

5 best programming languages to learn for cyber security

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Lectura: 5 best programming languages to learn for cyber security 5 best programming languages to learn for cyber security

Becoming successful as a cyber security expert requires diverse skills. An all-round professional can confidently implement and monitor security measures that guard computer systems against attacks and unauthorized access.

Henrique, a Brazil-based Python expert who teaches people how to create applications using the language, emphasizes that "besides keeping abreast with the latest happenings in the cyber security field, you also need to be acquainted with various programming languages".

Here are 5 best programming languages to learn to make your cyber security career worthwhile.

1. C and C++. C and C++ are critical low-level programming languages that you need to know as a cyber security professional.

These languages provide access to low-level IT infrastructure such as RAM and system processes, which if not well protected, hackers can easily exploit. The C programming language is the backbone of most operating systems. It is a lean, flexible, and efficient language that can be used to complete a wide range of tasks such as cryptography, image processing, and socket networking.

Essentially, C++ is usually regarded as C's big brother — which has been concocted with crack, meth, and steroids and mixed without any favors. C++ is a fantastic language that is largely based on C's source code.

There are several cyber security programs created using C++. For example, Nmap, the network mapper tool, is created using C++.

Here is a marvelous quote from Bjarne Stroustrup, the creator of C++:

"C makes it easy to shoot yourself in the foot; C++ makes it harder, but when you do, it blows your whole leg off."

As a cyber security expert, if you are experienced at using C/C++ programming languages, you'll know how to respond to attacks targeting lower level operations within your computing environment.

2. Python. Python is a high-level programming language that is increasingly becoming popular among cyber experts.

It's gaining traction mainly because of its adherence to code readability, clear and simple syntax, and availability of an extensive number of libraries.

So, whatever task you want to do, you can always complete it easily with Python.

For example, you can use the language to send TCP-packets to machines, perform malware analysis, and create intrusion detection systems with minimal reliance on third-party tools.

However, unlike C/C++, Python is not low-level; therefore, it may not provide enough visibility to hardware resources.

Learning Python for cyber security will give you an edge in your career. You'll be equipped with programming skills that can assist you to identify vulnerabilities and discover how to fix them.

Although JavaScript was initially implemented only on the client-side in web browsers, it's now possible to use the language in other types of host infrastructure, such as server-side in databases and offline applications like PDF programs.

Therefore, because of its extensive usage, learning JavaScript can make you go one step ahead of the hackers.

You'll understand the concepts of how websites and other applications work and the best designs to employ to ward off malicious users.

For example, cross-site scripting is a JavaScript-based attack that involves an attacker implanting malicious code in a web application.

If you are experienced in using the JavaScript programming language, you can prevent such types of attacks from occurring.

4. PHP. PHP is a server-side programming language for developing websites. Because most websites are created using PHP, learning the language will enable you to know how to fend off intruders.

For example, DDoS (Denial-of-service) attacks usually attempt to make web applications unavailable to intended users.

With PHP programming knowledge, coupled with skills in other technologies like JavaScript, you can implement robust solutions to secure web applications.

5. SQL. SQL (Structured Query Language) is mostly used in managing data stored in databases. Because of the current explosion of data storage systems, SQL is widely used for maintaining and retrieving data.

Similarly, hackers are increasingly orchestrating the language for damaging or exfiltrating the stored data.

For example, SQL injection attacks involve exploiting SQL vulnerabilities to steal or modify data kept in databases.

Therefore, having a good understanding of the SQL language is critical in your cyber security career.

Wrapping up

The above is not an exhaustive list of the best programming languages for cyber security.

Depending on your specific use-case, you may find that one language fits your role better than the others.

For example, if you want to focus on securing the frontend of a web application, learning JavaScript could be your ideal choice.

Nonetheless, to be an all-round cyber geek, you need to employ a reconnaissance-approach: the more languages you learn, the better.

You never know which one could save your day.

Which is your best cyber security programming language?

READING COMPREHENSION QUESTIONS

- 1) Why did the author quote Henrique?
 - a. To give examples of the best programming languages
 - b. To teach people how to create applications
 - c. To show that knowledge of programming languages is beneficial

- 2) Can you name the two tasks that an all-round professional can perform?
 - a. Guard computer systems against attacks and unauthorized access
 - b. Monitor security measures and become a successful expert.
 - c. Implement security measures and monitor them.

- 3) Can you provide a definition for "a successful cybersecurity expert"?
 - a. Someone who creates applications with Python
 - b. Someone who can confidently implement security measures and monitor those measures
 - c. Someone who teaches people how to create applications

- 4) What is a key idea of the text?
 - a. A cybersecurity expert needs to be aware of the latest happenings in the field and to have knowledge of programming languages
 - b. Henrique, a Python expert, teaches people how to create applications
 - c. An all-round professional needs to teach people how to create applications using Python

- 5) Can you identify the programming language used for maintaining data?
 - a. C++
 - b. PHP
 - c. SQL

- 6) What would happen if you had knowledge of various programming languages?
 - a. You would be a better cybersecurity expert
 - b. You would have to teach people how to create applications
 - c. You couldn't develop a career in cybersecurity

