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WHAT WOULD WE LEARN TODAY?

- Why Study programming languages?
- What are the benefits of computer programming?
- Why is programming important for students?
- What is a Computer language?
- Generations of programming languages.

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WHY STUDY PROGRAMMING LANGUAGES?

- Computer programming is the lifeblood of modern life. Imagine for a moment what would happen if all computers suddenly disappeared tomorrow. No internet. No data. No connection. No convenience.
- Computer programming is a fundamental skill for so many different applications, not just software development or cutting-edge research into artificial intelligence. It makes banking more accessible, smooths out supply lines, and creates those fantastic online experiences we love. Programming means your favorite jeans are one click away, and governments can open services faster and more efficiently during a crisis.

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WHAT ARE THE BENEFITS OF COMPUTER PROGRAMMING?

- Learning computer programming ensures that students have access to the creative, fast-paced world that relies on machine connections. Students can apply these skills to so many different industries and disciplines. Students that want a creative job can research into 3D animation, web design, or even design. Students with a drive for research can join AI initiatives and build research pipelines for scientists.
- So much of the world is now automated. Students entering a job field will find computer programming skills necessary to maintain and troubleshoot these automation tools. They'll be in a much better position to contribute to company collaborations and maximize the benefit of technology investments.

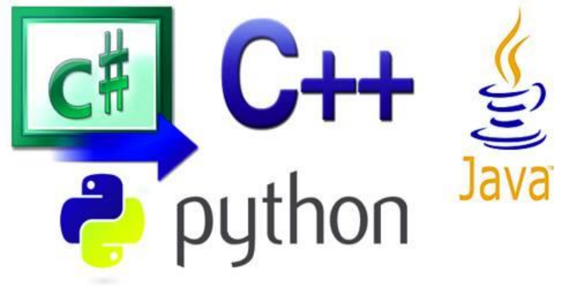
WHY IS PROGRAMMING IMPORTANT FOR STUDENTS?

- Employers are beginning to ask for other departmental positions to take responsibility for programming. Companies also realize the value of finding an expert in a specific discipline—web design, for example, or artificial intelligence engineering—instead of a general computer programming position. In addition, increased automation could make programming by hand less common. However, employees still need knowledge to build and troubleshoot these tools.

WHAT IS A COMPUTER LANGUAGE?

- To communicate with the computers, we need some languages. These are computer languages. There are mainly three different languages with the help of which we can develop computer programs. And they are –

  - Machine Level language
  - Low Level Language
  - Hgh Level Language



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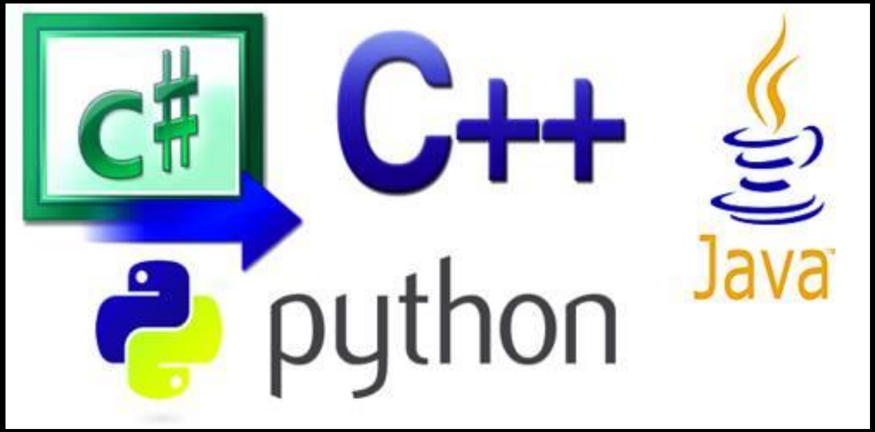
MACHINE LEVEL LANGUAGE

- Computer can understand only the language of Digital Electronics. Digital Electronics deals with presence and absence of voltages. Within the computer there are two logics can play their role. These logics are –
- **Positive Logic –** Here presence of voltage will be denoted by 1 and absence of voltage will be denoted by 0
- **Negative Logic –** Here presence of voltage will be denoted by 0 and absence of voltage will be denoted by 1

LOW LEVEL LANGUAGE

Low level language uses symbolic instructions in place of a sequence of 0s and 1s. As example, we can consider that, to add register A and B in a particular computer, assembly language uses the ‘ADD B’ in place of 10001111. In assembly language, we use symbolic names to denote addresses and data. Thus writing a program in assembly language has advantages over writing the same in a machine language.

HIGH LEVEL LANGUAGES



High-level languages are like English-like language, with less words also known as keywords. Each high level language will have its own syntax and keywords. The meaning of the word syntax is grammar.

Examples: C++, Java, Python etc.

GENERATIONS OF PROGRAMMING LANGUAGES

- First Generation Languages (Machine Languages)
- Second Generation Languages (Low-level language ➔ Assembly Languages)

  Example: assembly languages
- Third Generation Languages (High level languages)

  Example: C, C++, Java, Python, PHP, Perl, C#, BASIC, Pascal, Fortran, ALGOL, COBOL
- Fourth Generation Languages (High level languages ➔ reduce effort and time to develop program)

  Examples: ABAP, Unix Shell, SQL, PL/SQL, Oracle Reports, R
- Fifth Generation Languages (High level languages ➔ prolog programming language)

  Examples: Prolog, OPS5, Mercury
- Sixth Generation Languages (High level languages ➔ prolog programming language)

  Examples: Bubble.io

THANK YOU

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