10 Best Programming Languages to Learn in 2020 (for Job & Future)

Posted in Software Development (https://hackr.io/blog/category/software-development), Programming (https://hackr.io/blog/category/programming)

Aman Goel
(https://hackr.io/blog/author/amangoel)
Last Updated 29 Feb, 2020

Share:

(https://twitter.com/intent/tweet?text=10+Best+Programming+Languages+to+Learn+in+2020+%28for+Job+%26+Future%29+https%3A%2F%2Fhackr.io%2Fblog%2Fbest-programming-languages-to-learn-2020-jobs-future) (https://www.linkedin.com/shareArticle?mini=true&url=https://hackr.io/blog/best-programming-languages-to-learn-2020-jobs-future) (http://www.reddit.com/submit?url=https://hackr.io/blog/best-programming-languages-to-learn-2020-jobs-future) (https://news.ycombinator.com/submitlink?u=https://hackr.io/blog/best-programming-languages-to-learn-2020-jobs-future) (https://api.whatsapp.com/send?text=https%3A%2F%2Fhackr.io%2Fblog%2Fbest-programming-languages-to-learn-2020-jobs-future)

70 Comments

Table of Contents

The most important skill to learn in today's world is to know how to write a computer program. Today, computers have entered in almost every industry. Be it the autopilot in an aircraft or digital speedometer in your bike, computers in various forms surround us. Computers are extremely useful for an organization to scale up well. Gone are the days of pen and paper. Today, in order to store and access your information, you absolutely need computers.

The programming and developer communities are emerging at a rate faster than ever before. Various new programming languages are coming up that are suited for different categories of developers (beginners, intermediate, and experts) as well as for different use cases (web application, mobile applications, game development, distributed system, etc). Every beginner is puzzled with the question, "What programming language should I learn?" Let us take a look at best Programming Languages to learn in 2020 for a job and for future prospects:

1. Python

Python (https://www.python.org/) undoubtedly tops the list. It is widely accepted as the best programming language to learn first. Python is fast, easy-to-use, and easy-to-deploy programming language that is being widely used to develop scalable web applications. YouTube, Instagram, Pinterest, SurveyMonkey are all built-in Python. Python provides excellent library support and has a large developer community. The programming language provides a great starting point for beginners. Talking about those who are looking for a better job, you should definitely learn Python ASAP! A lot of startups are using Python as their primary backend stack and so, this opens up a huge opportunity for full-stack Python developers. Here is a sample Python "Hello World!" program:

```
print "Hello World!"
```

Yes, Python is that simple! Anyone who wishes to join a startup should master Python programming (https://hackr.io/tutorials/learn-python?ref=blog).

Difficulty level: Easy to learn. Best language for beginners. 5 out of 5.
Job opportunity: Huge! 5 out of 5.

Pros:

- Creating and using classes and objects is easy thanks to OOP characteristics
- Extensive library support
- Focuses on code readability
- Has the ability to scale even the most complex applications
- Ideal for building prototypes and testing out ideas faster
- Open-source with an ever-growing community support
- Provides support for a multitude of platforms and systems
- Very easy to learn (https://hackr.io/tutorials/learn-python?ref=blog-post) and use

Cons:

- Not suitable for mobile computing
- Slower by virtue of being an interpreted programming language
- The database access layer is somewhat immature
- Threading isn't good because of GIL (Global Interpreter Lock)

2. Java

Java (https://www.java.com/en/) is another popular choice in large organizations and it has remained so for decades. Java is widely used for building enterprise-scale web applications. Java is known to be extremely stable and so, many large enterprises have adopted it. If you are looking for a development based job at a large organization, Java is the language that you should learn. Java is also widely used in Android App Development. Almost any business today needs an Android Application owing to the fact that there are billions of Android users today. This opens up a huge opportunity for Java developers given the fact that Google has created an excellent Java-based Android development framework - Android Studio.

Difficulty level: Easy to moderate to learn. 4 out of 5.
Job opportunity: Huge! 4.5 out of 5. [Best Java tutorials and courses (https://hackr.io/tutorials/learn-java?ref=blog)]

Pros:

- An abundance of open-source libraries
- Automatic memory allocation and garbage collection
- Follows the OOP paradigm
- Has the stack allocation system
- A high degree of platform independence thanks to the JVM feature
- Highly secure due to the exclusion of explicit pointer and inclusion of a security manager responsible for defining the access of classes
- Ideal for distributed computing
- Offers a galore of APIs for accomplishing different tasks, such as database connection, networking, utilities, and XML parsing
- Supports multithreading

Cons:

- Absence of templates limits creating high-quality data structures
- Expensive memory management
- Slower than natively compiled programming languages, like C and C++

3. C/C++

C/C++ is like the bread and butter of programming. Almost all low-level systems such as operating systems, file systems, etc are written in C/C++. If you wish to be a system-level programmer, C/C++ is the language you should learn. C++ is also widely used by competitive programmers owing to the fact that it is extremely fast and stable. C++ also provides something called STL - Standard Template Library. STL is a pool of ready-to-use libraries for various data structures, arithmetic operations, and algorithms. The library support and speed of the language make it a popular choice in the High-frequency trading (https://www.investopedia.com/terms/h/high-frequency-trading.asp) community as well.

Difficulty level: Easy to moderate to learn. 3 out of 5.
Job opportunity: Moderate! 3.5 out of 5.

Pros:

- A galore of compilers and libraries to work with [C++]
- Eases accessing blocked or hidden objects by other programming languages [C]
- Faster execution of programs than most programming languages [C/C++]
- Forms the basis for understanding more complex programming languages [C/C++]
- Language of choice for multi-device, multi-platform app development [C++]
- Offers a great degree of portability [C]
- Procedure-oriented language with a group of function modules and blocks. These make debugging, testing, and maintaining the programs easier [C]

- Programs are more efficient and easy to understand [C/C++]
- Rich function library [C++]
- Runs close to the system hardware and hence, offers a low level of abstraction [C/C++]
- Support exception handling and function overloading [C++]
- Wide variety of application domains, such as games, GUI applications, and real-time mathematical simulations [C++]

Cons:

- Complex syntax [C/C++]
- Doesn't support program namespace [C]
- Incapable of solving modern, real-world programming challenges [C]
- Less efficient object-oriented system compared to other OOP-based programming languages [C++]
- Need to manually create the high-level constructs [C]
- No garbage collection or dynamic memory allocation [C/C++]
- No run-time checking [C/C++]
- No strict type checking [C]
- Not an easy first-choice for learning programming [C/C++]
- Plagued by the issues of buffer overflow and memory corruption [C/C++]
- Smaller standard library [C]

4. JavaScript

JavaScript (https://www.javascript.com/) is the "frontend" programming language. JavaScript is widely used to design interactive frontend applications. For instance, when you click on a button which opens up a popup, the logic is implemented via JavaScript.

These days, many organizations, particularly startups, are using NodeJS which is a JavaScript-based run-time environment. Node.js lets developers use JavaScript for server-side scripting—running scripts server-side to produce dynamic web page content before the page is sent to the user's web browser. Hence now with JS, you can use a single programming language for server-side and client-side scripts. If you are looking for that cool tech job at your favorite startup, you should seriously consider learning JavaScript.

Difficulty level: Easy to learn. 4.5 out of 5.
Job opportunity: Huge! 5 out of 5. [Best JavaScript tutorials and courses (https://hackr.io/tutorials/learn-javascript?ref=blog)]

Pros:

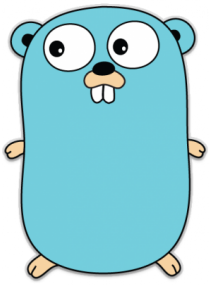
- Client-side JavaScript is very fast. It runs immediately within the web browser as there is no compilation requirement
- Gives a richer interface to a website
- Highly versatile
- It is the programming language of the web
- Reduced website server demand by virtue of being client-side

- Regular updates via the ECMA specification
- Several add-ons, such as Greasemonkey, for extending the functionality
- Simplistic implementation
- Plenty of resources and a mammoth community support
- Used for building a diverse range of applications
- Works exceptionally well with other programming languages

Cons:

- Absence of copy or equivalent method
- Allows only single inheritance
- As the code executes on the user machine, many people choose to disable JavaScript due to the fear of being exploited for a malicious intent
- Might be interpreted differently by different browsers

5. Go programming language



Go, also known as Golang, is a programming language built by Google. Go provides excellent support for multithreading and so, it is being used by a lot of companies that rely heavily on distributed systems. Go is widely used in startups in Silicon Valley. However, it is yet to be adopted by Indian companies/startups. Those who wish to join a Valley-based startup specializing in core systems should master Golang.

Difficulty level: Easy to moderate to learn. 3 out of 5.
Job opportunity: Moderate! 2.5 out of 5. [Best Golang tutorials (https://hackr.io/tutorials/learn-golang?ref=blog)]

Pros:

- Backed by Google
- Being a statically-typed language makes it more secure
- Cleaner syntax makes it easier to learn
- Comprehensive standard library offering a range of inbuilt functions for working with primitive types
- Ideal for building SPAs (single-page applications)
- Smart documentation
- Very fast as it is compiled to machine code

Cons:

- Absence of a virtual machine makes complex programs less efficient
- Implicit interfaces
- Lacks versatility
- No GUI library

- Underprivileged library support

6. R

R programming language (https://www.r-project.org/about.html) is one of the most commonly used programming languages for Data Analysis and Machine Learning. R provides an excellent framework and built-in libraries to develop powerful Machine Learning algorithms. R is also used for general statistical computing as well as graphics. R has been well adopted by enterprises. Those who wish to join "Analytics" team of a large organization should definitely learn R.

Difficulty level: Easy to moderate to learn. 3 out of 5.
Job opportunity: Huge! 4 out of 5. [Best R tutorials (https://hackr.io/tutorials/learn-r?ref=blog)]

Pros:

- Ability to run seamlessly on various operations systems
- Active, mushrooming community
- Being open-source and free grants the ability to make tweaks as per the requirements
- Comprehensive statistical analysis language
- Highly extensible
- Powerful package ecosystem

Cons:

- Lacks security features
- No strict programming guidelines
- Poor memory management
- Quality of some packages is subpar

7. Swift

Swift (https://developer.apple.com/swift/) is the programming language that is used to develop iOS applications. iOS-based devices are becoming increasingly popular. Apple iPhone, for instance, has captured a significant market share and is giving a tough competition to Android. Therefore, those who want to serve this community can learn Swift programming.

Difficulty level: Easy to moderate to learn. 3.5 out of 5.
Job opportunity: Huge! 4 out of 5. [Best Swift tutorials (https://hackr.io/tutorials/learn-ios-swift?ref=blog)]

Pros:

- Automatic memory management prevents memory leaks
- Backed by Apple
- Better scalability allows easily adding functionalities to the product and/or bringing in additional developers
- Easy to add new features
- Encourages developers to write clean and readable code
- English-like syntax makes it highly readable

- Interoperable with Objective-C
- It is possible to integrate Server-side Swift with any technology
- Makes code sharing better and development process faster when used for both frontend and backend development
- Very fast as compared to other popular programming languages, such as Objective-C and Python

Cons:

- Limited community support and resources
- Somewhat unstable due to being a relatively new arrival on the programming scene
- No support for legacy projects; can be used only for iOS7 or later apps

8. PHP

PHP is among the most popular backend programming language. Though PHP is facing tough competition from Python (https://hackr.io/blog/python-vs-php) and JavaScript, the market still needs a large number of PHP developers. Those who wish to join a reasonably well old organization as a backend developer should aim to learn PHP programming.

Difficulty level: Easy to learn. 4.5 out of 5.
Job opportunity: Huge! 4.5 out of 5. [Best PHP tutorials and courses (https://hackr.io/tutorials/learn-php?ref=blog)]

Pros:

- Abundance of powerful frameworks
- Easy to get started for making web pages
- First-class debugging with Xdebug
- Gigantic community support and a huge ecosystem
- Lots of automation tools for testing and deploying applications
- No scarcity of good automation tools for deployment and testing
- Supports object-oriented and functional programming paradigms (https://hackr.io/blog/programming-paradigms)

Cons:

- Developing websites completely in PHP is slower as compared to using other options
- Lacks in terms of security
- Poor error handling
- Requires extensions to a greater extent

9. C#

C# is a general-purpose programming language developed by Microsoft. C# is widely used for backend programming, building games (using Unity), building Window mobile phone apps and lots of other use cases.

Difficulty level: Easy to moderate to learn. 3.5 out of 5.
Job opportunity: 2.5 out of 5. [Best C# tutorials and courses (https://hackr.io/tutorials/learn-c-sharp?ref=blog)]

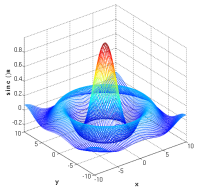
Pros:

- As pointer types aren't permitted, much safer than C and C++
- Ability to work with shared codebases
- Automatic scalable and updateable
- Component-oriented, object-oriented programming language
- Follows a syntax similar to the C programming language
- Fully integrated with the .NET library
- Ideal for all types of Windows development
- Rich sets of library functions and data types
- Supports type safety
- Quick compilation and execution times

Cons:

- Allows pointers in 'unsafe' blocks
- Almost all variables are references and memory deallocation is implicit using a garbage collector
- Offers less flexibility than C++
- Requires decent effort and time to learn
- Resolving errors requires serious expertise and knowledge

10. MATLAB



MATLAB (https://www.mathworks.com/products/matlab.html) is a statistical analysis tool that is used in various industries for Data Analysis. MATLAB is used widely in the Computer Vision and Image processing industry as well.

Difficulty level: Easy to moderate to learn. 3 out of 5.
Job opportunity: Huge! 4 out of 5. [Best MATLAB tutorials and courses (https://hackr.io/tutorials/learn-matlab?ref=blog)]

Pros:

- Eases developing scientific simulation thanks to a rich inbuilt library
- Functionality can be extended greatly by adding toolboxes
- High coding efficiency and productivity as it doesn't require a compiler for execution
- Ideal for developing scientific research applications
- Matlab Coder allows converting code for using in other programming languages, such as C++, Java, and Python
- Platform-independent

Cons:

- Not free to use, requires purchasing a license
- Not much application beyond the scope of numerical computing
- Dealing with errors generated during cross-compilation requires extensive knowledge and experience
- Slower due to being an interpreted programming language

Summary

- Python and JavaScript (https://hackr.io/blog/python-vs-javascript) are hot in the startup world. Many startups use Django (Python), Flask (Python), and NodeJS (JavaScript) as their backend frameworks. Python and JavaScript are easy-to-learn and therefore considered the best programming languages (https://hackr.io/blog/what-is-programming-language) to learn for beginners. Moreover, both of them also provide a huge market opportunity. Therefore, those who are looking for a job change may also consider learning them.
- Java and PHP are hot in the corporate world. Many organizations use Spring (Java) and Codeigniter (PHP) as their web backend framework (https://hackr.io/blog/top-10-web-development-frameworks-in-2020).
- R and MATLAB (https://hackr.io/blog/r-vs-matlab) are hot in the Data Analytics world. If you wish to develop a career in Data Analytics or Data Science, these are the languages to learn.
- C/C++ and Golang are the top choices in building low-latency and scalable systems.

I hope you would have found your answer to "which programming language to learn first" by now. Feel free to ask your question(s) in the comment, and I'll be happy to respond. All the best!

People are also reading:

- Top Programming Interview Questions (https://hackr.io/blog/programming-interview-questions)
- Best Web Development IDE (https://hackr.io/blog/web-development-ide)
- What is Functional Programming? (https://hackr.io/blog/functional-programming)
- What is Procedural programming? (https://hackr.io/blog/procedural-programming)
- How to Learn Programming? (https://hackr.io/blog/how-to-learn-programming)
- Top SDLC Methodologies (https://hackr.io/blog/sdlc-methodologies)
- What is RAD? (https://hackr.io/blog/rapid-application-development-model)

Web Development (https://hackr.io/blog/tag/web-development) Javascript (https://hackr.io/blog/tag/javascript) Python (https://hackr.io/blog/tag/python) Java (https://hackr.io/blog/tag/java) Swift (https://hackr.io/blog/tag/swift) Programming (https://hackr.io/blog/tag/programming) Software Development (https://hackr.io/blog/tag/software-development) Golang (https://hackr.io/blog/tag/golang)

R (https://hackr.io/blog/tag/r) C (https://hackr.io/blog/tag/c) PHP (https://hackr.io/blog/tag/php)
MATLAB (https://hackr.io/blog/tag/matlab)

Share:
(https://twitter.com/intent/tweet?text=10+Best+Programming+Languages+to+Learn+in+2020+%28for+Job+%26+Future%29+https%3A%2F%2Fhackr.io%2Fblog%2Fbest-programming-languages-to-learn-2020-jobs-future) (https://www.linkedin.com/shareArticle?mini=true&url=https://hackr.io/blog/best-programming-languages-to-learn-2020-jobs-future) (http://www.reddit.com/submit?url=https://hackr.io/blog/best-programming-languages-to-learn-2020-jobs-future) (https://news.ycombinator.com/submitlink?u=https://hackr.io/blog/best-programming-languages-to-learn-2020-jobs-future) (https://api.whatsapp.com/send?text=https%3A%2F%2Fhackr.io%2Fblog%2Fbest-programming-languages-to-learn-2020-jobs-future)

Aman Goel

(https://hackr.io/blog/author/amangoel)
Entrepreneur, Coder, Speed-cuber, Blogger, fan of Air crash investigation! Aman Goel is a Computer Science Graduate from IIT Bombay. Fascinated by the world of technology he went on to build his own start-up - AllinCall Research and Solutions to build the next generation of Artificial Intelligence, Machine Learning and Natural Language Processing based solutions to power businesses. View all posts by the Author (https://hackr.io/blog/author/amangoel)

Related Posts

(https://hackr.io/blog/how-to-code-a-game)

How to Code a Game: Building a Game

(https://hackr.io/blog/how-to-code-a-game) **Read More (https://hackr.io/blog/how-to-code-a-game)**

(https://hackr.io/blog/web-development-ide)

Best Web Development IDE

(https://hackr.io/blog/web-development-ide) **Read More (https://hackr.io/blog/web-development-ide)**

(https://hackr.io/blog/programming-interview-questions)

Programming Interview Questions

(https://hackr.io/blog/programming-interview-questions) **Read More (https://hackr.io/blog/programming-interview-questions)**

Leave a comment

Email address*

Enter email

Your email will not be published

Name*

Name

Comment*

SUBMIT

loombago
My TOP 5 is:
#1 Python - best all-rounder, best for newbies and must know for DS and ML
#2 JS - must know for web, growing at back-end as well
#3 Kotlin - best JVM language, future (soon) king of android moble apps
#4 C# - must know for .Net ecosystem, very good all-rounder on pair with Java at big corporations
#5 Rust - C-challenger for system development, blazingly fast and secure

Reply

designer
thanks for sharing the web design coding related information

Reply

Kevin Malonza
Very detailed and educative review

Reply

Amaia Jason
Informative post. Artificial Intelligence and Machine Learning both emerging technologies enhanced the nature of every industry even in web development and AI is emerging in web apps, web design, mobile app development and has changed the vision of people.

Reply

Kaleab
How many hours per a day I have to exercise (code)

Reply

Damiano
Is difficulty level reported completely useless? I don't think that difficulty level of C/C++ is "Easy to moderate to learn. 3 out of 5. "

Reply

Urhen
I agree. Also, none below of 3

Reply

Vlad
I agree, the 3/5 for difficulty is a joke. I do not know any harder to learn language than C++. Btw. anyone who combines two very distinct languages C and C++ into one "language" C/C++ demonstrates he knows nothing about programming.

Reply

Jones
Wow! Thank you so much!!!

Reply

Arunkumar
Why you are not listed Dart and Kotlin ?

Reply

Bridgette
Hi, I have a little experience with C++ and HTML, but I want to learn these languages:

Python and JavaScript
Java and PHP
C/C++ and Golang

Do you suggest learning them in this order?

Thanks,
Bridgette

Reply

Mo
Avoid PHP at all costs.

Reply

David Mckinsey
Still 10 languages! What programming language should I learn?

Reply

LOAD MORE COMMENTS

Related Tutorials

Data Science

(https://hackr.io/tutorials/learn-data-science)

Intro to Programming

(https://hackr.io/tutorials/learn-intro-to-programming)

JavaScript

(https://hackr.io/tutorials/learn-javascript)

Python

(https://hackr.io/tutorials/learn-python)

Top Blogs

What is Data Science? (https://hackr.io/blog/what-is-data-science)
Programming Languages 2020 (https://hackr.io/blog/best-programming-languages-to-learn-2020-jobs-future)
Web Development Frameworks (https://hackr.io/blog/top-10-web-development-frameworks-in-2020)
Python Books (https://hackr.io/blog/best-python-books-for-beginners-and-advanced-programmers)
Numpy Matrix Multiplication (https://hackr.io/blog/numpy-matrix-multiplication)

Java IDE (https://hackr.io/blog/best-java-ides)
IoT Applications (https://hackr.io/blog/top-10-iot-applications)
Javascript Map (https://hackr.io/blog/javascript-map)
Features of Java (https://hackr.io/blog/features-of-java)
Normalization in DBMS (https://hackr.io/blog/dbms-normalization)

Interview Questions

Angular Interview Questions (https://hackr.io/blog/angular-interview-questions)
Python Interview Questions (https://hackr.io/blog/python-interview-questions)
C++ Interview Questions (https://hackr.io/blog/cpp-interview-questions)
Selenium Interview Questions (https://hackr.io/blog/selenium-interview-questions)
SQL Interview Questions (https://hackr.io/blog/top-sql-interview-questions)
Java Interview Questions (https://hackr.io/blog/java-interview-questions)
Javascript interview Questions (https://hackr.io/blog/javascript-interview-questions)
PHP Interview Questions (https://hackr.io/blog/php-interview-questions)
Spring Interview Questions (https://hackr.io/blog/spring-interview-questions)
AWS Interview Questions (https://hackr.io/blog/aws-interview-questions)

Top Courses/Certifications

Python Course (https://hackr.io/blog/best-python-courses)
Data Analytics Course (https://hackr.io/blog/data-analytics-courses)
Javascript Course (https://hackr.io/blog/best-javascript-courses)
Web Developer Course (https://hackr.io/blog/best-web-developer-courses-for-beginners)
C Course (https://hackr.io/blog/best-c-courses)
SQL Certification (https://hackr.io/blog/sql-server-certifications)
Java Certification (https://hackr.io/blog/java-certification-courses)
Python Certification (https://hackr.io/blog/python-certification)
Machine Learning Certification (https://hackr.io/blog/machine-learning-certifications)
AWS Certification (https://hackr.io/blog/aws-certifications)
