**<https://stackoverflow.com/questions/1517582/what-is-the-difference-between-statically> typed-and-dynamically-typed-languages**

1. **Scripting Language**

* Scripting languages are programming languages that don't require an explicit compilation step.
  + javascript (JS Doesn't required explicit compilation step)
* During interpretation of Scripting language single line of code is converted into machine code
* If we want to run code on another machine then we need to share code as it is interpreted before running
* During interpretation of Scripting language single line of code is converted into machine code and hence it takes time for execution
* Scripting Language is a unstructured subset of programming language. It is generally interpreted and it targets a software system
* Scripting languages usually have less access to the computers native abilities since they run on a subset of the original programming language

1. **Programming(compiled) Language**

* In programming language, during compilation of programming language compiler takes complete source file and converts it into machine code
  + Example Java, C
* In programming language there is no need to share source code as it is already compiled and compiled files can be share if we want to run code on other machine
* programming languages are fast as its compilation is already done and only execution time is taken to run task
* Programming Language is compiled to machine code and run on the hardware of the underlying Operating System i.e. it targets computing system.
* Over the period of time differences between programming languages and structured languages are getting reduced as based on requirements different languages are developed using already available languages
  + because when Javascript runs in V8 is compiled and when it runs in Rhino is not.
* Lastly, scripting languages are also considered programming languages (although some people refuse to accept this) - the term we should be using here is scripting languages vs compiled languages.

**What is the difference between statically typed and dynamically typed languages? -** https://stackoverflow.com/questions/17253545/scripting-language-vs-programming-language

**1.Dynamically Typed**

* A language is dynamically typed if the type is associated with run-time values, and not named variables/fields/etc.
* Dynamically typed programming languages do type checking at run-time as opposed to compile-time
* dynamically typed language variables' types are dynamic, meaning after you set a variable to a type, you CAN change it. That is because typing is associated with the value it assumes rather than the variable itself
* Advantage is that programmer can write a little quicker because you do not have to specify types every time you write code
  + - Examples: Perl, Ruby, Python, PHP, JavaScript,

**2.Statically Typed**

* A language is statically typed if the type of a variable is known at compile time
* In statically typed languages type checking id done (i.e., the process of verifying and enforcing the constraints of types) at compile-time as opposed to run-time.
* statically typed language variables' types are static, meaning once you set a variable to a type, you cannot change it. That is because typing is associated with the variable rather than the value it refers to.
* The main advantage here is that all kinds of checking can be done by the compiler, and therefore a lot of trivial bugs are caught at a very early stage.
* Examples: C, C++, Java, Rust, Go, Scala