

2. What two common data structures were included in Plankalkül?

- Array and Record

5. Why was the slowness of interpretation of programs acceptable in the early 1950s?

- The lack of floating-point hardware in the available computers

6. What hardware capability that first appeared in the IBM 704 computer strongly affected the evolution of programming languages? Explain why.

- Its capabilities prompted the development of Fortran because it was able to support floating-point operations hardware.

7. In what year was the Fortran design project begun?

- May 1954

8. What was the primary application area of computers at the time Fortran was designed?

- Mathematics

9. What was the source of all of the control flow statements of Fortran I?

- 704 Instructions

10. What was the most significant feature added to Fortran I to get Fortran II?

- Independent compilation of subroutines

11. What control flow statements were added to Fortran IV to get Fortran 77?

- If with an optional Else clause

14. Why were linguists interested in artificial intelligence in the late 1950s?

- Concerned with natural language processing

15. Where was LISP developed? By whom?

- MIT by John McCarthy

20. What missing language element of ALGOL 60 damaged its chances for widespread use?

- Lack of input/output statements and depend too much on machine.

21. What language was designed to describe the syntax of ALGOL 60?

- Backus-Naur Form

22. On what language was COBOL based?

- FLOW-MATIC

23. In what year did the COBOL design process begin?

- 1959

24. What data structure that appeared in COBOL originated with Plankalkül?

- Hierarchical data structures (records)

25. What organization was most responsible for the early success of COBOL (in terms of extent of use)?

- Department of Defense

36. What is a nonprocedural language?

- Non-procedural language is concerned with the WHAT not the HOW., Non-proc languages are those languages where you specify what conditions the answer should satisfy, but not how to obtain it.

37. What are the two kinds of statements that populate a Prolog database?

- Facts and Rules

46. What is the primary application for Objective-C?

- Objective-C is the language of all iPhone software because it consisted of C plus the classes and message passing of Smalltalk, and is the only one to use Smalltalk syntax.

51. How does the typing system of PHP and JavaScript differ from that of Java?

- JavaScript and PHP have dynamic typing (and dynamic strings and arrays) whereas Java has static

52. What array structure is included in C# but not in C, C++, or Java?

- Rectangular arrays

57. What data structure does Python use in place of arrays?

- Lists. Python also has immutable lists (tuples), and hashes (dictionaries)

59. What characteristic of Ruby's arithmetic operators makes them unique among those of other languages?

- The operators in Ruby are syntactic mechanisms to specify method calls for the corresponding operations

60. What data structures are built into Lua?

- Lua has a single built-in data structure called the table. Tables in Lua are extremely flexible and can be used to represent arrays, dictionaries (key-value pairs), sets, and even objects.