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HIGH LEVEL LANGUAGES

A **Programming Language** is a vocabulary and set of grammatical rules for instructing a computer to perform a specific task. The computer only understands machine language which is 0's and 1's.

TYPES OF PROGRAMMING LANGUAGE

There are three types of programming language. They are:

1. Machine Language (Low-Level Language)
2. Low-Level Language (Translated by Assembler)
3. High-Level Language (Translated by Compiler and Interpreter)

HIGH LEVEL LANGUAGE: these are computer programming language that are machine independent and designed to reflect the requirement of a problem. They are also called Problem Oriented Language (POL)

MODES OF TRANSLATION OF HIGH-LEVEL LANGUAGE

High-Level Language programs are translated to machine language by:

1. **Compilers:** this translate the whole source program into an executable program.
2. **Interpreter:** this translate and executes source program one line at a time.

CLASSIFICATION OF HIGH LEVEL-LEVEL LANGUAGE

1. By purpose or type of problems: in this category, a HLL is classified either as "general purpose" or "special purpose" .

a **General Purpose** High Level Language is a high level language that is not designed to be used to program any particular application or problem. Some examples are C, Java, BASIC, PASCAL, PL/1.

A special purpose High level language is a High level language that is designed to program specific applications. Examples are Scientific HLL (BASIC, FORTRAN, ALGOL), HTML, PostScript (Cartoons Production), Commercial or business HLL (COBOL), Artificial Intelligence HLL (LISP, PROLOG), Command Languages.

2. By method of translation: When languages are classified by the mode of their translation, you will have interpreted languages and Compiled languages.

An interpreted language is a language that uses an interpreter to translate to machine language. Examples are BASIC, LISP, Java, C# etc.

A Compiled language is a language that uses a compiler to translate to machine language. Examples are FORTRAN, COBOL, C.

ADVANTAGES OF INTERPRETER

- Interpreters are easier to use.
- Detects both semantic and syntactic error quickly since it translates and executes.
- The interpreter requires relatively little storage space since it does not store the object code.

DISADVANTAGE OF INTERPRETER

- The major disadvantage of interpreters is that interpreter programs run relatively slower than compiled programs.

FEATURE OF BASIC, C, PASCAL, COBOL

The following features are supported by these languages:

1. Loops
2. Input from the keyboard
3. Menu driven applications
4. System commands
5. Structured programming
6. Subroutines
7. Built-in functions
8. User defined functions
9. Arrays, sorting and searches

ADVANTAGES OF HIGH-LEVEL LANGUAGE OVER MACHINE LANGUAGE AND LOW-LEVEL LANGUAGE

The advantages of HLL over ML and LLL are:

- i. HLL are not machine dependent.
- ii. HLL are problem oriented
- iii. HLL resembles natural human languages.
- iv. HLL uses mathematical notations.

ANSWER THE FOLLOWING QUESTIONS.

1. List three examples of High-Level Languages
2. Classify the following languages into Compiled and interpreted languages:
BASIC, PASCAL, C, C++, RUBY, COBOL, LISP, SNOBOL.
3. State three features of High-Level Language
4. State two advantages of High-Level Language.