|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Parameter | Python | C++ | Java | C | JavaScript | Swift |
| Object oriented? | Y | Y | Y | N | Y | Y |
| Generic? | N | Y | Y | N | Y | Y |
| Procedural? | Y | Y | Y | Y | N | N |
| Cross-Platform? | Y | N | Y | N | Y | Y |
| Level? | High | High | High | Low | High | High |
| Type checking? | Dynamic | Static/Dynamic | Static | Static | Dynamic | Static |
| Benefits? | * Flexible * Naturally/Intuitively readable * Highly regarded official tutorials and documentation * Scripted as opposed to compiled | Allows for the better control of the program. | * Regarded as a good start for learning to think like a programmer and gain coding skills | Used to learn the fundamentals of Lowest level of programming i.e. hardware. | Enables dynamic and interactive websites  • Popular for both frontend and backend development  • Huge ecosystem with libraries and frameworks | Modern syntax and easy to read  Strongly typed, leading to safer code |
| Disadvantages? | Doesn’t start with programming basics (known to abstract too many important basic concepts) | A bit more challenging to pick up and become productive with than C (and even more so than Java) | Lots of new vocabulary to learn; a higher-level language | Coding in C is stricter, not very beginner-friendly language, the steeper learning curve | Weakly typed, which can lead to unexpected behavior  Browser compatibility issues | Limited to Apple platforms  Frequent updates may lead to breaking changes |
| Degree of use? | Becoming continuously more popular | One of the most popular language in the world. | Widely used, highly applicable | There has been a higher migration from C to C++ | Highly popular and widely used for web development | Widely used for Apple ecosystem app development |
| Implementations- | : It is an interpreted high-level programming language that is easy to learn and use. Python has a simple syntax that makes it easy to read and write code. It has a large standard library that provides support for many common programming tasks such as web development, data analysis, artificial intelligence, machine learning, and more. Python is widely used in scientific computing, data analysis, web development, and other areas | It is an extension of C language that supports object-oriented programming (OOP). It is used for developing applications that require high performance and efficiency. C++ is widely used in game development, operating systems, and other system software. It has a rich set of libraries that make it easy to develop complex applications | It is an object-oriented programming language that is designed to be portable across different platforms. Java programs are compiled into bytecode that can be run on any platform that has a Java Virtual Machine (JVM). Java is widely used in web development, mobile app development, game development, and other areas. It has a large standard library that provides support for many common programming tasks such as networking, database access, and more | C is a low-level language that is used for system programming. It is fast and efficient and can be used for developing operating systems, device drivers, and other system software. It is also used in embedded systems and game development. C is a procedural language that follows a top-down approach to programming. It has a simple syntax and is easy to learn. | JavaScript is an interpreted, high-level scripting language. It is mainly used for web development and allows for dynamic, interactive websites. JavaScript is commonly used in conjunction with HTML and CSS to create frontend components and to interact with backend servers through APIs. | Swift is a compiled, general-purpose programming language developed by Apple. It is designed to work with Apple's Cocoa and Cocoa Touch frameworks and is used primarily for iOS, macOS, watchOS, and tvOS app development. Swift aims to provide a clean and expressive syntax while ensuring safety and efficiency in code execution. |

| **Profession** | **Designation** | **Salary (US$)** | **Requirements** | **Top Recruiters** | **Scope** |
| --- | --- | --- | --- | --- | --- |
| Software Engineer | Software Engineer | $60,000 - $120,000+ | Bachelor's degree in Computer Science or related field | Google, Microsoft, Apple, Amazon, Software Companies | High demand, continuous tech advancements, career growth |
| Cybersecurity Analyst | Cybersecurity Analyst | $70,000 - $120,000+ | Degree in CS or related field, Cybersecurity certifications | Government agencies, Financial institutions, Tech firms | Increasing cyber threats, high demand for security professionals |
| Cloud Solutions Architect | Cloud Solutions Architect | $100,000 - $150,000+ | Bachelor's degree, Cloud certifications (AWS, Azure, etc.) | AWS, Microsoft Azure, Google Cloud, Tech Companies | Cloud adoption, scalability, cost-effectiveness |
| UI/UX Designer | UI/UX Designer | $70,000 - $110,000+ | Design degree, User research, Wireframing, UI/UX design tools | Tech companies, Design agencies | Growing focus on user experience in digital products |
| Machine Learning Engineer | Machine Learning Engineer | $90,000 - $140,000+ | Strong CS background, ML frameworks (TensorFlow, PyTorch), Python | Google, Facebook, Microsoft, AI-focused companies | Increasing demand for AI/ML applications, cutting-edge tech challenges |