Ten different programming languages and their uses [1]

1. Hi! My name is Masha, I'm the blonde from Coding blonde and today, I want to highlight ***ten different programming languages*** and talk about their uses. I'm going to talk about *Python*, *Java*, *JavaScript*, *Ruby*, *C*, *C#*, *C++*, *PHP*, *Swift* and *Go*. Yes, these are the ten different languages that we're going to be discussing today. So stay tuned if one of them is interesting to you.
2. ***If you're new*** to the world of programming, then make sure that you use this video in conjunction with my other video that I've made about "*how to choose which programming language you should start with*". I will leave a link to that video over here. Make sure that you watch this video first and then, go watch that video because I'm sure it's going to be super helpful for you if you're in that position right now. And don't forget to get my free guide to free coding courses, where you can try out the basics of different languages and build fundamental skills that you need to be programming in these languages. You can get that guide by clicking the link in my description, so go ahead and do that.
3. But before we get into it, I want to discuss ***some common properties*** that these languages might have. So for example, they can range from *low level* to *high level* of abstraction. And what does that mean?
   - That means that ***low level*** languages speak to machines, it's an "abracadabra" that only machines understand, human… it's not very human-friendly, it's machine-friendly.
4. - ***High level*** languages are much more removed from machines and they're much more human-friendly. So for example, think of *Python* or *JavaScript*: you can read them, right! You can understand what they say and machines don't necessarily understand that language, you have to have a program that interprets what that language means. But these languages are much more human-friendly so, you know, they have their own benefits. It takes more time for them to act because the interpreter takes some time.
5. But, basically, this is the concept of ***low level to high level*** programming languages, just so that you understand when I mentioned that. And yes, I'm not going into detail on how that works here, this is just a very brief and simplistic overview. I'm oversimplifying things, but just so that you understand that if you want to learn more about it, I'm sure you can find a lot of different *YouTube* videos or resources on this topic.
6. There are also different ***programming paradigms***, so the different types of logic that are being used. But the most common types and the ones that you probably will hear about are *object-oriented programming* and *functional programming*. Neither of them is better or worse, they're just different types of logic and there are people who prefer one or the other, and there are some people that like them both.

   I won't go into too much detail on functional versus object-oriented programming, because you know this video is not about that and I'm sure if you search on *Google* you will be able to find so many more really cool awesome resources that go in-depth, also on *YouTube* as well.

1 https://www.youtube.com/watch?v=hx4NNTYb85c

7. - Basically, ***functional logic*** is very similar to the logic that we're used to in math when doing functions and everything in school, it's very linear.
   - And ***object-oriented*** is more... it packs things in little objects that then can be manipulated and changed.
8. So it's ***just a different logic***, it's just a different approach, I guess, to programming and again some people use one or the other and they might prefer one or the other, but it's just good to know that these programming languages have a different logic type to them, because if you're switching or learning a new programming language that has a different logical flow, then you just need to be aware of that and learn that logical flow as well as the language, right. So yeah, good to know! Let's get to the programming languages.
9. All right, the first one is ***Python***. *Python* is probably one of the easiest languages to learn for beginners, because it has a very beginner-friendly and human-friendly syntax, so it's high level. It has... it is super widely used and it has a huge community out there that can help you solve problems, right! So these are *Python* enthusiasts that are talking to each other, that are asking questions, and all that stuff. So you can take advantage of that, and *Python* is very very easy to learn because of that, so also very powerful and it's just... it's just fun! I have made a separate video on *Python*, you can see it with a link in here, in this little icon and yeah, *Python* is probably one of my favorite programming languages out there.
10. Like I said, ***Python*** is high-level, it is object-oriented so it uses that type of logic, and it can be used for data mining, data visualization, web applications, machine learning, artificial intelligence, game development, etc. It is a general-purpose programming language, and it's very versatile. And major organizations that use Python are *Google*, *Pinterest*, *Instagram*, *YouTube*, *Dropbox*, and *Nasa* (a pretty good company).
11. ***Java***. *Java* is probably one of the most popular languages in the world right now, and it isn't as beginner-friendly as *Python* but it has been designed to feel similar to *C++* but is simpler to use. *Java* is also a high-level object-oriented programming language, and it is very secure because most of the banking developments, so mobile banking apps and things like that, are developed using *Java*. It is also a very powerful general-purpose programming language and is widely used for *Android* development, Internet of things, cloud computing, or to develop games or desktop applications.
12. Major organizations that use ***Java*** are *Airbnb*, *Uber*, *eBay*, *Pinterest*, *Groupon*, *Spotify*, *Pandora*, and *Square*. And a lot of people including my fellow-techie blonde Youtuber *Blondie Bytes* (I'll leave a link to her channel in there) recommend learning *Java* as your first programming languages because (and I quote) “it reveals a lot of things that are behind the scenes in other languages”. So yeah! Just a little tip from my fellow *Blondie Bytes.*
13. ***JavaScript***. *JavaScript* is a client-side programming language, which means that it works in the client’s browser – in the browser that you load – as opposed to working and interacting with a server behind the scenes. It's a high-level prototype-based object-oriented programming language and it's widely used for front-end development. But make sure that you don't confuse *JavaScript* with *Java* because they're not related at all. In fact *Blondie Bytes* also said that *JavaScript* to *Java* is like “carpet” to “car”: completely unrelated objects or programming languages in this case.
14. ***JavaScript*** is the programming language of the web and in fact, you might be interacting – you are interacting – with it right now on this page, probably interacting with it on the page that you were previously and on the one that you go to next. It is traditionally paired with *HTML* and *CSS* to make up the front-end trio of programming languages to build websites, to build the front-end of a website or any application. But, thanks to technologies like *Node.js*, you can also use *JavaScript* as a back-end language.

15. And major organizations that use ***JavaScript*** (trust me, this is not limited to just them: anybody really uses *JavaScript* if they want to make their website interactive)... so the major organizations though are *WordPress*, *SoundCloud*, *Khan Academy*, *LinkedIn*, *Groupon*, *Yahoo*, and many, many, many, many others. Needless to say, *JavaScript* is very popular and is the language of choice for many programmers.
16. ***Ruby***. *Ruby* is an object-oriented high-level programming language. It is also beginner-friendly and you can build things fairly quickly, as a beginner, using the framework called *Rails* – that's where you get *Ruby on Rails* from. It is also a general-purpose programming language and is widely used for web app development, robotics, networking, security, and system administration. It is great for simulations and is even used for simulations by *NASA* – that says something.
17. Major organizations that use ***Ruby*** are *Github*, *Scribd*, *Groupon*, *NASA Langley Research Center*, *Motorola Google* (*Google Sketchup*). And *Basecamp*, *Amazon*, *Twitter* and *Groupon* were all created using *Ruby on Rails*. *Ruby*'s founder once said about his "baby" (this programming language), and I quote: "It is simple in appearance but is very complex inside, just like our human body". Funnily enough, this was the first language that I started with.
18. ***C***. *C* may be older than you: it was released in 1972 and, at the time of this recording, it is 47 years old. And it is probably one of the most widely used programming language out there. It is a structure-oriented middle level programming language which is often used for low-level applications, meaning that it's very widely used for developing device drivers. It's very powerful and was the inspiration behind many advanced programming languages, including *C++*, *Java*, *C#*, *JavaScript* and *Perl*.
19. It is used to develop system applications that are integrated into operating systems such as *Windows*, *Unix* and *Linux*, as well as embedded software. It is ***widely used*** for systems programming, artificial intelligence, industrial automation, computer graphics, space research, image processing and game development – a lot of different cool applications. And major organizations that use *C* are *Microsoft*, *Apple*, *Oracle*, *Cisco*, and *Raytheon*.
20. ***C#***. *C#* is a multi-paradigm programming language which means that it supports multiple types of logic of the paradigms that we have discussed already. It was developed in the 2000s by *Microsoft* as part of its *.NET* initiative and was based on *C*, *C++* and *Java*. As a result, it's very similar to those programming languages and is widely used for developing *Windows* applications and games. It is a general-purpose programming language and can be used for almost anything, including gaming, web application development, and it is becoming more and more popular for mobile development. Major organizations that use it are *Microsoft*, *Intel*, and *HP*.
21. ***C++***. *C++* is an object-oriented middle level language. It was created to be an extension of the *C* programming language while having a higher level of abstraction and still keeping the power of that *C* foundation. It is a general-purpose programming language that is widely used to work with system or application software, drivers, client-server applications and embedded firmware. And major organizations that use *C++* are *Google*, *Mozilla, Firefox*, *Winamp, Adobe software*, *Amazon* and *Lockheed Martin*. And fun fact for you: the *Google* office in London where I used to work had a cafe called "C++".
22. ***PHP***. *PHP* is a multi-paradigm programming language that was designed to create dynamic web pages that work well with databases. It is a general-purpose programming language that is widely used for web application development, server-side scripting and command-line scripting.
23. Fun fact is that ***PHP*** wasn't intentionally created or designed to be a programming language. Its founder, Rasmus Lerdorf, initially wrote several programs in *C* that helped him maintain his *personal home page*. These programs worked with web forms and databases and could be used to create simple web applications. He wasn't trying to build a programming language – in fact he didn't know how to build one – but he kept on adding functionality to this program until he ended up with a programming language essentially! So, if you like organic things, this is an organic programming language.

24. Obviously, the later versions of ***PHP*** have been rewritten, so you can't see the initial inconsistency (they came from building up on things) so that it just flows much better as a programming language. And major organizations that use *PHP* are *Facebook*, *Yahoo*, *CyberCoders* and *NextGen*.
25. ***Swift*** is Apple's general-purpose multi-paradigm programming language that is used to develop apps for *iOS* and *OS X* – any type of OS, basically. It was created to preserve the main concepts of *objective-C* which is the other language that you can use to create apps for *Apple*, but it was also created to be safer, so that it catches bugs in a more eloquent and easy way, basically.
26. If you're thinking about building a native app for an *iPhone*, then ***Swift*** is probably a good choice of language for you. And major organizations that use *Swift* are obviously *Apple*, *Getty Images*, *Slack*, *Dow Jones* and *Playlist Media* – in fact any organization that has a native app on *Apple Store* has used *Swift*.
27. And finally ***Go***! *Go*, or *Go Lang,* was developed by *Google* in 2017 to improve programming productivity. It was designed to have the following features: static timing and runtime efficiency like *C++*, readability and usability like *Python* or *JavaScript* and high-performance networking and multi-processing. *Go* is a general-purpose multi-paradigm programming language. It is very concise, simple and safe, meaning that because the syntax is so simple, it's so much easier to catch and get rid of any potential bugs.
28. ***Go*** is very new, it's two years old, so it hasn't found its niche yet. But it's very powerful and is designed to solve "google-sized" problems, that are very complex. So if the idea of scaling software and solving complex problems excites you, this might be a great language to learn, it's just starting out right now. And major organizations that use *Go* are obviously *Google*, *Uber*, *Basecamp*, *Medium*, *Intel* and *BBC*.
29. I hope this was ***useful***, guys! Make sure that you download my free guide to free coding courses – the link is in the description – and if you are just starting out and are looking for the first programming language to learn, make sure you watch the video that will be linked in this corner. Please let me know what you thought about this video and if you're a seasoned programmer and if you feel like you need to add something or comment on something, please let me know in the comments as well. Obviously, like this video, share it with your friends, comment, subscribe to my *YouTube* channel and find me on other social media at *Coding Blonde*. Have a wonderful time today, you're currently experiencing. Bye!