CODE

A screenshot of the Visual Studio Code interface. On the left, the 'TEAMS TOOLKIT' sidebar is visible, showing sections for ACCOUNTS, ENVIRONMENT, DEVELOPMENT, and DEPLOYMENT. The 'ENVIRONMENT' section is expanded, showing 'local' and 'dev' folders. A yellow circle highlights the Teams Toolkit icon in the sidebar. The main editor area shows a TypeScript file named 'showUserProfile.ts' with the following code:

```
bot > commands > TS showUserProfile.ts > ...
1 import { ResponseType } from "@microsoft/microsoft-graph-client";
2 import { CardFactory, TurnContext } from "botbuilder";
3 import {
4   createMicrosoftGraphClient,
5   TeamsFx,
6 } from "@microsoft/teamsfx";
7 import { SSOCommand } from "../helpers/botCommand";
8
9 export class ShowUserProfile extends SSOCommand {
10   constructor() {
11     super();
12     this.matchPatterns = [/^\/s*show\/s*/];
13     this.operationWithSSOToken = this.showUserInfo;
14   }
15
16   async showUserInfo(context: TurnContext, ssoToken: string) {
17     // await context.sendActivity("Retrieving user information from M
18     await context.sendActivity("Retrieving basic user information ...")
19     //const teamsfx = new TeamsFx().setSsoToken(ssoToken);
20     const teamsfx = new TeamsFx();
21     const userInfo = await teamsfx.getUserInfo();
22     if (userInfo) {
23       await context.sendActivity(
```

The bottom of the screen shows the 'PROBLEMS' and 'OUTPUT' panels. The 'OUTPUT' panel displays the following log messages:

```
[2022-09-16T19:13:51.861Z] [Info] - [core] start task:getProjectConfig
[2022-09-16T19:13:52.008Z] [Info] - [core] finish task:getProjectConfig , time: 147
```

TEAMS TOOLKIT FOR VS CODE

アプリ雛形を
新規で作成

複数の dev env

コード
テンプレート

The screenshot shows the VS Code interface with the Teams Toolkit extension. The left sidebar displays the 'TEAMS TOOLKIT' view with sections for ACCOUNTS, ENVIRONMENT, DEVELOPMENT, and DEPLOYMENT. The 'ENVIRONMENT' section shows 'local' and 'dev' environments. The 'DEVELOPMENT' section has a 'Create a new Teams app' button. The main editor shows a TypeScript file 'showUserProfile.ts' with the following code:

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```



TEAMS TOOLKIT FOR VS CODE

F5

The image displays a VS Code editor window with a TypeScript file named `showUserProfile.ts` open. The editor is in a dark theme. The left sidebar shows the Explorer, Search, Source Control, and Run and Debug views. The Run and Debug view is active, showing a configuration for `Debug` with a gear icon. The main editor area shows the code for `showUserProfile.ts`, which includes imports for `@microsoft/microsoft-graph-client`, `botbuilder`, and `@microsoft/teamsfx`. The code defines a `ShowUserProfile` class with a `constructor` and a `show` method. The bottom of the editor shows the PROBLEMS, OUTPUT, and DEBUG CONSOLE views. The DEBUG CONSOLE shows the output of `npm run dev:teamsfx`, including the command `env-cmd --silent -f .env.teamsfx.local n` and the output of `nodemon`.

Overlaid on the VS Code window is a Teams chat window. The chat window title is `(1) SSOBotSample-local-debu...`. The URL bar shows `teams.microsoft.com/_#/apps/a2721cbf-e1bf-404d-b0ed-da1efb73c4f9/sectio...`. The chat window shows a message from the bot: "There is an issue while trying to sign you in and retrieve your profile photo, please type 'show' command to login and consent permissions again." Below the message is a "Suggestions" dropdown menu with the following items: `show` and `Show user profile by calling Microsoft Graph API with SSO`. The chat window also shows a timestamp of `8/26 10:29 AM` and a message from the user: `show`. At the bottom of the chat window, there is a text input field with the letter `s` entered.

EXAMPLE: TEAMS BOT DEV FLOW

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- ▶ Azure ユーザ登録
- ▶ Azure AD でのアプリ登録
- ▶ Bot Framework でのボット登録
- ▶ App manifest (JSON) の作成と App ID を紐づけてアプリを設定
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- ▶ Teams クライアントでテスト
- ▶ パブリッシュ

DEV FLOW WITH TEAMS TOOLKIT

- ✓ 直感的な UI Tool / CLI
- ✓ アカウント・ログインの簡素化
- ✓ Bot Framework へのボット登録の自動化
- ✓ App ID と App manifest の紐付けと設定の自動化
- ✓ 雛形コード自動作成と、サンプルの充実
- ✓ F5 での コードデバッグ
- ✓ F5 でアプリを Teams クライアントにインストール
- ✓ デプロイアシスト

MORE

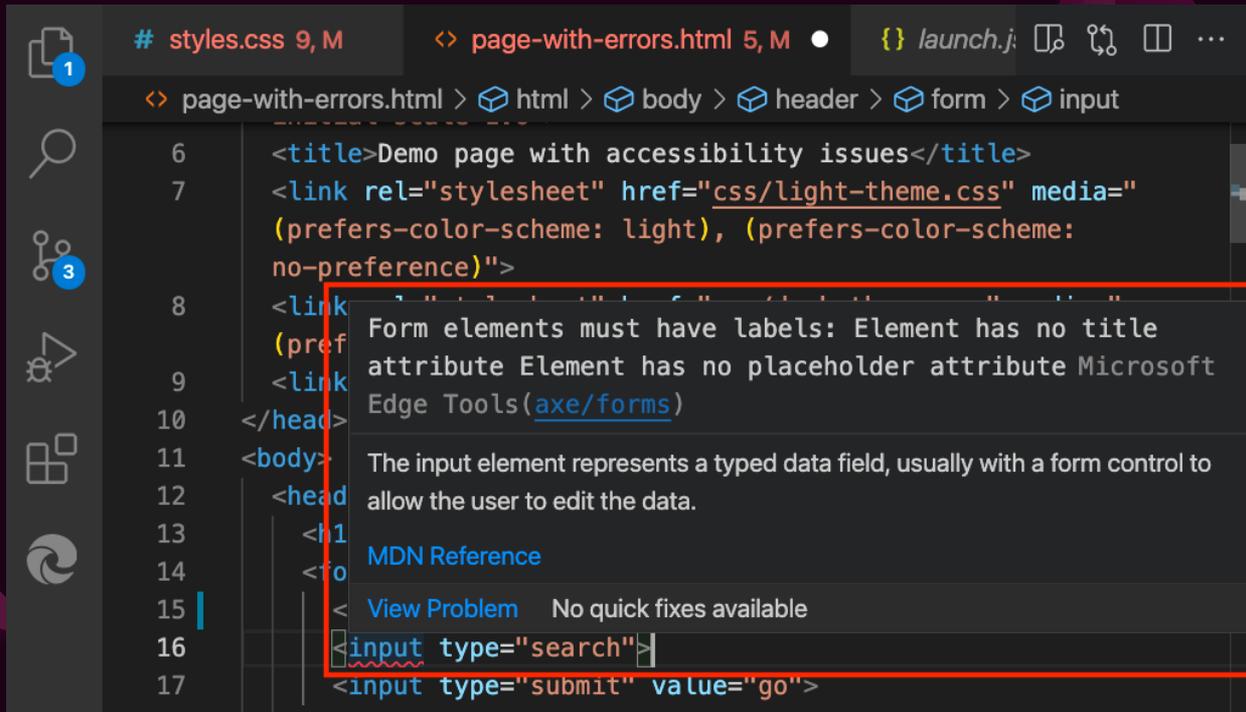
- ✔ TeamsFx (共通機能を備えたライブラリ)
- ✔ 複数環境サポート
- ✔ コラボマネージメント
- ✔ ARM & Bicep を使った Azure プロビジョン
- ✔ CI/CD
- ✔ シナリオ・ベースの雛形アプリ
- ✔ Teams Toolkit for Visual Studio for .NET devs!

MORE VS CODE EXTENSIONS BY MICROSOFT

拡張機能で開発者体験をもっと豊かに

- ▶ Azure Tools
- ▶ TypeScript intellisense
- ▶ ES Lint for VS Code integration
- ▶ Jupyter Notebook support
- ▶ Japanese Language Pack
- ▶ Edge DevTools for VS Code
- ▶ 社内向けツール

MORE VS CODE EXTENSIONS BY MICROSOFT



The screenshot shows the Visual Studio Code interface with a code editor displaying HTML code. A red box highlights an accessibility error message from the Microsoft Edge Tools (axe/forms) extension. The error message reads: "Form elements must have labels: Element has no title attribute Element has no placeholder attribute Microsoft Edge Tools(axe/forms)". Below the error message, there is a link to the "MDN Reference" and a "View Problem" button. The code in the background shows an `<input type="search">` element without a title or placeholder attribute.

```
# styles.css 9, M    <> page-with-errors.html 5, M    {} launch.j:  [ ] [ ] ...  
<> page-with-errors.html > [ ] html > [ ] body > [ ] header > [ ] form > [ ] input  
6    <title>Demo page with accessibility issues</title>  
7    <link rel="stylesheet" href="css/light-theme.css" media="(prefers-color-scheme: light), (prefers-color-scheme: no-preference)">  
8    <link rel="stylesheet" href="css/dark-theme.css" media="(prefers-color-scheme: dark)">  
9    <link rel="stylesheet" href="css/light-theme.css" media="(prefers-color-scheme: light)">  
10   </head>  
11   <body>  
12   <h1>Accessibility Demo</h1>  
13   <form>  
14   <input type="search" value="Search" />  
15   <input type="submit" value="go" />  
16  
17
```

Form elements must have labels: Element has no title attribute Element has no placeholder attribute Microsoft Edge Tools(axe/forms)

The input element represents a typed data field, usually with a form control to allow the user to edit the data.

[MDN Reference](#)

[View Problem](#) No quick fixes available

`<input type="search" value="Search" />`

`<input type="submit" value="go" />`

MORE WITH VS CODE & GITHUB

I am bragging about cool stuff

VS CODE & GITHUB WHAT'S NEW

- ▶ Remote development
- ▶ Codespaces
- ▶ vscodetesting.dev
- ▶ VS Code Server
- ▶ CoPilot

RELEASE TIMELINE



REMOTE DEVELOPMENT

- ▶ コンテナ
 - ▶ Docker
 - devcontainer.json でのコンテナの設定
- ▶ リモートマシン / VM
 - ▶ SSH
- ▶ Windows Subsystem for Linux (WSL)

GITHUB CODESPACES

ブラウザ、または VS Code で動くクラウドベース環境

microsoft/AdaptiveCards: A new way for developers to exchange card content in a common and consistent way.

336 branches 217 tags

Go to file Add file >> Code

Local Codespaces

Welcome to cloud editing

Edit, debug, and run your repository without local cloning and setup.

Create codespace on main

Codespace usage for this repository is paid for by microsoft

Need even more power? [Contact our team](#) to enable GPU machines.

About

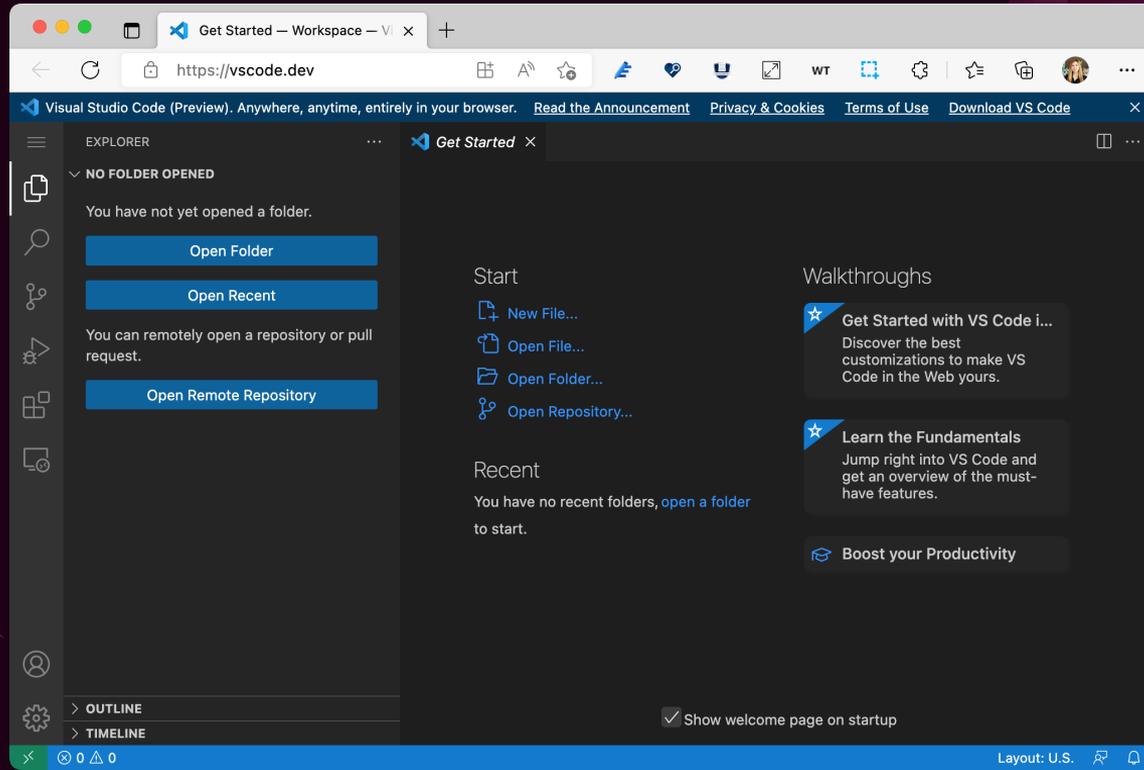
A new way for developers to exchange card content in a common and consistent way.

[adaptivecards.io](#)

android windows ios xaml xamarin bots timeline cards uwp wpf bot-framework windows-uwp adaptive adaptive-cards adaptivecards

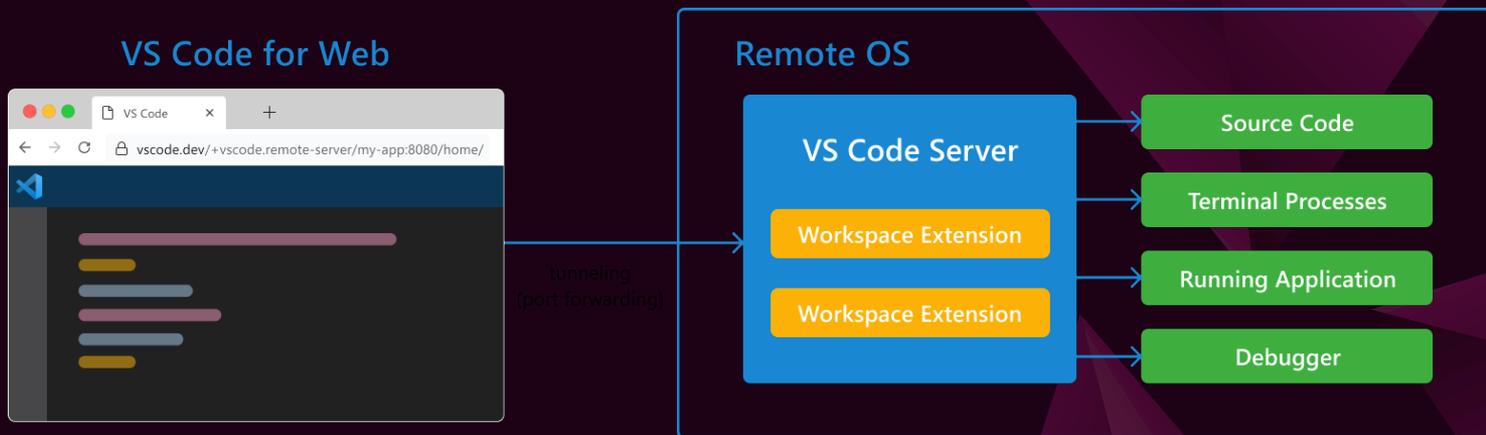
Readme MIT license Code of conduct 1.4k stars 103 watching 473 forks

VSCODE.DEV – VS CODE ON BROWSER



VS CODE SERVER

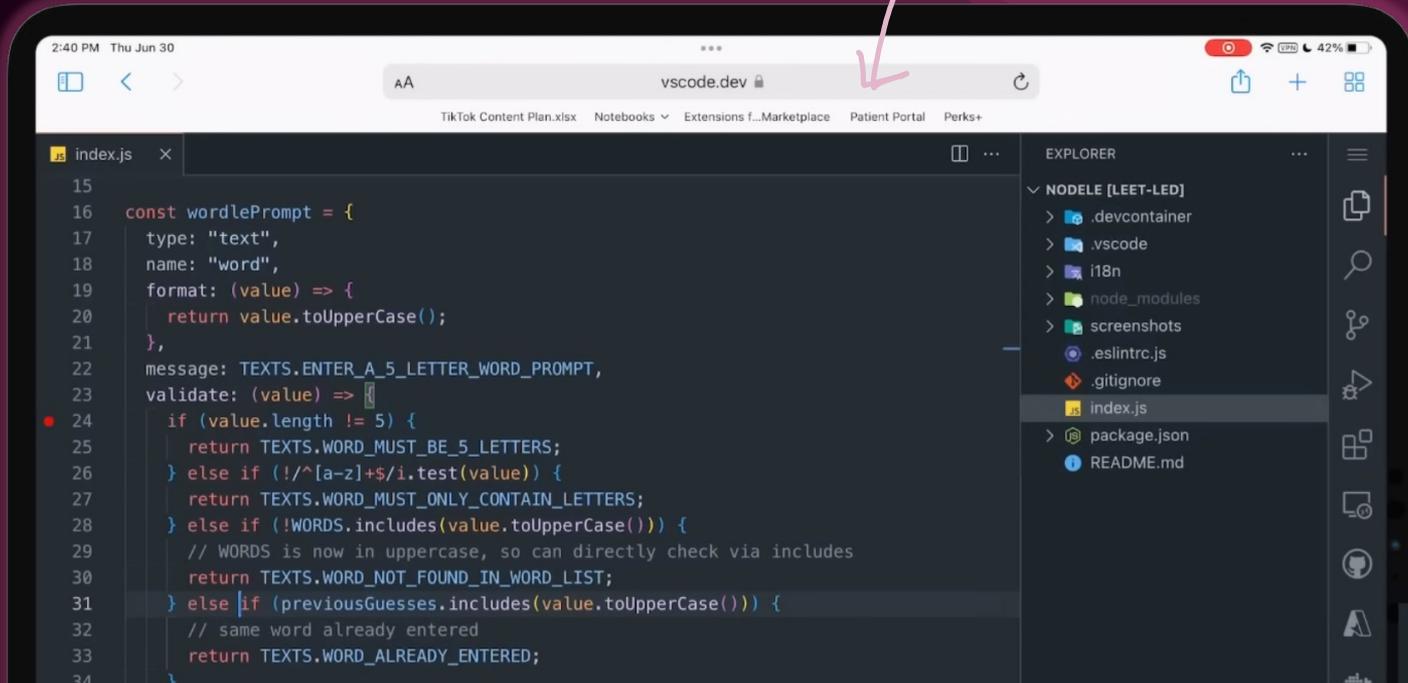
自分の開発マシンを VS Code Server にして
どこからでも vscode.dev で接続しよう



VS CODE SERVER

iPad 上でもコードができる!

vscode.dev/+ms-vscode.remote-server/My-app:8000/home/tomomi/...



GITHUB COPILOT

```
1 #!/usr/bin/env ts-node
2
3 import { fetch } from "fetch-h2";
4
5 // Determine whether t
6
7
8
9
10
11
12
13
14
15
16
17
```

TIKTOK @VSCODE

VS Code チームからの最新
ニュースや Tips & Tricks を
TikTok でお届け



VS CODE ROADMAP



github.com/microsoft/vscode/wiki/Roadmap

MAHALO!

@girlie_mac