



Tools for DEVs & DBAs: Text Editors

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Robert Marz
DATABEE
Die IT-Architekten



Robert Marz – Independent Consultant

Primary Role

Senior Technical Architect
with database centric view of the world

DOAG (German Oracle User Group)

Active Member of Database Community
Responsible for Cloud Topics



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yourself or someone you know:

ace.oracle.com/nominate





Text Editors: Overview



Don't start the next Editor War



Text Editors are just
Tools

All Editors implement
the core functionality:
editing text files

I like to show you Options
You choose for yourself

They are used everyday by
almost all Developers
and almost every Admin

Humans tend to use the
tools they know (best)

Please: Respect others
don't judge them





Editor vs Integrated Development Environment (IDE)

Classic Editor

lightweight/fast
centered on files & folders
textfile editing
Syntax highlighting

IDE

project centered
integrated build (compilers, etc)
Wizards & Designers
platform tools



































Modern Editor

lightweight/fast
project context (files & folders based)
many languages (via plugins)
code understanding (via plugins)
task execution / running
debug



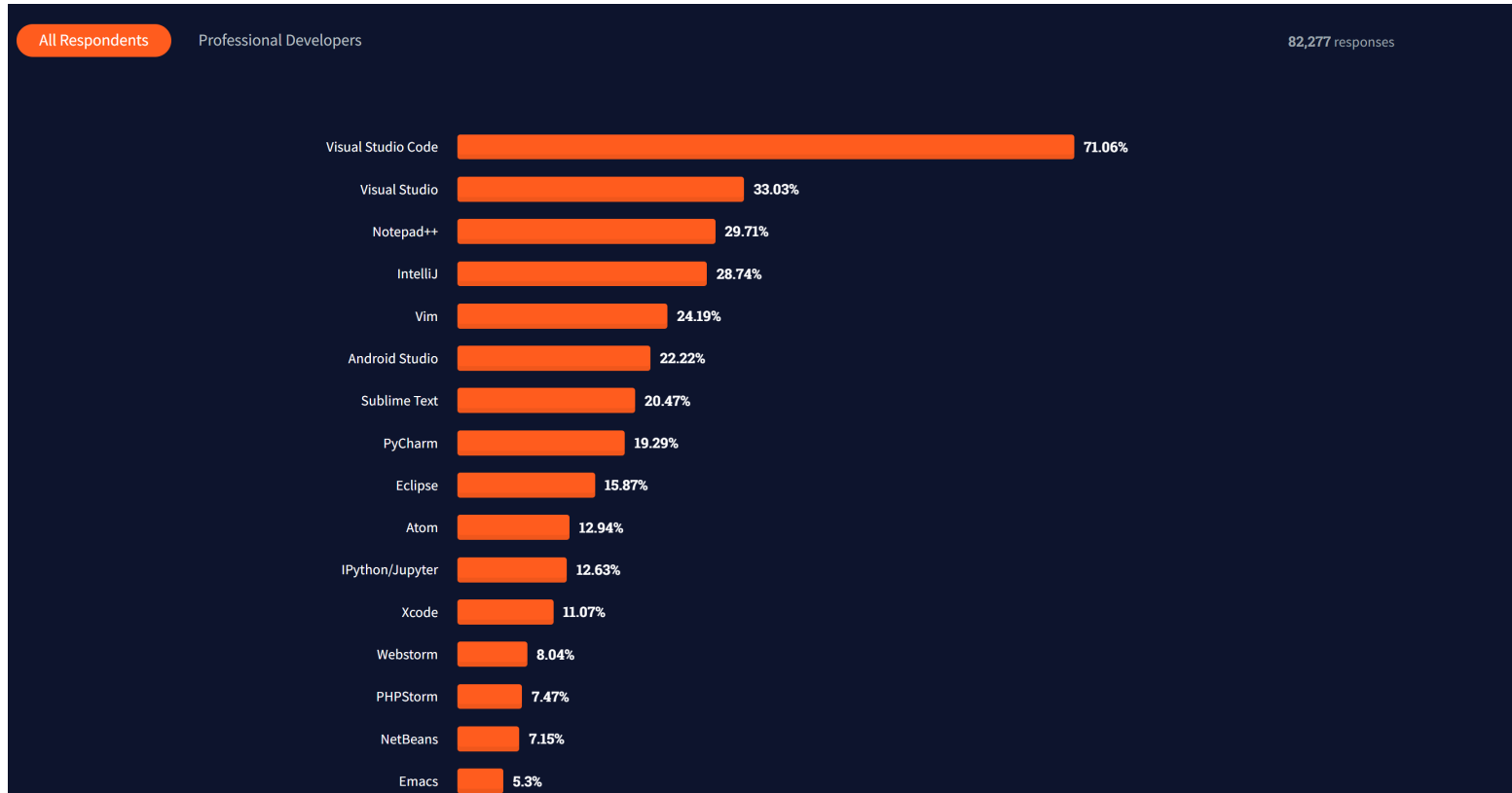
A little History of Software Text Editors



Name	Initial Release	Prog Language	Cost	Platforms
ed	1970	C	no cost	  
vi	1976	C	no cost	  
GNU Emacs	1984	C	no cost	  
Notepad	1985	MASM	Bundled with Windows	
Vim	1991	C, Vim Script	no cost	  
XEmacs	1991	C, Emacs Lisp	no cost	  
Textpad	1992		\$30	
UltraEdit	1994	C++	\$99.95	  
GNU Nano	1999	C	no cost	  
Notepad++	2003	C++	no cost	
TextMate	2004	Objective-C++	no cost	
SublimeText	2008	C++, Python	\$99 (Shareware)	  
Atom	2014	JS, C++	no cost	  
VS Code	2015	JS, TS	no cost	  



IDE Usage (Stackoverflow 2021 Developer Survey)



Source: [Stackoverflow 2021 Developer Survey](#)

Sublime Text





Sublime Text

Get it

<https://www.sublimetext.com/>
free download & evaluation
License \$99,-

Defined Standards

UIX
Search / Navigation
Completion
Keyboard Shortcuts
Journaling Editor

Packages

Package Manager
<https://packagecontrol.io/>

Platforms

Windows / Linux / MacOS
Fast – written in C, GPU Rendering

```
1 #
2 # Be aware that even a small syntax error here can
3 #
4 # Home Page Banner
5 languages:
6 - language: "en"
7   banner:
8     - text1: Senior Technical Architect
9       text2: with a database centric view of the
10      text3: Robert Marz is an Independent Consu
11      buttontext1: About Me
12      buttontext2: Contact Me
13      image: "/images/2019-07-Mt-Rainier.jpg"
14      image_alt: banner image
15 - language: "de"
16   banner:
17     - text1: Senior Technical Architect
18       text2: mit datenbankzentrischem Weltbild.
19       text3: Robert Marz ist selbstständiger Ber
20       buttontext1: Über mich
21       buttontext2: Kontaktieren Sie mich
22       image: "/images/2019-07-Mt-Rainier.jpg"
23       image_alt: banner image
24
```



Sublime Text Basics

Journaling Editor

shadow files

Journal all changes

Persistent storage

Pick up where you left

restores editor layout

unsaved changes available

Important Commands

Goto anywhere

`<ctrl>-p`
Jump to any file

`<@>` Jump to symbol
(`<ctrl>-r`)

`<:>` Goto line
(`<ctrl>-g`)

Open command palette

`<ctrl>-<shift>-p`
Execute any editor function from here

BASICS



Sublime Text Package Control Statistics (Thur, May 18th, 2023)

Package Control

STATS

Packages

5,375

3 ST2/3	5,224 WIN
1 ST3	5,282 MAC
487 ST2	5,238 LINUX

PACKAGES

1,996

LABELS

Users

23.19M

14.68M WIN
5.09M MAC
3.42M LINUX

USERS

3,878

AUTHORS

Activity Yesterday

31K

20K WIN
7K MAC
5K LINUX

PACKAGE INSTALLS

15K

USER ACTIONS

45.0GB

JSON SERVED

Visual Studio Code





Sublime Text VS Code Basics

Journaling Editor

shadow files Journal all changes

Persistent storage

Pick up where you left

restores editor layout

unsaved changes available

Important Commands

Goto anywhere

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Jump to any file

`<@>` Jump to symbol
(`<ctrl>-r`)

`<:>` Goto line
(`<ctrl>-g`)

Open command palette

`<ctrl>-<shift>-p`
Execute any editor function from here

BASICS

VS Code

Get it

<https://code.visualstudio.com/>
free download & usage
Source code on [GitHub](#)
under MIT License

Extensions

Built-In Extension Marketplace
<https://marketplace.visualstudio.com/vscode>

Platforms

Windows / Linux / MacOS
Fast enough
– written in highly optimized TS & JS

A Activity Bar

C Editor Groups

The screenshot shows the VS Code interface with the following components:

- Activity Bar (A):** Located on the left, it contains the Explorer view showing a file tree for a workspace. The tree includes folders like ".vscode-projects (WORKSPACE)", ".travis.yml", ".yarnrc", "CODE_OF_CONDUCT.md", "CONTRIBUTING.md", "gulpfile.js", "LICENSE.txt", "npm-debug.log", "OSSREADME.json", "package.json", "product.json", "README.md", "ThirdPartyNotices.txt", "tsfmt.json", "tslint.json", "yarn.lock", and ".vscode-docs".
- Editor Groups (C):** The main workspace area with multiple editor tabs. The active tab is "TS findOptionsWidget.ts" showing TypeScript code. Other tabs include "TS findModel.ts", "CONTRIBUTING.md", "TS contextmenu.ts", and "package.json".
- Panel (D):** Located at the bottom, it displays the "PROBLEMS" view with a table of error messages:

Severity	Message	Time	Location
-a----	1133 LICENSE.txt	3:32 PM	1133 LICENSE.txt
-a----	607796 npm-debug.log	8:51 AM	607796 npm-debug.log
-a----	42422 OSSREADME.json	11:46 AM	42422 OSSREADME.json
-a----	3699 package.json	2:14 PM	3699 package.json
-a----	683 product.json	3:49 PM	683 product.json
-a----	3732 README.md	4:18 PM	3732 README.md
-a----	103675 ThirdPartyNotices.txt	2:14 PM	103675 ThirdPartyNotices.txt
-a----	729 tsfmt.json	11:14 AM	729 tsfmt.json
-a----	11050 tslint.json	2:14 PM	11050 tslint.json
-a----	203283 yarn.lock	2:14 PM	203283 yarn.lock

At the bottom of the panel, the terminal shows the command prompt: "PS C:\Users\gregvan\vscode>".

B Side Bar

E Status Bar



VS Code Marketplace

The screenshot shows the Visual Studio Marketplace interface. At the top, there are navigation tabs for 'Visual Studio', 'Visual Studio Code' (which is selected), 'Azure DevOps', and 'Subscriptions'. On the right, there are links for 'Sign in', 'Build your own', and 'Publish extensions'. The main heading is 'Extensions for Visual Studio Code', with a search bar below it. The interface is divided into three main sections: 'Featured', 'Trending this week', and 'Most Popular'. Each section displays a grid of extension cards. Each card includes an icon, the extension name, the publisher, the number of downloads, a star rating, and the price (all shown as 'FREE').

Section	Extension Name	Publisher	Downloads	Rating	Price
Featured	CodeSnap	adpyke	1M	5 stars	FREE
	OpenAPI (Swagger) Editor	42Crunch	553K	5 stars	FREE
	Template String Converter	meganrogge	237K	5 stars	FREE
	CircleCI	CircleCI	21K	5 stars	FREE
	GitOps Tools for Flux	WeaveWorks	5.4K	5 stars	FREE
	Multiline Structural Search	CodeQue	3.6K	5 stars	FREE
Trending this week	Batsignal	tamagui	212	5 stars	FREE
	Perl Debugger	Nihilus118	124	5 stars	FREE
	deoptexplorer-vscode	Ron Buckton	2.3K	5 stars	FREE
	Postman	Postman	11.9K	4 stars	FREE
	Intuit Design System	Intuit	193	5 stars	FREE
	OpenCV C++ Image	Simple Tools Dev	179	5 stars	FREE
Most Popular	Python	Microsoft	86M	4.5 stars	FREE
	Jupyter	Microsoft	66.4M	4.5 stars	FREE
	Pylance	Microsoft	58.7M	4.5 stars	FREE
	Jupyter Keymap	Microsoft	48.3M	4.5 stars	FREE
	C/C++	Microsoft	47M	4.5 stars	FREE
	Jupyter Notebook Refactor	Microsoft	46.9M	4.5 stars	FREE

Screenshot taken at
Thur, May 18th, 2023



WATCH
LIVE

A woman with dark hair tied back, wearing glasses and a white textured sweater, is sitting at a desk in a dimly lit room. She is smiling and looking towards the left. Her hands are on a white keyboard. In the background, there is a computer monitor and a desk lamp. A large orange and red gradient banner is overlaid on the left side of the image.

Working with VS Code



Search & Replace with multi-cursors

Multi-cursors

- Mark a word and press <ctrl>-d
 - selects next occurrence and places additional cursor
- More cursors can be added
 - with <ctrl><alt><up> & <ctrl><alt><down>
 - <alt>-Click (mouse)
 - <shift><alt> <mouse-selection>

Editing

- occurs at every cursor in parallel
- same for copy/paste
- all cursors are moved together

Stop it!

- press <esc> to remove all additional cursors
- Avoid destroying remote areas of your files with left-over cursors!

```
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 }
```

```
6
7 The quick brown fox jumps over the lazy dog.
8 → The quick brown fox jumps over the lazy dog.
9 → → The quick brown fox jumps over the lazy dog.
10 → → → The quick brown fox jumps over the lazy dog.
11 → → → → The quick brown fox jumps over the lazy dog.
12 → → → → → The quick brown fox jumps over the lazy dog.
13
14
```

```
208
209 // Key           Character           Virtual Key Code
210 // Semicolon     ';'                186
211 // Colon         ':'                186
212 // Equals sign   '='                187
213 // Plus          '+'                187
214 // Comma         ','                188
215 // Less than sign '<'                188
216 // Minus         '-'                189
217 // Underscore    '_'                189
218 // Period        '.'                190
219 // Greater than sign '>'                190
220 // Forward slash '/'                191
221
```



IntelliSense

IntelliSense

- is a general term for various code editing features including:
 - code completion
 - parameter info
 - quick info
 - member lists

Supported Languages

- Out of the box:
 - JavaScript, TypeScript, JSON, HTML, CSS, SCSS
- Others via Extensions
 - e.g. Python, C/C++, C#, Java, Go, PHP, Ruby, PL/SQL

Trigger IntelliSense

- IntelliSense watches while you code
- it can be triggered with `<ctrl><space>`
- choose options with `<tab>` or `<enter>`

```
1 const express = require('express')
2 const app = express()
3
4 app.
  _router (property) Application._router: any
  all
  apply
  arguments
  bind
  call
  caller
  checkout
  configure
  copy
```

```
1 {
2   "version": "1.0.0",
3   "name": "vscode",
4
5 }
  activationEvents
  author
  badges
  bin
  bugs
  bundledDependencies
  bundleDependencies
  categories
  config
  contributes
```

```
1 const express = require('express')
2 const app = express()
3
4 app.
5   length (property) Function.length: number
6   listen
7   locals
8   lock
9
10
11
12
```



Settings – GUI vs JSON, sync

Settings Scope

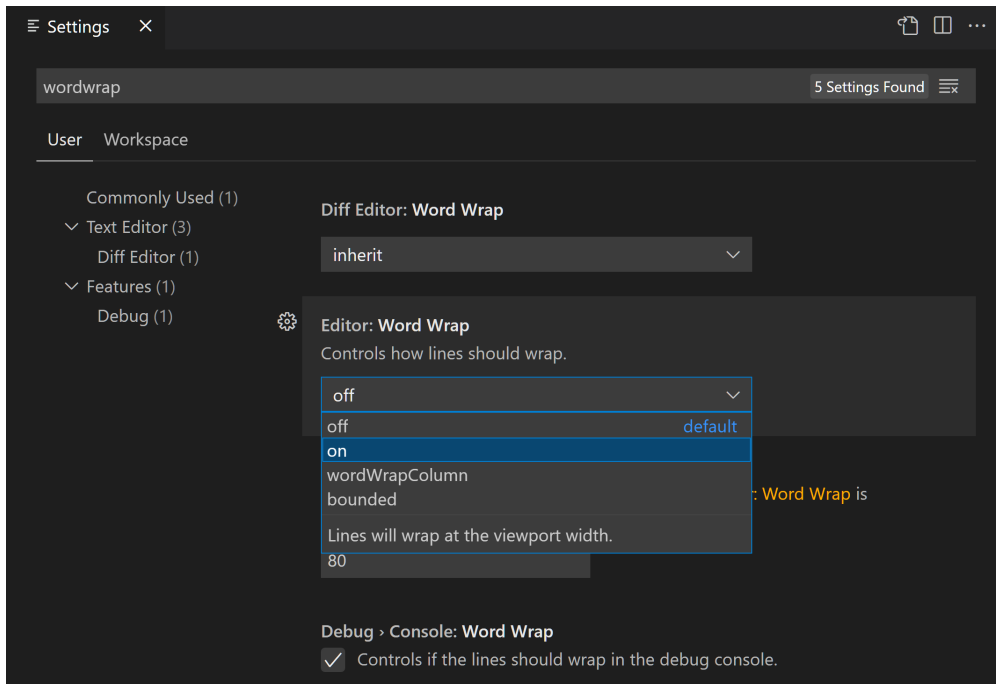
- Different Scopes:
 - Default – User - Workspace

Settings Editor

- Settings can be changed via GUI Editors
- Those modify settings.json files
- Not all Options are available in GUI – edit JSON directly
- Syntax & Schema checking is in Place

Settings sync

- VS Code Settings can be synced out of the box
- Must be turned on
- Choose an Account: Microsoft or GitHub
- Sync work automatically
- Conflicts can be merged or replaced
- Local and remote Backups are available





Version Control

Timeline

- Local History
- New Instance every „save file“
- Combined with VCS Commits

Native Git Integration

- Full Featured Git Client included

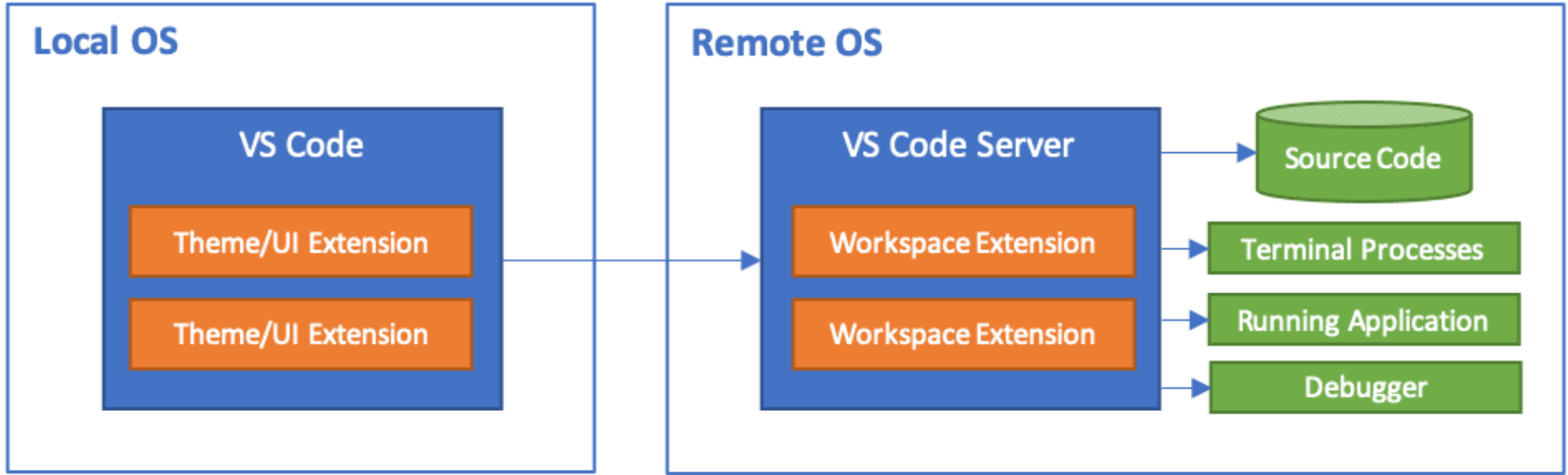
Extensions

- [Subversion](#)
- [GitLens](#)
- [Git File History](#)

```
1 {
2   "name": "githistory-web",
3   "version": "0.1.0",
4   "repository": "pomber/git-history",
5   "private": true,
6   "dependencies": {
7     "diff": "^4.0.1",
8     "js-base64": "^2.5.1",
9     "netlify-auth-providers": "^1.0.0-alpha5",
10    "prismjs": "^1.15.0",
11    "react": "^16.8.1",
12    "react-dom": "^16.8.1",
13    "react-scripts": "2.1.3",
14    "react-swipeable": "^4.3.2",
15    "react-use": "^5.2.2"
16  },
17  "scripts": {
18    "start": "react-scripts start",
19    "build": "react-scripts build",
20    "format": "prettier --write '**/*.{js,jsx,md,json,html,css,yml}' --ignore-path .gitignore",
21    "test-prettier": "prettier --check '**/*.{js,jsx,md,json,html,css,yml}' --ignore-path .gitignore",
22    "test-cra": "react-scripts test",
23    "test": "run-s test-prettier test-cra",
24    "eject": "react-scripts eject"
25  },
26  "eslintConfig": {
27    "extends": "react-app"
28  },
29  "browserslist": [
30    ">0.2%",
31    "not dead",
32    "not ie <= 11",
33    "not op_mini all"
34  ],
35  "devDependencies": {
36    "npm-run-all": "^4.1.5",
```



VS Code Remote Editing



Remote Development extension pack

Remote – SSH

Remote – Containers

Remote – WSL

Edits remote

Shows GUI local

Server must be downloaded to remote

Ssh tunneling is possible



Oracle Developer Tools for VS Code

Oracle Developer Tools for VS Code (SQL and PLSQL)

- Needs dotnet Core Runtime (installation instructions for all platforms included)

Feature Highlights

- Connection Dialog
- Create and manage Oracle Autonomous Databases
- Oracle Database Explorer
- PL/SQL debugger
- Use IntelliSense to autocomplete schema objects
- Navigate SQL and PL/SQL code with Hover, Go to, and Peek
- View table data and save as CSV or JSON
- Navigate through scripts using breadcrumbs
- Problems panel integration
- Code snippets
- Test stored procedures and functions
- Bookmarks and history

```
Oracle Developer Tools | ORAMAG.plsql | x
HR_XEPDB1 > PackageBody > HR > ORAMAG.plsql > PACKAGE BODY "ORAMAG" > FUNCTION "IS_PRIME"
15 -- private function to determine if a number is likely prime
16 FUNCTION "IS_PRIME" ("P_NUMBER" IN NUMBER) RETURN NUMBER IS
17     l_sqrt      number := 0;
18     l_sqrt_ceil number := 0;
19     l_divisor    number := 0;
20     l_divisor_squared number := 0;
21 begin
22     -- prime numbers must be >= 2
23     if p_number < 2 then
24         return IS_NOT_A_PRIME;
25     end if;
26
27     -- only integers can be prime
28     if p_number != ceil(p_number) then
29         return IS_NOT_A_PRIME;
30     end if;
31
32     l_sqrt := sqrt(p_number);
33     l_sqrt_ceil := ceil(l_sqrt);
34     l_divisor := l_sqrt_ceil;
35     while l_divisor <= l_sqrt_ceil loop
36         if p_number % l_divisor = 0 then
37             return IS_NOT_A_PRIME;
38         end if;
39         l_divisor := l_divisor + 1;
40     end loop;
41     return IS_A_PRIME;
42 end IS_PRIME;
```

```
5
6 select e. from employees e
ALL COLUMNS
*
(all columns)
commission_pct
department_id
email
employee_id
first_name
hire_date
job_id
last_name
manager_id
phone_number
```



Oracle SQL Developer NG (not yet available)

Oracle SQL Developer NG

- New Product
- Based on VS Codium
- Plugin / Standalone ?
- Status:
 - in development
 - Public Preview expected later this year
- Curious?
→ Follow [@thatjeffsmith](https://twitter.com/thatjeffsmith) on twitter

The screenshot displays the Oracle SQL Developer NG interface. The main window shows a table view for the 'BEERS' table. The table has columns for BEER_NAME, BEER_TYPE, BEER_ALE, BEER_IPA, BEER_COMM, VENUE, and VENUE. The table is sorted by BEER_NAME. The terminal window at the bottom shows the following SQL query and its results:

```
SQL> select * from employees fetch first 5 rows only;
```

EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
100	Steven	King	SKING	515.123.4567	18-JUN-87	AD_PRE	240000			90
101	Neena	Kochhar	NKOCHHAR	515.123.4568	22-SEP-89	AD_VP	17000		100	90
102	Lex	De Haan	LDEHAAN	515.123.4569	14-JAN-93	AD_VP	17000		100	90
103	Alexander	Hunold	AHUNOLD	590.423.4567	03-MAR-98	IT_PROG	9000		102	60
104	Bruce	Ernst	BERNST	590.423.4568	20-MAY-91	IT_PROG	6000		103	60



WATCH
LIVE

A wide-angle photograph of a desert landscape. In the foreground, a dark asphalt road with yellow and white lane markings curves through the scene. The road is flanked by golden sand dunes that stretch into the distance under a clear blue sky. The lighting suggests a bright, sunny day.

Odds & Ends



Font Size

Increase:
<CTRL> - +

Decrease:
<CTRL> - -



Themes

Themes

- Themes are Extensions
- Install via Marketplace
- Often contain dark & light versions
- Some even change Icons-Design

Switch

- Use Command Palette `<ctrl><shift>-p` Preferences: Color Theme
- Or Direct: `<ctrl>-k <ctrl>-t`
- Search by name
- Use `<cursor up>` / `<cursor down>` to browse / live preview



Screencast Mode

- VS Code has Builtin Screencast Mode

Enable

- Use Command Palette
- `<ctrl><shift>-p` Developer: Toggle Screencast Mode





Screenshots

Screenshot Extensions

- Quickly save screenshots of your code
- Copy screenshots to your clipboard

Extensions

- [CodeSnap](#)
- [Polacode](#)
- [Snipped](#)

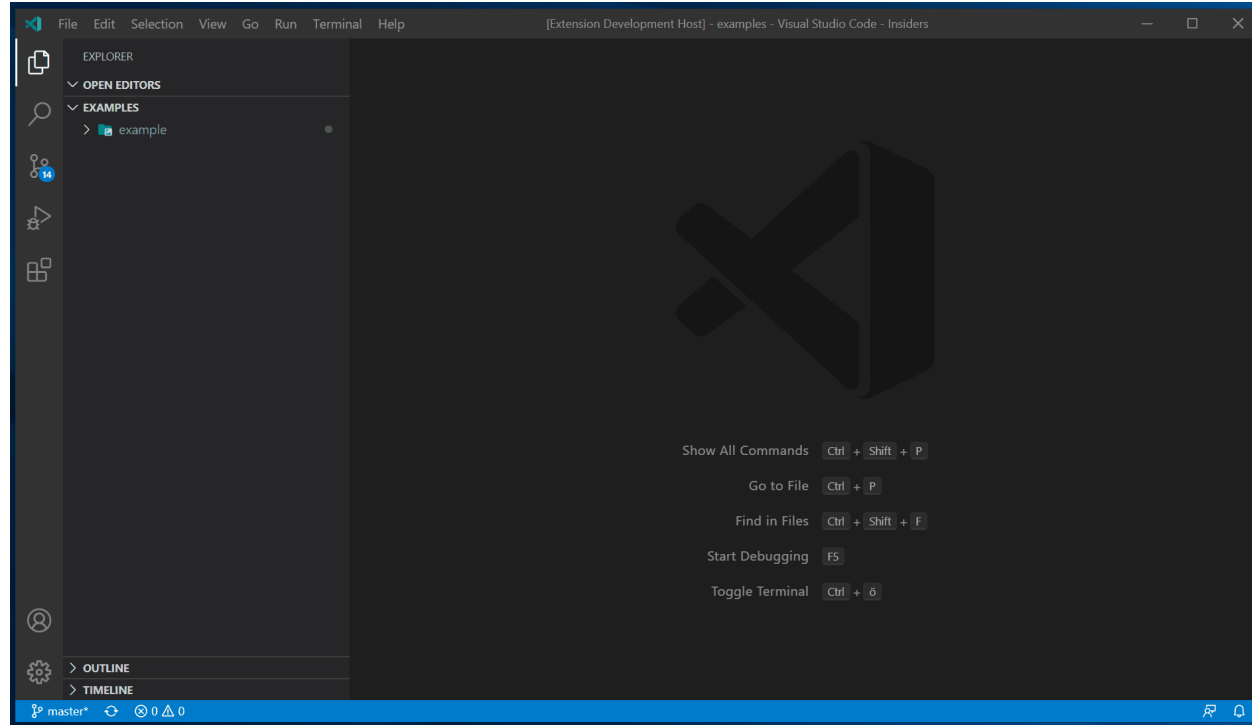
```
src > App.vue > {} App.vue
1 <template>
2   <div id="app">
3     
4     <HelloWorld msg="Welcome to Your Vue.js App"/>
5   </div>
6 </template>
7
8 <script>
9 import HelloWorld from './components/HelloWorld.vue'
10
11 export default {
12   name: 'app',
13   components: {
14     HelloWorld
15   }
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
```



Diagrams – draw.io

Draw.io Integration Extension

- Uses an offline version of Draw.io by default.
- Multiple Draw.io themes are available.
- Use Liveshare to collaboratively edit a diagram with others.
- Nodes/edges can be linked with code spans.





Live Preview

Some Filetypes can be live rendered while you type

- Markdown
- HTML
- SVG
- Geospatial Content
- PDF

Extension

- Opens new Editor Pane
- Shows changes online





GitHub Copilot – AI Pair Programmer

AI based

- Suggestions / Completions

Machine Learning based on GitHub Repos

- works especially well for Python, JavaScript, TypeScript, Ruby, and Go
- Not enough PL/SQL in GitHub for good Results
- “Intellisense is on Steroids”
 - Improved suggestions for where clauses and joins

Availability

- GA since June 2022
- Bookmark Talk
[GitHub Copilot: Erfahrungen aus eineinhalb Jahren AI-gestützter Software-Entwicklung](#)
@IT-Tage 2023 in Frankfurt



A glowing blue neon circle is centered on a dark, textured brick wall. Inside the circle, the words "WATCH" and "LIVE" are written in a white, sans-serif font, stacked vertically. The neon circle has a bright blue glow that fades into the dark background of the wall.

WATCH
LIVE



Drawbacks of modern Editors

Availability

- Not available by Default
→ they need to be installed

Dealing with large Files

- Performance goes down when opening large files
- The Editors try to analyze / syntax highlight every line
- → Whole File must be loaded / reloaded on change



Conclusion





Text Editors – Know your Tools, choose wisely

