II. Language Evaluation Criteria

- ▶ A set of evaluation criteria helps the programmers to realize the extent of the capabilities of a language and its constructs. This influences computer design and software development greatly.

- ▶ **Readability** – It is defined to be the quality of a language that enables a programmer to understand and comprehend the structure of programs so that they can be easily understood and read.

- ▶ A programming language's readability is affected by its simplicity, orthogonality, control statement design and syntax.

Language Evaluation Criteria

- **Writability** – It is a measure of how easily and conveniently a language can be used to create codes or programs for a particular problem.

- A programming language's writability is affected by its simplicity, orthogonality, and abstraction.

- Abstraction refers to the ability to define and then use operations on complicated structures in ways allowing many of the details to be ignored.

Language Evaluation Criteria

- **Reliability** – It refers to the ability of a program to perform to its specifications under all-possible conditions or circumstances.
- All programming language's reliability is affected by type checking, exception handling, aliasing, and its readability and writability.
- *Type checking* refers to testing for type compatibility between two things. The checking can be done during compile time or run time.
- *Exception handling* is the ability of a program to detect beforehand errors during run time along with odd results and unusual conditions, to use corrective measures and to continue and complete execution.
- *Aliasing* is defined as allowing two distinct names or referencing methods to point to the same memory cell.

Language Evaluation Criteria

▶ **Cost** – The total cost of a programming language is a combination of many of its features and characteristics. Of all those which contribute to language costs, program development and maintenance are the most important considerations and since these are functions of readability and writability, they are in turn the most important of the four evaluation criteria.

  ▶ The following are the characteristics of cost:

    ▶ Programmer training
    ▶ Software creation
    ▶ Compilation
    ▶ Execution
    ▶ Compiler Cost
    ▶ Poor reliability
    ▶ Maintenance