

Tugas Pertemuan 2

1. Bentuk kelompok yang terdiri dari 3 orang. Setiap kelompok memilih paradigma pemrograman tertentu !
2. Untuk setiap paradigma, jelaskan berapa hal berikut.
 - a) Karakteristik dan teknik khusus yang menjadi ciri khas paradigma
 - b) Bahasa pemrograman yang mendukung paradigma dan karakteristiknya
 - c) Kasus yang memerlukan paradigma tersebut **dan contohnya.**
 - d) Kelebihan dan kekurangan
3. Lakukan evaluasi terhadap salah satu bahasa pemrograman dari paradigma tersebut berdasarkan kriteria *readability*, *writability*, *reliability*, dan *cost*.

Readability

- Overall simplicity
 - A manageable set of features and constructs
 - Few feature multiplicity (means of doing the same operation)
 - Minimal operator overloading
- Orthogonality
 - A relatively small set of primitive constructs can be combined in a relatively
 - small number of ways
 - Every possible combination is legal
- Control statements
 - The presence of well-known control structures (e.g., while statement)
- Data types and structures
 - The presence of adequate facilities for defining data structures
- Syntax considerations
 - Identifier forms: flexible composition
 - Special words and methods of forming compound statements
 - Form and meaning: self-descriptive constructs, meaningful keywords

Writability

- Simplicity and Orthogonality
 - Few constructs, a small number of primitives, a small set of rules for combining them
- Support for abstraction
 - The ability to define and use complex structures or operations in ways that allow details to be ignored
- Expressivity
 - A set of relatively convenient ways of specifying operations
 - Example: the inclusion of for statement in many modern languages

Realiability

- Type checking
 - Testing for type errors
- Exception handling
 - Intercept run-time errors and take corrective measures
- Aliasing
 - Presence of two or more distinct referencing methods for the same memory location
- Readability and writability
 - A language that does not support “natural” ways of expressing an algorithm will necessarily use “unnatural” approaches, and hence reduced reliability

Cost

- Training programmers to use language
- Writing programs (closeness to particular applications)
- Compiling programs
- Executing programs

Others

- Portability
 - The ease with which programs can be moved from one implementation to another
- Generality
 - The applicability to a wide range of applications
 - Well-definedness
 - The completeness and precision of the language's official definition