What are computer programming languages?

Technology, Computer

What are computer programming languages? A programming language can be explained to be a language that are used by the machines mainly computer systems. They are notations to write programs which are condition of a computation or algorithm. Few restrict the expression of " programming language" to those languages that are used to express all possible algorithms. The invention of computers is predated by the earlier programming languages that were used to direct the behavior of machines, for example the Jacquard loom and the player pianos. Elements: The explanation of the data of any programming language is generally split into two elements- Syntax & Semantics. A brief description of them is as follows: - Syntax: The surface form of any programming language is termed as its syntax. A major number of the programming languages are simply textual which use series of texts inclusive of words, numbers, & punctuations, so much alike the natural written languages. Whereas few other programming languages are more geographical in nature & uses relationship in between symbols to indicate a program. - Semantics: Semantic explains the meaning of any computer programming language. o Static Semantics: This kind defines the limitations on the construction of valid text which are impossible & hard to explain in standard syntactic formalisms. In case of compiled languages, this kind of semantic is basically comprised those semantic set of laws which can be checked at compile time. o Dynamic Semantics: Once the data is specified the system needed to be instructed to execute operations on the data. This kind of a semantic of any language explains how & when the different structures of a language should generate a program behavior. o Type System: The type system of a programming language explains how a

programming language categorizes values and expressions into types, how it can influence those types & how they cooperate in a program. The aim of this type system is to authenticate & implement a certain level of accuracy in any program written in that language by identifying mistaken operations. - Standard library: A major number of programming languages are related to standard library which is conventionally made accessible by all implementation of the programming language. Core library or standard library is typically inclusive of description of generally used data structure, algorithms, and mechanisms for input & output. Implementation of a programming language: Implementation of a computer programming language offers a way to operate that program on one or more configuration of hardware and software. The programming language implementation has two broad approaches — Compilation & interpretation. To implement any computer programming language by means of any of the said procedures is in general possible. One system for improving the action of interpreted programs is a just-in-time compilation.