
Title :: History of

PROGRAMMING

Programme :: Bachelors in Computer System

Professional Bachelor

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What is programming language

A programming language is a set of rules, instructions, and syntax used to write code that tells a computer what to do. It acts as a bridge between humans and machines, websites, apps, and other technology by translating human ideas into a format the computer can understand and execute.

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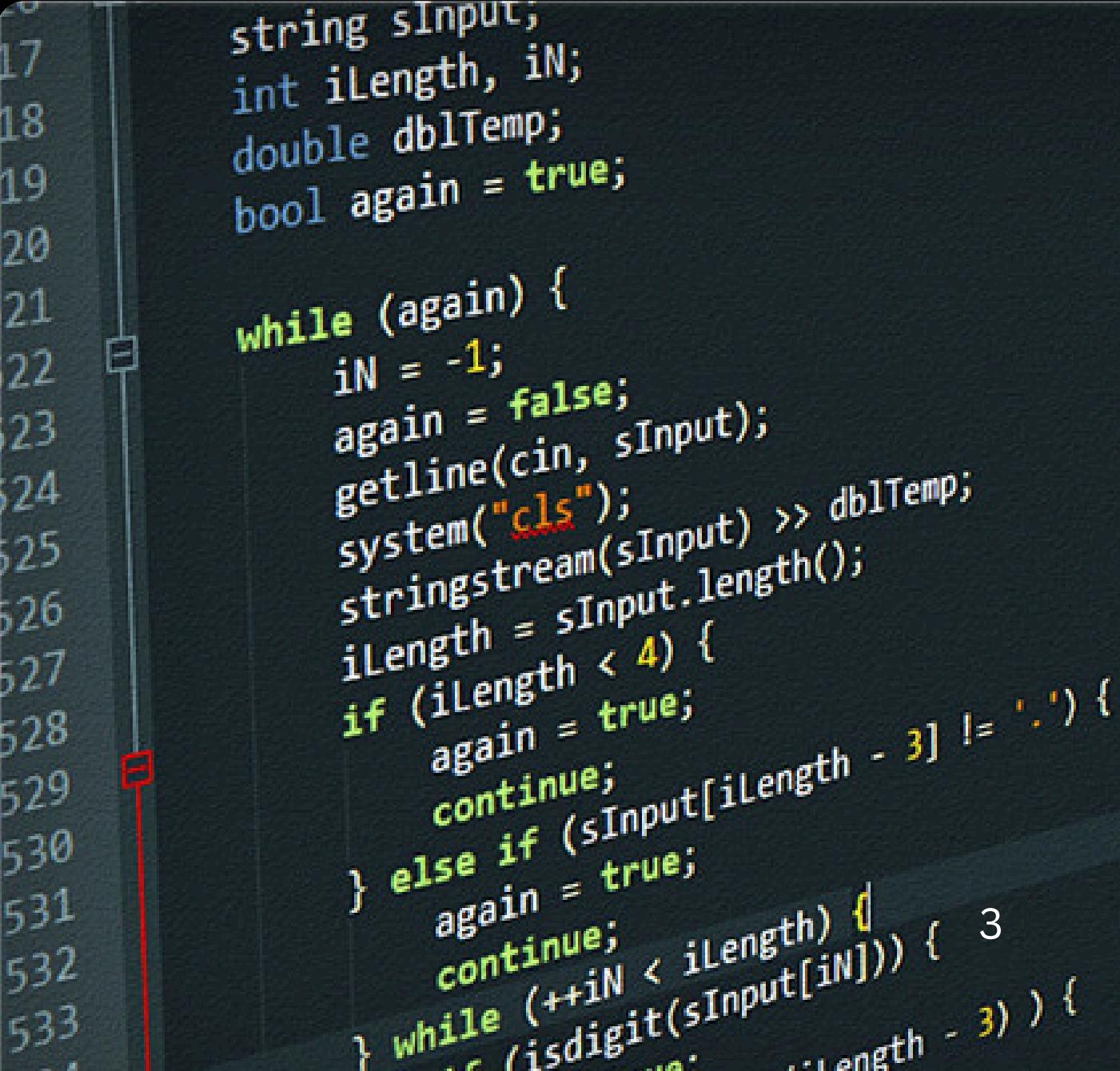
Function:

A programming language provides a specific vocabulary and grammatical rules for instructing a computer

History

FIRST GENERATION: Low-Level Languages (1940s–1950s)

- *The Dawn of Programming: Directly interacting with hardware.*
- *1st Generation: Machine Code (Binary: 1s and 0s).*
- *Challenge: Extremely error-prone and tedious.*
 -
- **2ND GENERATION: ASSEMBLY LANGUAGE (E.G., EDSAC ASSEMBLY, 1949).**
- *Improvement: Uses mnemonics (like ADD, MOV) instead of just numbers, making it easier for humans.*
- *Mechanism: Requires an Assembler to translate to machine code.*
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A screenshot of a terminal window displaying assembly language code for the EDSAC computer. The code is numbered from 17 to 533. It includes declarations for variables (string sInput, int iLength, int iN, double dblTemp), a boolean again, and a while loop that reads input from cin, checks its length, and processes digits. The code uses mnemonics like ADD, SUB, and JZ, along with assembly-specific instructions like LDI and STO.

```
17 string sInput;
18 int iLength, iN;
19 double dblTemp;
20 bool again = true;
21
22 while (again) {
23     iN = -1;
24     again = false;
25     getline(cin, sInput);
26     system("cls");
27     stringstream(sInput) >> dblTemp;
28     stringstream(sInput) >> iLength;
29     if (iLength < 4) {
30         again = true;
31         continue;
32     } else if (sInput[iLength - 3] != '.') {
33         again = true;
34         continue;
35     } while (++iN < iLength) {
36         if (isdigit(sInput[iN])) {
37             ...
38         }
39     }
40 }
```

The High-Level Revolution (Late 1950s–1970s) 📈

The Rise of 3rd Generation Languages (3GLs): Closer to human (English) language and portable across different machines.

- Key Languages & Purpose:
- FORTRAN (1957): The first widely successful high-level language, designed for mathematical computation.
- LISP (1958): One of the oldest, designed for symbolic computation and AI research; introduced functional programming.
- COBOL (1959): Designed for business, finance, and administrative systems; emphasized readability.
- BASIC (1964): Created to make programming accessible to non-experts

Structured & Object-Oriented Programming (1960s–1980s) 🧱

- ALGOL (1960): Highly influential; promoted a clear, structured format.
- Pascal (1970): Designed as a teaching language to enforce structured Concep
 - The Foundational Language:
- C (1972): Developed by Dennis Ritchie; a powerful, low-level high-level language that became the foundation for operating systems (like Unix) and many later languages.
- C++ (1983): Extension of C that added OOP features ("C with Classes"); heavily used for system development and applications.

The Internet and Modern Eras (1990s–Present)



- New Paradigms & Web Development: Focus on ease of use, dynamic content, and large-scale applications.
- Python (1991): Emphasizes readability and simplicity; popular for data science, AI, and scripting.
- Java (1995): Designed for portability ("Write once, run anywhere"); dominated enterprise software and Android development.
- JavaScript (1995): The essential language for web browsers, enabling dynamic and interactive web pages.
- C# (2000): Microsoft's object-oriented language for the .NET framework.
- Emerging Trends:

- Functional Languages (e.g., Haskell, Scala, Clojure).
- Systems Languages emphasizing safety (e.g., Rust).
- Languages for Mobile Development (e.g., Swift)

Conclusion & Future

Outlook

- Recap: Programming languages have evolved from binary commands to highly abstract tools, each new language addressing the limitations of the last.
- Key Takeaway: The "best" language depends on the task (e.g., Python for data, Java for enterprise, JavaScript for the web).

The video, Most Popular Programming Languages - Rise & Fall (1960-2025), is relevant because it visually charts the changing popularity of programming languages throughout history, which helps illustrate the major eras discussed in this presentation

THANK YOU