Visual Studio Code Extensions Development

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VSCode

• Announced on April 29, 2015 by Microsoft at the 2015 Build conference

• Open Source – Licensed under MIT License

• Electron application, built using HTML, CSS and TypeScript

• As for 22.01.2018 have 9581 extensions at the marketplace

• https://github.com/Microsoft/vscode
import app from './app';
import debugModule = require('debug');
import http = require('http');

const debug = debugModule('node-express-typescript:server');

// Get port from environment and store in Express.
const port = normalizePort(process.env.PORT || '3000');

app.set('port', port);

// create
const server = app.listen(port, () => {
  // exports
  server.listen()
  server.on('error', (err) => {
    console.error('server error', err)
  });
});

function normalizePort(val: any): number | string | boolean {
  let port = parseInt(val, 10);
  if (isNaN(port)) {
    // named pipe
    return val;
  }
}

/* Normal */
/*
const port: number | string | boolean
*/
What can Extensions do?

• Change the look of VS Code with a color or icon theme — Themes

• Add code snippets — Code Snippets

• Add hotkeys — Keymaps

• Add functionality, custom components & views in the UI — General Extensions

• Support a new programming language — Language Server

• Support debugging a specific runtime — Debugger Extension
What Extension is?

• Extension is a node.js lib with exported `activate` and `deactivate` functions

• It runs on extension host – separate node.js process with libs that control extensions and provide API

• VSCode communicates with extension host via IPC
Electron

- Main Process
- Renderer Process
- Extension Host

VSCode Debug Protocol

IPC/RPC

v8 Debugger Protocol

Language Server

VSCode Language Protocol
What Will we Create Today

- **Extension** that allows you ping hosts
- Will use different abilities of **VSCode**
How Will We Create it?

• Notifications
• Input Forms
• Status Bar
• TreeView
• Content Provider
How to Start

• `npm install -g yo generator-code`

• `yo code`

Welcome to the Visual Studio Code Extension generator!

? What type of extension do you want to create? New Extension (TypeScript)
[?] What's the name of your extension? DevConf example
[?] What's the identifier of your extension? vscode-dev-conf
[?] What's the description of your extension?
[?] Enable stricter TypeScript checking in 'tsconfig.json'? Yes
[?] Setup linting using 'tslint'? Yes
[?] Initialize a git repository? Yes
? Which package manager to use? yarn
Show Me the Code

Development cycle

- `git clone https://github.com/litleleleprikon/vscode-dev-conf.git`
- `git checkout v0.0.1`
- `git checkout v0.0.2`
- `git checkout v0.0.3`
- `git checkout v0.0.4`
- `git checkout v0.0.5`
Extensions Cannot

- Manage DOM of VSCode
- Use node native libraries
Useful Links

- https://code.visualstudio.com/api/get-started/your-first-extension
- https://code.visualstudio.com/api/get-started/extension-anatomy
- https://code.visualstudio.com/api
- https://code.visualstudio.com/api/references/vscode-api
- https://github.com/Microsoft/vscode-extension-samples
- https://code.visualstudio.com/api/working-with-extensions/publishing-extension
- https://vscodecanandothat.com
- https://github.com/viatsko/awesome-vscode