


What is a programming language?

#Generation-I



computer/
machine

1. cpu

2. motherboard

3. harddisk

4. ram

CPU “Central processing unit” is core / brain of the computer, that performs arithmetic, logical and relational operations within the computer

CPU can only understand anything that is expressed or represented in terms “1” & “0” which is called binary language or machine-level language.

To ask computer to perform any operations:
we need to write instructions in cpu instruction-set (binary instruction-set)

drawbacks:

1. hard to write and difficult to memorize, because humans are not great about memorizing the numbers

2. not portable across the cpu vendors

#Generation - II

assembly-level
lang

processor hdd
motherboard ram

computer/
machine

To overcome the problems in working with machine-level language, the cpu vendors have come up with assembly-level language. This language comprises of small english like instructions/words which are called “mnemonics” using which we need to write instructions asking the cpu to perform the operations

To ask the processor to perform the operation:
We write assembly level language instructions (using mnemonics), pass it as an input to assembly-level lang translator, that translates the instructions into cpu understandable instruction-set and passes to the underlying cpu asking to perform operations.

advantage:-

1. easy to write the programs using mnemonics which are english lang instructions, easy to memorize and quick to learn

dis-advantage:-

1. mnemonics are not human friendly, its quite difficult to use them in writing instructions

2. the programs written using assembly level lang instruction-set is not portable across the cpu vendors. For each cpu model/manufacture or make the assembly-level instruction-set will differ

Generation-III

