Technology 2

Each year we explore the tools and technologies developers are currently using and the ones they want to learn.

This year, we included new questions about embedded technology tools and industry-sourced, community-vetted technology options.

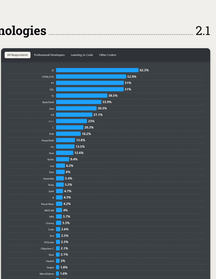
2.1. Most popular technologies →
2.2. Admired and Desired →
2.3. Worked with vs. want to work with →
2.4. Top paying technologies →

Most popular technologies 2.1

Programming, scripting, and markup languages

JavaScript has been a mainstay in the developer survey and on Stack Overflow since our first survey. HTML/CSS and relational databases (SQL and variants, JavaScript-ecosystem are been done the survey except for 2013 and 2014, when SQL was the most popular language.

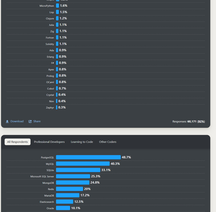
NEW! **programming, scripting, and markup languages** Select all of the programming, scripting, and markup languages you work with and want to work with this year. Choose as many as you need. Your most frequently used languages will be at the top, so please check both boxes in that case.



Databases

PostgreSQL debuted in the developer survey in 2018 when 33% of developers reported using it, compared with the most popular option that year MySQL. In use by 19% of developers. So year later, PostgreSQL is used by 49% of developers and is the most popular database for the second year in a row.

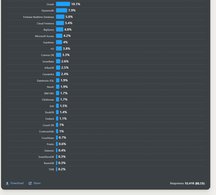
NEW! **database environments** Select your above selection (programming, scripting, and markup languages) that you work with or want to work in the next year? (If you don't work with the above, you can still select databases you want to work in.) Your most frequently used databases will be at the top, so please check both boxes in that case.



Cloud platforms

AWS' share of usage amongst respondents is the same in 2018 as in 2019, while Azure and Google Cloud increased their share. Azure has climbed from 26% to 28% usage and Google Cloud saw a jump from 24% to 25%.

NEW! **cloud platforms** Select your above selection (programming, scripting, and markup languages) that you work with or want to work in the next year? (If you don't work with the above, you can still select platforms you want to work in.) Your most frequently used platforms will be at the top, so please check both boxes in that case.



Web frameworks and technologies

Node.js peaked in 2020 with its highest recorded usage score of 51%. While not as popular, it's still the most used web technology in the survey this year and has increased popularity among those learning to code from last year.

NEW! **web frameworks and web technologies** Select your above selection (programming, scripting, and markup languages) that you work with or want to work in the next year? (If you don't work with the above, you can still select technologies you want to continue to do so, please check both boxes in that case.)

Embedded Technologies

Embedded technologies is a new sub-section of the developer survey this year. 37% of developers are using Raspberry Pi, making it the first most popular embedded technology in the Developer Survey.

NEW! **embedded systems and technologies** Select your above selection (programming, scripting, and markup languages) that you work with or want to work in the next year? (If you don't work with the above, you can still select technologies you want to continue to do so, please check both boxes in that case.)

Other frameworks and libraries

.NET is the most used among other frameworks and libraries for the fourth year in a row. However, those learning to code are using Bootstrap and Pandas the most (as they were last year).

NEW! **other Frameworks and libraries** Select your above selection (programming, scripting, and markup languages) that you work with or want to work in the next year? (If you don't work with the above, you can still select libraries you want to continue to do so, please check both boxes in that case.)

Other tools

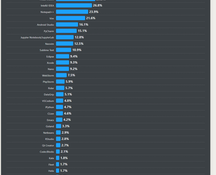
Docker is used the most by professional developers (59%) and npm is used the most by developers learning to code (87%).

NEW! **developer tools for compiling, building and testing** Select your above selection (programming, scripting, and markup languages) that you work with or want to work in the next year? (If you don't work with the technology, and want to continue to do so, please check both boxes in that case.)

Integrated development environment

Visual Studio Code is used by more than twice as many developers than its nearest (and related) alternative, Visual Studio.

NEW! **development environments** Did you use regularly, over last year, and you want to work with this year, you? Please check all that apply.


All Respondents
Professional Developers
Learning to Code
Other Coders
Visual Studio Code 73.6%
Visual Studio 29.1%
Intellij Idea 24.6%
Webstorm 23.9%
Vim 22.4%
Android Studio 16.1%
Sublime Text 15.3%
Apache Netbeans / Sun Netbeans 13.6%
Atom 13.5%
Notepad++ 10.9%
Emacs 6.8%
Xcode 6.6%
Pycharm 6.2%
Webstorm 5.9%
Rubymine 5.6%
Phpstorm 5.3%
Vim 5.0%
Sublime Text 4.7%
Visual Studio Code 4.4%
Intellij Idea 4.1%
Atom 3.8%
Notepad++ 3.5%
Emacs 3.2%
Xcode 2.9%
Pycharm 2.6%
Webstorm 2.3%
Rubymine 2.0%
Phpstorm 1.7%
Vim 1.4%
Sublime Text 1.1%
Visual Studio Code 0.8%
Intellij Idea 0.5%
Atom 0.2%
Notepad++ 0%
Emacs 0%
Xcode 0%
Pycharm 0%
Webstorm 0%
Rubymine 0%
Phpstorm 0%
Vim 0%
Sublime Text 0%
Visual Studio Code 0%
Intellij Idea 0%
Atom 0

Operating system

Windows is the most popular operating system for developers, across both personal and professional use.

> What is the primary **operating system** in which you work?

AI Search and Developer Tools

ChatGPT is used by twice as many developers as its next closest alternative. GitHub Copilot. ChatGPT has a popular free option that developers observably like.

> Which **AI-powered search and developer tools** did you this past year, and which do you want to work with over the next year? Select all that apply.

Admired and Desired

2.2

Programming, scripting, and markup languages

JavaScript, Python and SQL are all highly desired and admired programming languages, but four contender languages to the most admired programming language with an 83% score this year.

> Which **programming, scripting, and markup languages** did you do extensive development work in over the past year, and which do you want to work in over the next year? (If you find yourself with the language and want to continue to do so, please check both boxes in that row.)

Databases

SQLite increased its desired score this year to become wanted by more developers than MySQL compared to last year, increasing from 27% to 27%.

If you're curious about SQLite, listen to our podcast interview with the creator.

> Which **database environments** have you done extensive development work in over the past year, and which do you want to work in over the next year? (If you find yourself with the database and want to continue to do so, please check both boxes in that row.)

Cloud platforms

Vercel is the most admired cloud platform for the second year in a row, with a 84% admire score, rising from their 75% score last year.

> Which **cloud platforms** have you done extensive development work in over the past year, and which do you want to work in over the next year? (If you find yourself with the platform and want to continue to do so, please check both boxes in that row.)

Web frameworks and technologies

73% of developers that used it want to keep working with Svelte. Fun fact. Our team at Stack Overflow used Svelte to build our Jobs and Teams UI, and our Developer Survey results site. We could go on and on about Svelte, listen to us do just that in a interview with one of our users.

> Which **web frameworks and web technologies** have you done extensive development work in over the past year, and which do you want to work in over the next year? (If you find yourself with the framework and want to continue to do so, please check both boxes in that row.)

Embedded Technologies

New to the survey this year, Cargo comes in with a very weighty 83% admire score.

> Which **embedded systems and technologies** have you done extensive development work in over the past year, and which do you want to work in over the next year? (If you find yourself with the technology and want to continue to do so, please check both boxes in that row.)

Other frameworks and libraries

Rail is a new addition to technologies listed in the survey this year, and developers love it. 84% of those that use Rail want to continue using it.

> Which **other frameworks and libraries** have you done extensive development work in over the past year, and which do you want to work in over the next year? (If you find yourself with the framework and want to continue to do so, please check both boxes in that row.)

Other tools

Docker users have elevated this tool to most admired (79%) this year along with being most desired for the second year in a row.

> Which **developer tools for compiling, building and deploying** have you done extensive development work in over the past year, and which do you want to work in over the next year? (If you find yourself with the technology and want to continue to do so, please check both boxes in that row.)

Integrated development environment

Visual Studio Code is the most desired (and used) IDE this year, and developers but the most admired is Neovim (81%).

> Which **development environments** did you on regularly over the past year, and which do you want to work with over the next year? Select most of the many.

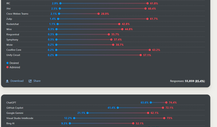
Asynchronous tools

Mattermost ranks the popularity contest with 84% admiration score, and Slack is the most desired.

Synchronous tools

Signal users greatly admire the tool (74% admiration ratio), but only 2% of respondents plan on the tool for synchronous tools users want to use.

> WHEN **communication tools** (do you use regularly over the past year, and which do you want to work with over the next year? Select all that apply)

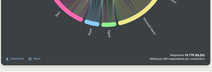


AI Search and Developer Tools

Most developers who use ChatGPT want to keep using it (71% Admired), while most who use Bard, Gitcodemy or Tabnine are least likely to keep using it (-3%, -4%, -5%). Bard users are least likely to want to have an interview that uses its familiarizer prowess.

> WHEN **in-present search and developer tools** (do you use regularly over the past year, and which do you want to work with over the next year? Select all that apply)

ChatGPT
Adobe Copilot
Google Gemini
Visual Studio IntelliCode
Google Bard
Tabnine
Codeium
Mutlimodalgpt
Gitcodemy
Kite
Bard
Aiseer
Aiseer
Aiseer



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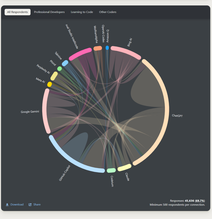
Responses: **32,729 (85.8%)**
Minimum 100 responses per constituent

AI Search and Developer Tools

Most developers use ChatGPT of all the AI tools, and 76% want to keep using it next year. 41% of ChatGPT users want to use Github Copilot next year.

> 49% Of **powered search and developer tools** did get more frustrated with the quality of answers they received with over the last year? Sort of that apply.



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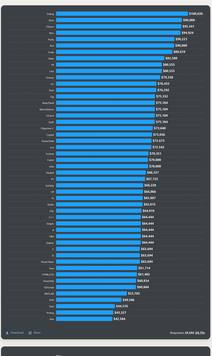
Responses: **30,699 (80.7%)**
Minimum 100 responses per constituent

Top paying technologies 2.4

Top paying technologies

Erlang developers take the top spot this year for highest reported median salary.

> What is your current total **annual** compensation (salary, bonuses, and profit, before taxes and deductions)? Please enter a whole number in the box below, without any punctuation. If you are paid hourly, please estimate an equivalent yearly salary. If you prefer not to answer, please leave the box empty.


Erlang $108,636
Nim $96,000
Gleam $92,243
Raku $84,524
Ada $84,272
Nix $80,696
Lua $80,000
Julia $79,000
Apex $78,000
Rust $77,868
Ruby $76,000
Clojure $75,000
Perl $74,000
Scala $73,000
Elixir $72,142
Haskell $70,312
Lisp $70,096
Kotlin $70,000
Dart $68,727
Swift $67,700
Go $66,000
C# $65,000
Hack $63,910
Zig $63,570
Python $62,000
Flow $62,000
R $61,000
Dart $60,000
Clojure $60,000
Visual Basic (.Net) $60,000
Crystal $59,000
Erlang $58,000
Groovy $57,000
Perl $56,000
Lua $55,000
Delphi $54,000
Ruby $53,000
Bash/Shell (all shells) $52,000
Julia $51,000
Cobol $50,000
Dart $50,000
Nix $49,500
Raku $49,000
Gleam $48,000
Apex $47,000
Hack $46,000
Ada $45,000
Lua $44,000
Nim $43,000
Rust $42,000
Ruby $41,000
Lisp $40,000
Scala $39,000
Elixir $38,000
Kotlin $37,000
Go $36,000
Swift $35,000
Dart $34,000
Zig $33,000
Haskell $32,000
Python $31,000
Perl $30,000
Flow $29,000
Hack $28,000
Clojure $27,000
Groovy $26,000
Crystal $25,000
Visual Basic (.Net) $24,000
Erlang $23,000
Nim $22,000
Raku $21,000
Nix $20,000
Gleam $19,000
Apex $18,000
Lua $17,000
Ada $16,000
Julia $15,000
Cobol $14,000
Delphi $13,000
Bash/Shell (all shells) $12,000
Ruby $11,000
Rust $10,000
Lisp $9,000
Scala $8,000
Elixir $7,000
Kotlin $6,000
Go $5,000
Swift $4,000
Dart $3,000
Zig $2,000
Haskell $1,000
Python $0
Perl $0
Hack $0
Clojure $0
Groovy $0
Crystal $0
Visual Basic (.Net) $0
Erlang $0
Nim $0
Raku $0
Nix $0
Gleam $0
Apex $0
Lua $0
Ada $0
Julia $0
Cobol $0
Delphi $0
Ruby $0
Bash/Shell (all shells) $0
Rust $0
Lisp $0
Scala $0
Elixir $0
Kotlin $0
Go $0
Swift $0
Dart $0
Zig $0
Haskell $0