Language Evaluation Criteria:

Some of the language criterias to evaluate a programming language are:

1. Readability
2. Writability
3. Reliability
4. Cost
5. Generality
6. Extensibility
7. Standardability
8. Support for internationalization

1. **Readability:** Coding should be simple and clear to understand.
    1. Simplicity: Should not involve complex syntax, many ways to perform a single task,overloading of methods and operator etc.
    2. Orthogonality: This means relatively small set of primitive constructs can be combine.
        - For ex., int *count; Here pointer and integer is combined.
        - Another ex., int count[5]; Here array and pointer is combine.
    3. Control Statements: There should be adequate control statements.
        - Use of for loop, while loop, do while loop is adequate.
        - Using of go to statements causes poor readability.
    4. Data Types and Structures: Language should involve adequate facilities for defining data types and data structure.
        - For ex., timeout = 1; is unclear as compare to timeout = true;.
    5. Syntax Design: Syntax design affects the readability in the following way.
        1. *Identifier forms:* Restriction to very short length of identifier is a barrier to readability.
        2. *Special words:* Special words like while, for, class, int affects the

readability of any language. If special words are allowed to be variable names than it will become confusing.

2. **Writability:** Writability is a measure of how easily language can be used to code.Most of the language characteristics that affect readability also affect writability.
    1. Simplicity: Should not involve complex syntax, many ways to perform a single task,overloading of methods and operator etc.
    2. Orthogonality: This means relatively small set of primitive constructs can be combine.
        - For ex., int *count; Here pointer and integer is combined.
        - Another ex., int count[5]; Here array and pointer is combine.
    3. Support for Abstraction: Language should support process and data abstraction.
    4. Expressivity: In less lines of code program should be writable.
        - For ex., for statements makes counting loops easier than while.
        - Another ex., is i++ is more expressive than i=i+1.
3. **Reliability:** A program is said to be reliable if it performs to irs specifications under all conditions.
    1. Type Checking: It is testing for type error, either at compile or run time.
        - For ex., float percentage; is more desirable as compare to int percentage.
    2. Exception Handling: It is the ability of program to handle run time error. Remember, handling runtime error are more expensive than compile errors.
    3. Aliasing: It is same memory location (variable) having more than one name. Which is causes confusion.
    4. Readability: Readability influences reliability.
    5. Writability: Writability also influence reliability.
4. **Cost:** Total cost of programming should be minimum.
    - For ex., cost of trainer.
    - Cost of writing algorithm.

- Cost of compiling program in the language.
- Cost of hardware required for program.
- Cost of maintenance.

5. **Generality:** Language should not be limited to specific application only.
6. Extensibility: Should be flexible, must be able to add new constructs.
7. **Standardability:** Language should be platform independent.
8. Support for Internationalisation: Various formats like time, date, currency etc should be supportable.

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