



Welcome

Hello world!

Thank you for taking the 2021 Stack Overflow Developer Survey, the longest running survey of software developers (and anyone else who codes!) on Earth.

As in previous years, anonymized results of the survey will be made publicly available under the Open Database License, where anyone can download and analyze the data. On that note, throughout the survey, certain answers you and your peers give will be treated as personally identifiable information, and therefore kept out of the anonymized results file. We'll call out each of those in the survey with a note saying "This information will be kept private."

There are six sections in this survey. The 2nd, 3rd, and 4th sections will appear in a random order.

1. Basic Information
2. Education, Work, and Career
3. Technology and Tech Culture
4. Stack Overflow Usage + Community
5. Demographic Information
6. Final Questions

Most questions in this survey are optional. Required questions are marked with *. This anonymous survey will take about 10 minutes to complete. We encourage you to complete it in one sitting.

If you use security or ad-blocking plugins, you may see error messages

Our third-party software provider, Qualtrics, does not work well with certain ad blockers and security software. To avoid error messages that prevent you from taking the survey, please try specifically unblocking Qualtrics in your plugin or pausing the plugin while you take the survey.

To begin, click **Next**.

Qualification

Basic Information

The first section will focus on some basic information about who you are.

Most questions in this section are required. Required questions are noted with *.

Which of the following options best describes you today? Here, by "developer" we mean "someone who writes code." *

- ☐ I am a developer by profession
- ☐ I am not primarily a developer, but I write code sometimes as part of my work
- ☐ I used to be a developer by profession, but no longer am
- ☐ I am a student who is learning to code
- ☐ I code primarily as a hobby
- ☐ None of these

Which of the following best describes your current **employment status**?

- ☐ Employed full-time
- ☐ Employed part-time
- ☐ Independent contractor, freelancer, or self-employed
- ☐ Not employed, but looking for work

- ☐ Not employed, and not looking for work
- ☐ Student, full-time
- ☐ Student, part-time
- ☐ Retired
- ☐ I prefer not to say

Location

Where do you live? *

In which state or territory of the USA do you live? *This information will be kept private.*

In which part of the United Kingdom do you live? *This information will be kept private.*

2 - Education + Work + Career

Education, work, and career

This section will focus on your education, work, and career.

Most questions in this section are optional. Required questions are noted with *.

Which of the following best describes the highest level of formal education that you've completed? *

- ☐ Primary/elementary school
- ☐ Secondary school (e.g. American high school, German Realschule or Gymnasium, etc.)
- ☐ Some college/university study without earning a degree
- ☐ Associate degree (A.A., A.S., etc.)
- ☐ Bachelor's degree (B.A., B.S., B.Eng., etc.)
- ☐ Master's degree (M.A., M.S., M.Eng., MBA, etc.)
- ☐ Professional degree (JD, MD, etc.)
- ☐ Other doctoral degree (Ph.D., Ed.D., etc.)
- ☐ Something else

At what age did you write your first line of code or program? (e.g., webpage, Hello World, Scratch project)

- ☐ Younger than 5 years
- ☐ 5 - 10 years
- ☐ 11 - 17 years
- ☐ 18 - 24 years
- ☐ 25 - 34 years
- ☐ 35 - 44 years
- ☐ 45 - 54 years
- ☐ 55 - 64 years
- ☐ Older than 64 years

How did you learn to code? Select all that apply.

- ☐ Books / Physical media
- ☐ Coding Bootcamp
- ☐ Friend or family member
- ☐ Colleague
- ☐ Online Courses or Certification

- ☐ Online Forum
- ☐ Other online resources (ex: videos, blogs, etc)
- ☐ School
- ☐ Other (please specify):

Including any education, how many years have you been coding in total?

NOT including education, how many years have you coded professionally (as a part of your work)?

Which of the following describes your current job? Please select all that apply.

- ☐ Academic researcher
- ☐ Data or business analyst
- ☐ Data scientist or machine learning specialist
- ☐ Database administrator
- ☐ Designer
- ☐ Developer, back-end
- ☐ Developer, desktop or enterprise applications
- ☐ Developer, embedded applications or devices
- ☐ Developer, front-end
- ☐ Developer, full-stack
- ☐ Developer, game or graphics
- ☐ Developer, mobile
- ☐ Developer, QA or test
- ☐ DevOps specialist
- ☐ Educator
- ☐ Engineer, data

- ☐ Engineer, site reliability
- ☐ Engineering manager
- ☐ Marketing or sales professional
- ☐ Product manager
- ☐ Scientist
- ☐ Senior Executive (C-Suite, VP, etc.)
- ☐ Student
- ☐ System administrator
- ☐ Other (please specify):

Approximately how many people are employed by the company or organization you currently work for?

- ☐ Just me - I am a freelancer, sole proprietor, etc.
- ☐ 2 to 9 employees
- ☐ 10 to 19 employees
- ☐ 20 to 99 employees
- ☐ 100 to 499 employees
- ☐ 500 to 999 employees
- ☐ 1,000 to 4,999 employees
- ☐ 5,000 to 9,999 employees
- ☐ 10,000 or more employees
- ☐ I don't know

Which currency do you use day-to-day? If your answer is complicated, please pick the one you're most comfortable estimating in. *

AED United Arab Emirates dirham
AFN Afghan afghani
ALL Albanian lek
AMD Armenian dram
ANG Netherlands Antillean guilder
AOA Angolan kwanza
ARS Argentine peso
AUD Australian dollar
AWG Aruban florin
AZN Azerbaijan manat

What is your current total compensation (salary, bonuses, and perks, before taxes and deductions), in \${q://QID50/ChoiceGroup/SelectedChoicesTextEntry}? Please enter a whole number in the box below, without any punctuation. If you are paid hourly, please estimate an equivalent weekly, monthly, or yearly salary. If you prefer not to answer, please leave the box empty.

Is that compensation weekly, monthly, or yearly?

- ☐ Weekly
☐ Monthly
☐ Yearly

3 - Tech and Tech Culture

Tech and tech culture

The next set of questions will focus on technology and tech culture.

Most questions in this section are optional. Required questions are noted with *.

Which **programming, scripting, and markup languages** 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 both worked with the language and want to continue to do so, please check both boxes in that row.)

	Worked with in PAST year	Want to work with NEXT year
APL	<input type="checkbox"/>	<input type="checkbox"/>
Assembly	<input type="checkbox"/>	<input type="checkbox"/>
Bash/Shell	<input type="checkbox"/>	<input type="checkbox"/>
C	<input type="checkbox"/>	<input type="checkbox"/>
C#	<input type="checkbox"/>	<input type="checkbox"/>
C++	<input type="checkbox"/>	<input type="checkbox"/>
Clojure	<input type="checkbox"/>	<input type="checkbox"/>
COBOL	<input type="checkbox"/>	<input type="checkbox"/>
Crystal	<input type="checkbox"/>	<input type="checkbox"/>
Dart	<input type="checkbox"/>	<input type="checkbox"/>
Delphi	<input type="checkbox"/>	<input type="checkbox"/>
Elixir	<input type="checkbox"/>	<input type="checkbox"/>
Erlang	<input type="checkbox"/>	<input type="checkbox"/>
F#	<input type="checkbox"/>	<input type="checkbox"/>
Go	<input type="checkbox"/>	<input type="checkbox"/>
Groovy	<input type="checkbox"/>	<input type="checkbox"/>
Haskell	<input type="checkbox"/>	<input type="checkbox"/>
HTML/CSS	<input type="checkbox"/>	<input type="checkbox"/>
Java	<input type="checkbox"/>	<input type="checkbox"/>
JavaScript	<input type="checkbox"/>	<input type="checkbox"/>
Julia	<input type="checkbox"/>	<input type="checkbox"/>
Kotlin	<input type="checkbox"/>	<input type="checkbox"/>

	Worked with in PAST year	Want to work with NEXT year
LISP	<input type="checkbox"/>	<input type="checkbox"/>
Matlab	<input type="checkbox"/>	<input type="checkbox"/>
Node.js	<input type="checkbox"/>	<input type="checkbox"/>
Objective-C	<input type="checkbox"/>	<input type="checkbox"/>
Perl	<input type="checkbox"/>	<input type="checkbox"/>
PHP	<input type="checkbox"/>	<input type="checkbox"/>
PowerShell	<input type="checkbox"/>	<input type="checkbox"/>
Python	<input type="checkbox"/>	<input type="checkbox"/>
R	<input type="checkbox"/>	<input type="checkbox"/>
Ruby	<input type="checkbox"/>	<input type="checkbox"/>
Rust	<input type="checkbox"/>	<input type="checkbox"/>
Scala	<input type="checkbox"/>	<input type="checkbox"/>
SQL	<input type="checkbox"/>	<input type="checkbox"/>
Swift	<input type="checkbox"/>	<input type="checkbox"/>
TypeScript	<input type="checkbox"/>	<input type="checkbox"/>
VBA	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify): <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>

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 both worked with the database and want to continue to do so, please check both boxes in that row.)

	Worked with in PAST year	Want to work with NEXT year
Cassandra	<input type="checkbox"/>	<input type="checkbox"/>
Couchbase	<input type="checkbox"/>	<input type="checkbox"/>

	Worked with in PAST year	Want to work with NEXT year
DynamoDB	<input type="checkbox"/>	<input type="checkbox"/>
Elasticsearch	<input type="checkbox"/>	<input type="checkbox"/>
Firebase	<input type="checkbox"/>	<input type="checkbox"/>
IBM DB2	<input type="checkbox"/>	<input type="checkbox"/>
MariaDB	<input type="checkbox"/>	<input type="checkbox"/>
Microsoft SQL Server	<input type="checkbox"/>	<input type="checkbox"/>
MongoDB	<input type="checkbox"/>	<input type="checkbox"/>
MySQL	<input type="checkbox"/>	<input type="checkbox"/>
Oracle	<input type="checkbox"/>	<input type="checkbox"/>
PostgreSQL	<input type="checkbox"/>	<input type="checkbox"/>
Redis	<input type="checkbox"/>	<input type="checkbox"/>
SQLite	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify): <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>

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 both worked with the platform and want to continue to do so, please check both boxes in that row.)

	Worked with in PAST year	Want to work with NEXT year
AWS	<input type="checkbox"/>	<input type="checkbox"/>
DigitalOcean	<input type="checkbox"/>	<input type="checkbox"/>
Google Cloud Platform	<input type="checkbox"/>	<input type="checkbox"/>
Heroku	<input type="checkbox"/>	<input type="checkbox"/>
IBM Cloud or Watson	<input type="checkbox"/>	<input type="checkbox"/>
Microsoft Azure	<input type="checkbox"/>	<input type="checkbox"/>

	Worked with in PAST year	Want to work with NEXT year
Oracle Cloud Infrastructure	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify): <div></div>	<input type="checkbox"/>	<input type="checkbox"/>

Which **web 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 both worked with the framework and want to continue to do so, please check both boxes in that row.)

	Worked with in PAST year	Want to work with NEXT year
Angular	<input type="checkbox"/>	<input type="checkbox"/>
Angular.js	<input type="checkbox"/>	<input type="checkbox"/>
ASP.NET	<input type="checkbox"/>	<input type="checkbox"/>
ASP.NET Core	<input type="checkbox"/>	<input type="checkbox"/>
Django	<input type="checkbox"/>	<input type="checkbox"/>
Drupal	<input type="checkbox"/>	<input type="checkbox"/>
Express	<input type="checkbox"/>	<input type="checkbox"/>
FastAPI	<input type="checkbox"/>	<input type="checkbox"/>
Flask	<input type="checkbox"/>	<input type="checkbox"/>
Gatsby	<input type="checkbox"/>	<input type="checkbox"/>
jQuery	<input type="checkbox"/>	<input type="checkbox"/>
Laravel	<input type="checkbox"/>	<input type="checkbox"/>
React.js	<input type="checkbox"/>	<input type="checkbox"/>
Ruby on Rails	<input type="checkbox"/>	<input type="checkbox"/>
Spring	<input type="checkbox"/>	<input type="checkbox"/>
Svelte	<input type="checkbox"/>	<input type="checkbox"/>
Symfony	<input type="checkbox"/>	<input type="checkbox"/>

	Worked with in PAST year	Want to work with NEXT year
Vue.js	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify): <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>

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 both worked with the framework and want to continue to do so, please check both boxes in that row.)

	Worked with in PAST year	Want to work with NEXT year
.NET Framework	<input type="checkbox"/>	<input type="checkbox"/>
.NET Core / .NET 5	<input type="checkbox"/>	<input type="checkbox"/>
Apache Spark	<input type="checkbox"/>	<input type="checkbox"/>
Cordova	<input type="checkbox"/>	<input type="checkbox"/>
Flutter	<input type="checkbox"/>	<input type="checkbox"/>
Hadoop	<input type="checkbox"/>	<input type="checkbox"/>
Keras	<input type="checkbox"/>	<input type="checkbox"/>
NumPy	<input type="checkbox"/>	<input type="checkbox"/>
Pandas	<input type="checkbox"/>	<input type="checkbox"/>
Qt	<input type="checkbox"/>	<input type="checkbox"/>
React Native	<input type="checkbox"/>	<input type="checkbox"/>
TensorFlow	<input type="checkbox"/>	<input type="checkbox"/>
Torch/PyTorch	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify): <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>

Which **tools** 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 both worked with the technology and want to continue to do so, please check both boxes in that row.)

	Worked with in PAST year	Want to work with NEXT year
Ansible	<input type="checkbox"/>	<input type="checkbox"/>
Chef	<input type="checkbox"/>	<input type="checkbox"/>
Deno	<input type="checkbox"/>	<input type="checkbox"/>
Docker	<input type="checkbox"/>	<input type="checkbox"/>
Flow	<input type="checkbox"/>	<input type="checkbox"/>
Git	<input type="checkbox"/>	<input type="checkbox"/>
Kubernetes	<input type="checkbox"/>	<input type="checkbox"/>
Pulumi	<input type="checkbox"/>	<input type="checkbox"/>
Puppet	<input type="checkbox"/>	<input type="checkbox"/>
Terraform	<input type="checkbox"/>	<input type="checkbox"/>
Unity 3D	<input type="checkbox"/>	<input type="checkbox"/>
Unreal Engine	<input type="checkbox"/>	<input type="checkbox"/>
Xamarin	<input type="checkbox"/>	<input type="checkbox"/>
Yarn	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify): <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>

Which **development environments** did you use regularly over the past year, and which do you want to work with over the next year? Please check all that apply.

	Worked with in PAST year	Want to work with NEXT year
Android Studio	<input type="checkbox"/>	<input type="checkbox"/>
Atom	<input type="checkbox"/>	<input type="checkbox"/>

	Worked with in PAST year	Want to work with NEXT year
Eclipse	<input type="checkbox"/>	<input type="checkbox"/>
Emacs	<input type="checkbox"/>	<input type="checkbox"/>
IntelliJ	<input type="checkbox"/>	<input type="checkbox"/>
IPython/Jupyter	<input type="checkbox"/>	<input type="checkbox"/>
NetBeans	<input type="checkbox"/>	<input type="checkbox"/>
Neovim	<input type="checkbox"/>	<input type="checkbox"/>
Notepad++	<input type="checkbox"/>	<input type="checkbox"/>
PHPStorm	<input type="checkbox"/>	<input type="checkbox"/>
PyCharm	<input type="checkbox"/>	<input type="checkbox"/>
Rider	<input type="checkbox"/>	<input type="checkbox"/>
RStudio	<input type="checkbox"/>	<input type="checkbox"/>
RubyMine	<input type="checkbox"/>	<input type="checkbox"/>
Sublime Text	<input type="checkbox"/>	<input type="checkbox"/>
TextMate	<input type="checkbox"/>	<input type="checkbox"/>
Vim	<input type="checkbox"/>	<input type="checkbox"/>
Visual Studio	<input type="checkbox"/>	<input type="checkbox"/>
Visual Studio Code	<input type="checkbox"/>	<input type="checkbox"/>
Webstorm	<input type="checkbox"/>	<input type="checkbox"/>
Xcode	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify): <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>

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

- ☐ BSD
- ☐ Linux-based
- ☐ MacOS

- ☐ Windows
- ☐ Windows Subsystem for Linux (WSL)
- ☐ Other (please specify):

What do you do when you get stuck on a problem? Select all that apply.

- ☐ Watch help / tutorial videos
- ☐ Panic
- ☐ Play games
- ☐ Meditate
- ☐ Call a coworker or friend
- ☐ Visit Stack Overflow
- ☐ Do other work and come back later
- ☐ Go for a walk or other physical activity
- ☐ Google it
- ☐ Visit another developer community (please name):
- ☐ Other (please specify):

4 - Stack Community

Stack Overflow - usage and community

This section will focus on Stack Overflow usage and community questions.

Most questions in this section are optional. Required questions are noted with *.

Which of the following Stack Overflow sites have you visited? Select all that apply.

- ☐ Stack Overflow for Teams (private knowledge sharing & collaboration platform for companies)
- ☐ Stack Overflow
- ☐ Stack Exchange
- ☐ I have never visited Stack Overflow or the Stack Exchange network

How frequently would you say you visit Stack Overflow?

- ☐ Less than once per month or monthly
- ☐ A few times per month or weekly
- ☐ A few times per week
- ☐ Daily or almost daily
- ☐ Multiple times per day

Do you have a Stack Overflow account?

- ☐ Yes
- ☐ No
- ☐ Not sure/can't remember

How frequently would you say you participate in Q&A on Stack Overflow? By participate we mean ask, answer, vote for, or comment on questions.

- ☐ I have never participated in Q&A on Stack Overflow
- ☐ Less than once per month or monthly
- ☐ A few times per month or weekly
- ☐ A few times per week
- ☐ Daily or almost daily
- ☐ Multiple times per day

Do you consider yourself a member of the Stack Overflow community?

- ☐ No, not at all
- ☐ No, not really

- ☐ Neutral
- ☐ Yes, somewhat
- ☐ Yes, definitely
- ☐ Not sure

Are you a member of any other online developer communities?

- ☐ Yes
- ☐ No

Please name up to 5 other online developer communities you belong to, and indicate whether they are public (anyone can join) or private (invitation required).

Public - Anyone can join

Private - Invitation required to join

Online community 1:

☐☐

Online community 2:

☐☐

Online community 3:

☐☐

Online community 4:

☐☐

Online community 5:

☐☐

Demographics

Demographics

All questions in this section are optional, you may leave questions blank if you prefer not to answer.

As a reminder, all reporting of the survey responses will be anonymized.

What is your age?

- ☐ Under 18 years old
- ☐ 18-24 years old
- ☐ 25-34 years old
- ☐ 35-44 years old
- ☐ 45-54 years old
- ☐ 55-64 years old
- ☐ 65 years or older
- ☐ Prefer not to say

Which of the following describe you, if any? Please check all that apply.

- ☐ Woman
- ☐ Man
- ☐ Non-binary, genderqueer, or gender non-conforming
- ☐ Prefer not to say
- ☐ Or, in your own words:

Do you identify as transgender?

- ☐ Yes
- ☐ No
- ☐ Prefer not to say

☐ Or, in your own words:

Which of the following describe you, if any? Please check all that apply.

- ☐ Bisexual
☐ Gay or Lesbian
☐ Straight / Heterosexual
☐ Queer
☐ Prefer not to say

☐ Prefer to self-describe:

Which of the following describe you, if any? Please check all that apply.

- ☐ Black or of African descent
☐ East Asian
☐ Hispanic or Latino/a/x
☐ Middle Eastern
☐ White or of European descent
☐ Biracial
☐ Indigenous (such as Native American, Pacific Islander, or Indigenous Australian)
☐ South Asian
☐ Multiracial
☐ Southeast Asian
☐ I don't know
☐ Prefer not to say

☐ Or, in your own words:

Which of the following describe you, if any? Please check all that apply.

- ☐ I am blind / have difficulty seeing

- ☐ I am deaf / hard of hearing
- ☐ I am unable to / find it difficult to type
- ☐ I am unable to / find it difficult to walk or stand without assistance
- ☐ None of the above
- ☐ Prefer not to say
- ☐ Or, in your own words:

Which of the following describe you, if any? Please check all that apply.

- ☐ I have a concentration and/or memory disorder (e.g. ADHD)
- ☐ I have a mood or emotional disorder (e.g. depression, bipolar disorder)
- ☐ I have an anxiety disorder
- ☐ I have autism / an autism spectrum disorder (e.g. Asperger's)
- ☐ None of the above
- ☐ Prefer not to say
- ☐ Or, in your own words:

FinalThoughtsSurveyReview

Final Questions

You're almost done!

How do you feel about the length of the survey this year?

- ☐ Too short
- ☐ Appropriate in length
- ☐ Too long

How easy or difficult was this survey to complete?

- ☐ Easy
- ☐ Neither easy nor difficult
- ☐ Difficult

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