www.tiobe.com /tiobe-index/

TIOBE Index - TIOBE

9-11 minutes

TIOBE Index for January 2024

January Headline: C# is programming language of the year 2023!

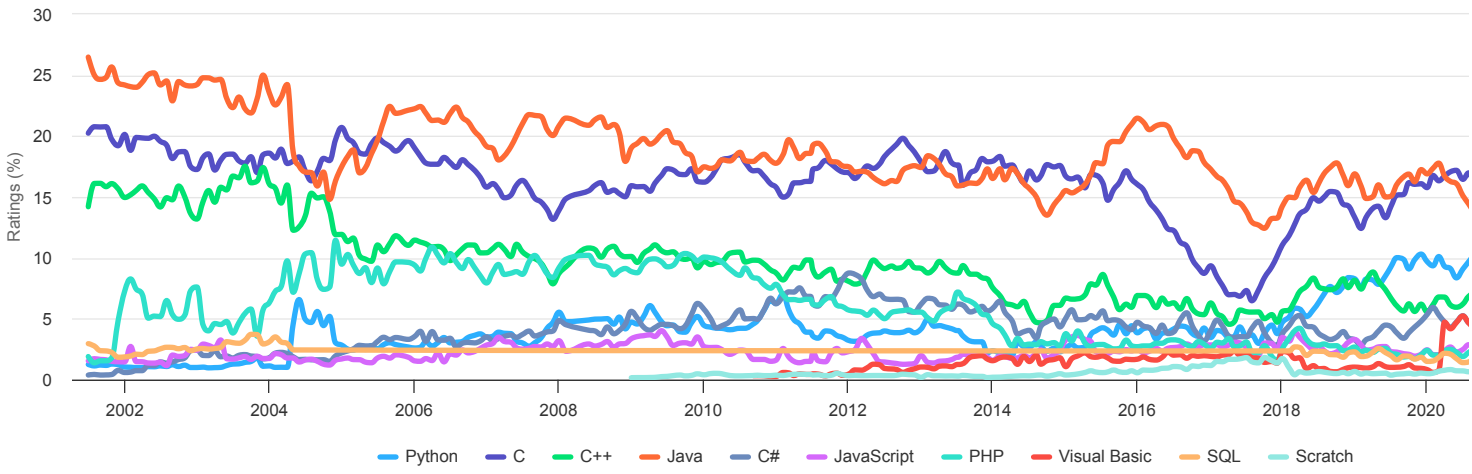
For the first time in the history of the TIOBE index, C# has won the programming language of the year award. Congratulations! C# has been a top 10 player for more than 2 decades and now that it is catching up with the big 4 languages, it won the well-deserved award by being the language with the biggest uptick in one year (+1.43%). Runners up are Scratch (+0.83%) and Fortran (+0.64%). C# is eating market share from Java and is getting more and more popular in domains such as web application back ends and games (thanks to Unity). C# can be used free of charge and evolves in a steady pace, making the language more expressive every new release. C# is here to stay and might even surpass Java soon.

Apart from C#, there were a lot of interesting changes in the TIOBE index last year. Fortran and Kotlin became permanent top 20 players replacing old-time favorites R and Perl. Fortran is very fit to crunch numbers with good libraries and remains a university favorite in lots of domains. Kotlin is the easy to learn/write competitor of Java. Interesting question: what languages will enter the TIOBE index top 20 in 2024? This is very hard to predict. Julia touched the TIOBE index briefly in 2023, but couldn't keep that position. Maturity of the Julia language and community is needed to get a second chance. I would put my bets on Dart (with Flutter) and TypeScript. The latter is already heavily used in industry, but for some reason it is not breaking through in the TIOBE index yet. Let's see what 2024 has in store. -- *Paul Jansen, CEO TIOBE Software*

The TIOBE Programming Community index is an indicator of the popularity of programming languages. The index is updated once a month. The ratings are based on the number of skilled engineers world-wide, courses and third party vendors. Popular search engines such as Google, Bing, Yahoo!, Wikipedia, Amazon, YouTube and Baidu are used to calculate the ratings. It is important to note that the TIOBE index is not about the *best* programming language or the language in which *most lines of code* have been written.

The index can be used to check whether your programming skills are still up to date or to make a strategic decision about what programming language should be adopted when starting to build a new software system. The definition of the TIOBE index can be found here.

Jan 2024	Jan 2023	Change	Programming Language	Ratings	Change
1	1		Python	13.97%	-2.39%
2	2		C	11.44%	-4.81%
3	3		C++	9.96%	-2.95%
4	4		Java	7.87%	-4.34%
5	5		C#	7.16%	+1.43%
6	7	↑	JavaScript	2.77%	-0.11%
7	10	↑	PHP	1.79%	+0.40%
8	6	↓	Visual Basic	1.60%	-3.04%
9	8	↓	SQL	1.46%	-1.04%
10	20	⇈	Scratch	1.44%	+0.86%
11	12	↑	Go	1.38%	+0.23%
12	27	⇈	Fortran	1.09%	+0.64%
13	17	⇈	Delphi/Object Pascal	1.09%	+0.36%
14	15	↑	MATLAB	0.97%	+0.06%
15	9	⇊	Assembly language	0.92%	-0.68%
16	11	⇊	Swift	0.89%	-0.31%
17	25	⇈	Kotlin	0.85%	+0.37%
18	16	↓	Ruby	0.80%	+0.01%
19	18	↓	Rust	0.79%	+0.18%
20	31	⇈	COBOL	0.78%	+0.45%



TIOBE Programming Community IndexSource: www.tiobe.com

Other programming languages

The complete top 50 of programming languages is listed below. This overview is published unofficially, because it could be the case that we missed a language. If you have the impression there is a programming language lacking, please notify us at tpci@tiobe.com. Please also check the overview of all programming languages that we monitor.

Position	Programming Language	Ratings
21	D	0.77%
22	F#	0.77%
23	R	0.74%
24	SAS	0.70%
25	(Visual) FoxPro	0.67%
26	Ada	0.62%
27	Classic Visual Basic	0.60%
28	Prolog	0.56%
29	VBScript	0.55%
30	Perl	0.52%
31	Objective-C	0.46%
32	Dart	0.43%
33	Julia	0.40%
34	X++	0.39%
35	TypeScript	0.39%
36	Lua	0.37%
37	Scala	0.34%
38	GAMS	0.33%
39	Transact-SQL	0.30%
40	Logo	0.30%
41	ABAP	0.29%
42	Lisp	0.28%
43	CFML	0.28%
44	Haskell	0.28%
45	PL/SQL	0.27%
46	Awk	0.27%
47	Eiffel	0.24%
48	Smalltalk	0.23%
49	ML	0.23%
50	ActionScript	0.23%

The Next 50 Programming Languages

The following list of languages denotes #51 to #100. Since the differences are relatively small, the programming languages are only listed (in alphabetical order).

- Algol, AutoLISP, Avenue, Bash, bc, Boo, CIL, CL (OS/400), CLIPS, Clojure, CLU, Curl, DiBOL, Erlang, Forth, Hack, Icon, Io, J, J#, JScript, LabVIEW, Ladder Logic, Lingo, LiveCode, M4, Maple, MQL5, NATURAL, Nim, OpenEdge ABL, PL/I, PostScript, PowerShell, Pure Data, Q, Racket, REXX, Ring, RPG, Scheme, Snap!, Solidity, SPARK, SPSS, Squirrel, Stata, Wolfram, Xojo, XQuery

---

Very Long Term History

To see the bigger picture, please find below the positions of the top 10 programming languages of many years back. Please note that these are *average* positions for a period of 12 months.

Programming Language	2024	2019	2014	2009	2004	1999	1994	1989
Python	1	4	8	6	11	22	22	-
C	2	2	1	2	2	1	1	1
C++	3	3	4	3	3	2	2	3
Java	4	1	2	1	1	16	-	-
C#	5	6	5	8	9	32	-	-
JavaScript	6	8	9	9	8	21	-	-
Visual Basic	7	19	-	-	-	-	-	-
PHP	8	7	6	5	6	-	-	-
SQL	9	9	-	-	7	-	-	-
Assembly language	10	13	-	-	-	-	-	-
Objective-C	27	11	3	42	48	-	-	-
Lisp	30	28	14	17	15	10	7	2
(Visual) Basic	-	-	7	4	5	3	3	7

There are 2 important remarks here:

- There is a difference between "Visual Basic" and "(Visual) Basic" in the table above. Until 2010, "(Visual) Basic" referred to all possible dialects of Basic, including Visual Basic. After some discussion, it has been decided to split "(Visual) Basic" into all its dialects such as Visual Basic .NET, Classic Visual Basic, PureBasic, and Small Basic, just to name a few. Since Visual Basic .NET has become the major implementation of Visual Basic, it is now called "Visual Basic".
- The programming language SQL was added to the TIOBE index in 2018 after somebody pointed out that SQL is Turing Complete. So although this language is very old, it has only a short history in the index.

Programming Language Hall of Fame

The hall of fame listing all "Programming Language of the Year" award winners is shown below. The award is given to the programming language that has the highest rise in ratings in a year.

Year	Winner
2023	C#
2022	C++
2021	Python
2020	Python
2019	C
2018	Python
2017	C
2016	Go
2015	Java
2014	JavaScript
2013	Transact-SQL
2012	Objective-C
2011	Objective-C
2010	Python
2009	Go
2008	C
2007	Python
2006	Ruby
2005	Java
2004	PHP
2003	C++

Bugs & Change Requests

This is the top 5 of most requested changes and bugs. If you have any suggestions how to improve the index don't hesitate to send an e-mail to tpci@tiobe.com.

1. Apart from "<language> programming", also other queries such as "programming with <language>", "<language> development" and "<language> coding" should be tried out.

2. Add queries for other natural languages (apart from English). The idea is to start with the Chinese search engine Baidu. This has been implemented partially and will be completed the next few months.
3. Add a list of all search term requests that have been rejected. This is to minimize the number of recurring mails about Rails, JQuery, JSP, etc.
4. Start a TIOBE index for databases, software configuration management systems and application frameworks.
5. Some search engines allow to query pages that have been added last year. The TIOBE index should only track those recently added pages.

Yes, the only condition is to refer to its original source “www.tiobe.com”.

If a language meets the criteria of being listed (i.e. it is Turing complete and has an own Wikipedia entry that indicates that it concerns a programming language) and it is sufficiently popular (more than 5,000 hits for +”<language> programming” for Google), then please write an e-mail to tpci@tiobe.com.

We spent a lot of effort to obtain all the data and keep the TIOBE index up to date. In order to compensate a bit for this, we ask a fee of 5,000 US$ for the complete data set. The data set runs from June 2001 till today. It started with 25 languages back in 2001, and now measures more than 150 languages once a month. The data are available in comma separated format. Please contact sales@tiobe.com for more information.

Well, you can do it either way and both are wrong. If you take the sum, then you get the intersection twice. If you take the max, then you miss the difference. Which one to choose? Suppose somebody comes up with a new search term that is 10% of the original. If you take the max, nothing changes. If you take the sum then the ratings will rise 10%. So taking the sum will be an incentive for some to come up with all kinds of obscure terms for a language. That’s why we decided to take the max.

The proper way to solve this is is of course to take the sum and subtract the intersection. This will give rise to an explosion of extra queries that must be performed. Suppose a language has a grouping of 15 terms, then you have to perform 32,768 queries (all combinations of intersections). So this seems not possible either… If somebody has a solution for this, please let us know.

Get your own proof of concept

Curious how your projects will be ranked by our TiCS Framework? Request your proof of concept now to discover the quality of your code.

Request a demo

Schedule a demo