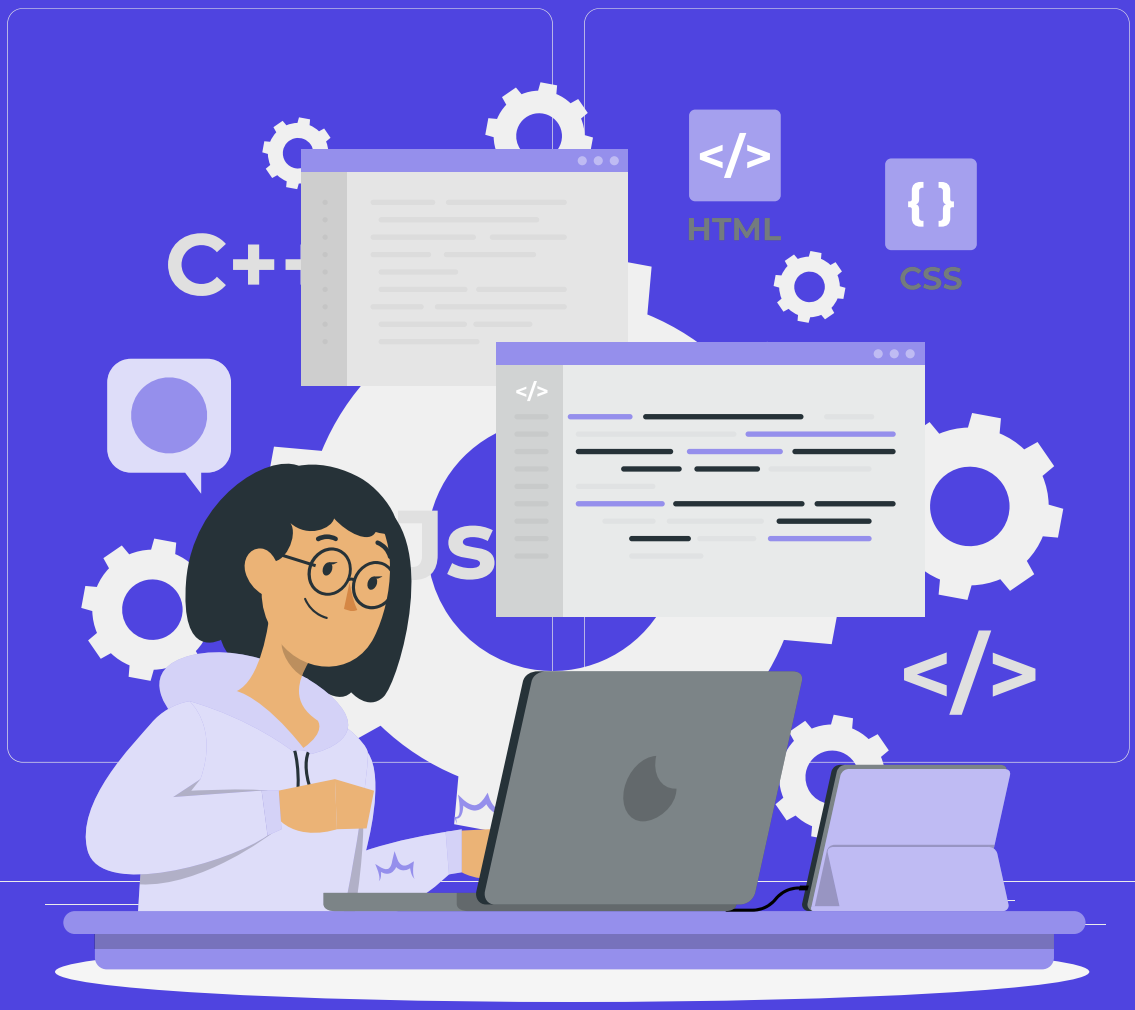
Getting started with programming Pre-read



Relevel
by Unacademy

Has it been an awesome week or what? We have learnt the whims and fancies of software engineering, basics of Database, what a backend engineer does and how to configure VS Code.

In this lesson we will learn the concept that powers it all i.e. Programming.

What is Programming?

Programming is the set of instructions that we give to our computers to carry out a certain task.

We know that computers don't understand English, they only understand binary i.e. 0 & 1, but humans cannot speak binary, we speak languages that contain many words, vowels, phrases and letters.

To make computers understand our instructions, we take the help of compilers(programs responsible for translating human language to machine code).

So programming essentially is the act of laying out a set of commands that is given to the computer which is translated to machine code and then the task is carried out by the computer.

Why is programming important?

Not everything can be done manually by human beings, certain tasks require automation, and there are computations that the human mind cannot always accurately state.

Thus to reduce manual work, improve efficiency and automate labor, programming was introduced as a means to solve the problem.

Programming can be done using a variety of computer programming languages, such as JavaScript, Python, and C++.

Types of Programming:

There are primarily four types of programming:

- Procedural
  - A procedural language is a computer programming language that executes a sequence of commands in a specific order.
  - BASIC, C, FORTRAN, Java, and Pascal are examples of computer procedural languages.
- Object Oriented
  - Object-oriented programming is a programming paradigm based on the concept of objects, which contain data as well as code to manipulate it.
  - Object-oriented programming imitates many of the characteristics of real-world objects.
  - Java, C++, and Ruby are some of the most extensively used object-oriented programming languages.
- Functional
  - Functional programming languages were created specifically for symbolic computing and list processing. Mathematical functions are the foundation of functional programming. The following are some of the most widely used functional programming languages: Lisp, Python, Erlang, Haskell, and Clojure are examples of programming languages.
- Declarative
  - A high-level specification can be considered as a declarative program. Declarative programs are reportedly easier to write, debug, and maintain since they are shorter.