A Brief History

Programming Language:

Programming Language is a notation for describing Algorithm and data.

Program:

A Sentence of a programming language

Let's start from year "1954"

FORTRAN (FORMula TRANslator)

- Created in 1954 by John Backus
- First high-level language
- Using the first compiler ever developed
- Refers to as Scientific Language
- Machine independent.
• **FORTRAN II**
  → In 1958 introduces Subroutines, Functions, Loops and a primitive For Loop

• **IAL (International Algebraic Logic)**
  → It started as a project later renamed ALGOL 58
  → The theoretical definition of the language is published
  → No Compiler

• **LISP (List Processing)**
  → Created in 1958 and released in 1960 by John McCarthy of MIT.
  → LISP was intended for writing Artificial intelligence programs.
    • **Features**
      • Atoms and Lists data structure
      • Functional programming style - all component's computation is performed by applying functions to arguments. Variable declarations are rarely used.
      • A Reliance on Recursion - a strong reliance on recursion has allowed LISP to be successful in many areas, including Artificial Intelligence.
• Garbage Collection: Lisp has built-in garbage collection, so programmers do not need to explicitly free dynamically allocated memory.

• COBOL (Common Business Oriented Language)
  → Created in May 1959 by the Short Range Committee of the U.S. Department of (DoD).
  → The CODASYL (Conference on Data Systems Languages) worked from May 1959 to April 1960.
  → Object Oriented Version of COBOL is introduced in 1997 i.e. COBOL-97
  → Introduced the RECORD data structure.

• ALGOL (ALGOrithmic Language)
  → Released in 1960, major releases in 1960 and 1968.
  → It is first Block-Structured Language.

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Considered to be the first **Second generation Computer Language**

- **Machine Independent**

- **It introduced Concept like**

- **Block Structure Code**
  (masked by **BEGIN** and **END**)

- **Scope of Variables**
  (Scope of local variables inside blocks)

- **BNF (Backus Naum Form)**
  Notation for defining Syntax

- **dynamic Arrays**

- **Reserved words**

- **IF, THEN, ELSE, FOR, WHILE loops**
  - the := Symbol for assignment
  - **Switch** with **GOTO**
  - Users defined data Type.

**SNOBOL (Strong Oriented Symbolic Language)**

- Created in 1962

- Intended for "Strings"

- First language to use Associative Arrays, indexed by any type of key.

- Had feature of **Pattern-matching, Concatenation**.
and alternation.

→ It allowed running code stored in strings.
→ Data Types: integers, real, array, pattern, and user-defined types.

• **BASIC** (Beginner's All-purpose Symbolic Instruction Code)

→ Designed as a teaching language in 1963 by John George Kemeny and Thomas Eugene Kurtz of Dartmouth College.
→ Intended to make it easy to learn programming.

**PL/I (Programming Language One)**

→ Created in 1964
→ Intended to combine the features of **FORTRAN** with **COBOL**. Plus additional facilities for systems programming.
→ Also borrows from **ALGOL 60**.
→ Originally called **NPL** (New programming language).
→ Introduces storage classes (**automatic**, **static**, **controlled**, and **based**), exception processing (**on condition**), **select when otherwise** conditional structure and several

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Variation of DO Loop.

- Numerous data types.

- **Pascal** (Named for French religious fanatic and mathematician Blaise Pascal)
  
  - Created in 1970
  - Intended to replace BASIC for teaching language
  - Quickly developed as a general-purpose language.
  - Programs compiled to a platform-independent intermediate P-code.
  
  - Compiles for Pascal was written in Pascal.

- **C Language**
  
  - Developed from 1969-1972 by Dennis Ritchie
  - Used in system programming for UNIX

- **ANSI C** The American National Standards Institute (ANSI) formed a technical subcommittee, X3J11, to create a standard for the C language and its runtime libraries.
• Ada
  → Released in 1983 (ADA 83), with major releases in 1995 (ADA 95) and 2005 (ADA 2005)
  → Created by U.S. Department of Defense (DoD)
  → Intended for embedded systems and later intended for all military computing purposes.

• Perl (Practical Extracting and Report Language)
  → Created by Larry Wall in 1987
  → Intended to replace the Unix Shell, Sed, Awk.

Python:
  → Created in 1991 by Guido van Rossum.
  → A scripting language with dynamic type, intended to replace Perl.