

| <u>Structural Languages</u> | <u>Functional Languages</u> |
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| →) They are based on Von-Neumann Architecture | 1) They are not based on Von-Neumann Architecture. |
| 2) The programmer is concerned with management of variables and assignment of values to them. | 2) The programmer need not be concerned with variables, because memory cells need not be abstracted into the language. |
| 3) They facilitate the computation by means of state change. | 3) They facilitate the functions that program represents, rather than just to state changes as the program executes, statement by statement. |
| 4) Increased efficiency of execution. | 4) Decreased efficiency of execution. |
| 5) Laborious construction of programs. | 5) Less labour required than programming in an Structural Languages. |
| 6) Very simple syntactic structure. | 6) Much more complex syntactic structure. |
| 7) Concurrent execution is difficult to design & use. | 7) Concurrent execution is easy to design and use. |
| 8) The Semantics are difficult to understand. | 8) Semantics are simple as compared with SL. |
| 9) The programmer must make a static division of Program into its concurrent | 9) Programs in FL can be divided into concurrent parts dynamically by Teacher's Signature : _____ |

Parts, which are then written as tasks. This can be a complicated process.

10) Eg \Rightarrow C, Ada, Pascal etc.

the execution system, making the process highly adaptable to hardware on which it is running.

10) Eg \Rightarrow LISP, ML etc.

C Language

- 1) 'C' is procedural language.
- 2) Emphasis is on doing things (algorithms).
- 3) Large programs are divided into smaller programs known as functions.
- 4) Employs Top-Down approach in program design.
- 5) 'C' is function-oriented.
- 6) Not Extensible.
- 7) Mapping b/w data & function is difficult & complicated.

C++ Language

- 1) 'C++' is an object-oriented language.
- 2) Emphasis is on data rather than procedure.
- 3) Programs are divided into what are known as objects.
- 4) Employs/Follows Bottom-UP approach in program design.
- 5) 'C++' is Data-oriented.
- 6) Extensible.
- 7) Mapping b/w data & function can be used using 'Object' & is simpler.