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PROJECT

ON

COMPUTER

LANGUAGES

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COMPUTER LANGUAGES

To communicate with the computers, we need some languages. These are computer languages.

A computer language is a system of communication with a computer. Such languages are used to create computer code or program code, the set of instructions forming a computer program which is executed by a computer.

There are two types of computer languages. They are:-

1. Low Level languages
2. High Level languages

Low Level languages

A low level language is a type of programming language that contains basic instructions recognized by a computer. Unlike High - level languages used by software developers, low - level code is often cryptic and not human-readable.

Low-level languages are divided into two groups:-

- 1: Machine languages
- 2: Assembly languages

Machine languages

Machine language, or machine code, is a low-level language comprised of binary digits (ones and zeros). High level languages, such as swift and C++ must be compiled into machine language before the code is run on a computer.

Since computers are digital devices, they only recognize binary data. Every program, video, image, and character of text is represented in binary. This binary data, or machine code, is processed as input by the CPU. The resulting output is sent to the operating system or an application, which displays the data visually.

Assembly Language

An assembly language is a programming language that can be used to directly tell the computer what to do. An assembly language is almost exactly like the machine code that a computer can understand, except that it uses words in place of numbers....

....The part of the computer that follows the instructions is the processor

Assembler

An Assembler is a program that converts assembly language into machine code. It takes the basic commands and operations from assembly code and converts them into binary code that can be recognized by a specific type of processor. Assemblers are similar to compilers in that they produce executable code.

High - Level Language

A high - level language (HLL) is a programming language such as C, FORTRAN^{N,} or Pascal that enables a programmer to write programs that are more or less independent of a particular type of computer. Such languages are considered high-level because they are closer to human languages and further from machine languages.

Third - Generation language

Third- Generation ~~is~~ language is also known as a "3GL"; it refers to a high - level programming language such as FORTRAN, COBOL, BASIC, Pascal and C.

It is a step above assembly language and a step below a fourth - generation language.

Fourth-Generation Language

The fourth-generation languages, or 4GL, are languages that consist of statements similar to statements in a human language. Fourth-generation languages are commonly used in database programming and scripts. Examples include Perl, PHP, Python, Ruby, and SQL.

Language Processors

A language processor is a special type of a computer software that has the capacity of translating the source code or program codes into machine codes. The following are different types of language processors:

- 1: Compiler
- 2: Interpreter

Compiler

A compiler is a language processor which translates source code from high-level language into binary machine code. It reads all instructions and then converts them to machine language. It reports all mistakes/errors in the end and executes a program faster.

Interpreter

Interpreter is a program that executes instructions written in a high-level language. It reads instructions and converts them to machine language line by line. It executes a program slower than a compiler. Any mistake or error in the instruction is reported so that the user can correct it.

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