What is the difference between c, c++, java & python

➢ C is a quite difficult language to learn, using an older style of programming. But it's very fast and efficient, so often used for programming small devices, or for situations where extreme efficiency is required.

C++ is also quite difficult. It's C, updated to a new programming style, called Object Oriented (OO) programming. It's almost as fast and efficient as C. It's often used to write 3D games, and for any application that has to run fast, efficiently and very smoothly.

For C and C++, you have to create binary programs from your source code (compilation) that are specific to specific types of machine. So if you write a C or C++ program on a Mac, you can't run it on Windows without compiling it on a Windows machine, usually. This is a lot of hassle.

In contrast, Java is kind of a version of C++ that's designed to be easy to write, and to run anywhere without recompilation. This is why it's the world's most popular programming language. But it's also a lot slower than C or C++, and less powerful. On the other hand, it's often quicker to write programs in Java than C++. Java programs are compiled to binary code, then this binary code is executed on a "virtual machine" (a simulated computer) that runs on your actual computer.

Python is perhaps more similar to Java than C or C++. But it is run directly through some special software, rather than being compiled. This somehow makes programming in it feel subjectively less of a big deal than putting together a Java program (in my opinion). It's a really nice language, often used for web-related stuff or for processing data.