L4

Pseudocodes

- 1940 - 50 known pseudocodes
    - Better than assembly
- 1949- Short code
    - Interpreted
    - called Automatic programming
    - no floats
- 1954 - Speed coding
    - interpreted
    - Easier than Machine language
- 1951- 53 UNIVAC arithmetic lang?
    - COmpile time - converted lang to machine code
- 1950-54 Fortran
    - first compiled High Level programming language
        - Speed of code was advantage
    - IBM 704 computers

date	version
1954	FORTRAN-0
1957	FORTRAN-1
58	○ f-2 ○ independent compilation of subroutines, not total recompile
60-62	f-4 (ansi 66)
77	FORTRAN-77 subroutine to subroutine passing
90	Fortran (note the lowercase change in name)-90 recursive calls
95	f-95 forall iterative
2003	f-2003 object oriented
2008	f-2008 coarray ,concurrent exec

    - prevalent for 40-50 years

    - compiled, high level
    - imperative language
    - declarative language: tell what should be done, not how to do it (SQL for example)

LISt Processing - LISP

- Functional programming languages

- 1950 - Based on applying functions to arguments

    - Need - Some methods to allow computers to process symbolic data in linked lists
    - at that time, most computations were on data in Arrays
    - required by rule based problem solving domains like in AI

- scheme lisp

- common lisp - amalgamation of all lisp flavors - became complex

ALGOL 58 - ALGOrithmic Language

- Descendant of fortran
    - did not become popular - as IBM wanted to use ALGOL

ALGOL 60

- Backus-Naur Form
    - Didn't achieve popularity in the US
    - Even in Europe, although more popular in US, and MUCH more popular than ALGOL 58, not popular - too flexible
        - people couldn't understand
    - Input Output wasn't included in Lang spec
        - Different implementations provided differently
        - so less portability
    - IBM didn't support

- A programming language
    - Abstract Syntax Tree to parse
    - you use a grammar to describe the language

COmmon Business-Oriented Language COBOL (1960)

- Progenitor was FLOW-MATIC (early 1950)
- Problem was that computers were used by the scientific community only
    - not much focus in business areas

- Philosophy: Data processing programs must use English like words rather than mathematical expressions