



# SIX IN-DEMAND PROGRAMMING LANGUAGES: GETTING STARTED

By Nick Heath

# INTRODUCTION

Determining which programming language will best meet your needs can be daunting for new developers. To shed light on this question, developer hubs such as Stack Overflow and GitHub release data on the most popular languages on their platforms.

Below are the programming languages that have topped the biggest developer surveys and roundups in 2018. Here's what you need to know about each language, the jobs that require them, and how to begin learning them.

## 1. JAVASCRIPT

### What is it used for?

While JavaScript originated as a web-scripting language, today it is used on everything from node.js backend servers to internet of things devices via Node-RED. That said, most jobs asking for JavaScript are web-related.

Historically, JavaScript had a chequered reputation, due to unpredictable behavior and its idiosyncratic approach. However, more recent releases of the language have addressed some of these concerns, and derivatives such as TypeScript allow developers to build larger and more complex programs.

### Typical jobs

Web developer, full-stack developer, front-end developer

### Tutorial for getting started

The [official Mozilla tutorial](#)

### Alternate language

There are numerous JavaScript spinoff languages, although use of [TypeScript](#) is growing fast and with a bit of effort can be used in place of JavaScript.

### Online communities

[Stack Overflow](#) and the [Learn JavaScript](#) and [JavaScript](#) subreddits

## 2. JAVA

### What is it used for?

Java is the workhorse of the modern enterprise, having been the language of choice for writing server-side business software for more than decade. Beyond business, Java is also an official language used for developing Android apps and is used for games and web apps.

Its ubiquitous nature means that [Java developers continue to remain in high demand](#). While Java is now on release 10, the [most commonly used version remains Java 8](#).

### Typical jobs

Software engineer, software architect, and DevOps engineer

### Tutorial for getting started

The [official Oracle tutorial](#)

### Alternate language

Kotlin, an official Android programming language that combines modern language features with 100% Java interoperability; its popularity is exploding

### Online communities

[Stack Overflow](#) and [Learn Java subreddit](#)

## 3. PYTHON

### What is it used for?

The current [machine-learning](#) boom has fuelled a sharp uptick in the number of developers learning Python. Outside of the language's use in big data analytics, Python's versatility is evident in its range of uses, from web and desktop apps to orchestrating system operations.

Python code is relatively easy to read and understand, supports multiple programming paradigms, has a wide range of software libraries that can be dropped into code, and can be scaled to large applications.

Jacqueline Kazil, board director of the Python Software Foundation (PSF), [predicted Python's popularity will continue to grow](#), alongside demand for machine learning, due to the language's accessibility and usefulness.

## Typical jobs

Data engineer, full-stack developer, software engineer

## Tutorial for getting started

The [official tutorial for learning Python](#)

## Alternate languages

R for data science, Ruby for DevOps

## Online communities

The [python.org community](#), [Stack Overflow](#), and the [Learn Python](#) subreddit

# 4. PHP

## What is it used for?

A longstanding and oft-criticized language, PHP is widely used across the web to help serve web pages and apps.

Despite [garnering harsh criticism](#) for shortcomings in its design, PHP has survived for decades and still underpins popular CMS systems such as WordPress. It's also still being used by major sites such as Google and Facebook. Like Java, PHP's widespread nature means demand for developers is unlikely to go away.

## Typical jobs

Web developer, WordPress PHP developer

## Tutorial for getting started

[PHP The Right Way](#)

## Alternate language

A good alternative server-side scripting language might be Python or JavaScript running in a node.js environment.

## Online communities

The #phpc channel on [irc.freenode.com](#), [Stack Overflow](#), and the [Learn PHP](#) subreddit

## 5. C#

### What is it used for?

Microsoft's object-oriented language has the benefit of being well-documented and relatively easy to learn, with a lot of useful software libraries to prevent developers from having to reinvent the wheel.

The language, created in 2000 as a rival to Java, runs on Microsoft's .NET framework and is popular for building Windows desktop applications, as well as web and, more recently, mobile apps. Its uses continue to grow as Xamarin tools enable C# to be used to write apps for Android, iOS, and other mobile devices.

### Typical jobs

Full-stack developer, .NET developer, web developer

### Tutorial for getting started

This [Microsoft course on C# fundamentals](#)

### Alternate language

C++ for Windows applications, JavaScript with a framework such as React for web apps

### Online communities

[C-Sharp corner](#), [Stack Overflow](#), and [CSharp](#) and [Learn CSharp](#) subreddits

## 6. C++

### What is it used for?

C++ is a favorite for games and complex business applications, largely because it can run extremely efficiently and offers precise control over memory use.

Its ability to squeeze the best performance from systems means it's a popular choice for software running on microcontroller boards, as well as for low-level software on PCs, such as operating systems and hardware drivers. The downside is that C++ can be difficult to learn due to its complexity.

### Typical jobs

Embedded engineer, games engine software engineer, system software developer

## Tutorial for getting started

The [Learn C++ site](#)

## Alternate language

Although still a work in progress, Mozilla is aiming to give the Rust programming language similar performance to C++, while adding fine control over memory management.

## Online communities

[Stack Overflow](#) and [C++ subreddit](#)

The languages above are those that featured in the top 10 across the following lists: the most popular technologies in [StackOverflow's 2018 Developer Survey](#) and [RedMonk's Programming Rankings](#).

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