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Define  (or describe) the following:

Program:  A program is a set of instructions that a computer follows to perform a task

Software: Programs are commonly referred to as Software

Software Developer: A person with the training and skills necessary to design, create, and test computer programs.

Hardware: All of the physical devices, or components, that a com- puter is made of.

CPU: (Central Processing Unit) the part of a computer that actually runs program.

Running a Program or Executing a Program: When a computer is performing the tasks that a program tells it to do

Main Memory or RAM or RANDOM ACCESS Memory: This is where the computer stores a program while the program is running, as well as the data that the pro- gram is working with.

Volatile: Used only for temporary storage while a program is running.

Temporary storage:

Secondary Storage: A type of memory that can hold data for long periods of time, even when there is no power to the computer.

Input Device: Input is any data the computer collects from people and from other devices. The component that collects the data and sends it to the computer is called a

Output Device: A device designed to format and present any data the computer produces

Byte: A computer's memory is divided into tiny storage locations known as byte.

Bit: Each byte is divided into eight smaller storage locations known as bits. The term bit stands for binary digit. Computer scientists usually think of bits as tiny switches that can be either on or off. Bits aren't actual "switches," however, at least not in the con- ventional sense. In most computer systems, bits are tiny electrical components that can hold either a positive or a negative charge. Computer scientists think of a posi- tive charge as a switch in the on position, and a negative charge as a switch in the off position

IDE: Integrated Development Environment is a software application that provides comprehensive facilities to computer programmers for software development. An IDE normally consists of a source code editor, build automation tools and a debugger. Most modern IDEs offer Intelligent code completion features.

Compile: To compile is to convert the program language into binary language or machine language so that the computer can process it.

Interpret: To convert from programing language to machine language. The translation.

High Level programming language: allows you to create powerful and complex programs without knowing how the CPU works, and without writing large numbers of low-level instructions. In addition, most high-level languages use words that are easy to understand.

Machine Language: A binary language the computer understands telling it what to do in 1's and zeros.

Source Code: Actual Code, any collection of computer instructions (possibly with comments) written using some human-readable computer language, usually as text. The source code of a program is specially designed to facilitate the work of computer programmers, who specify the actions to be performed by a computer mostly by writing source code.

Key words/reserved words: The words that make up a high-level programming language. Ie "Print"

Statements: The individual instructions that you use to write a program in a high-level programming language

Syntax: a set of rules that must be strictly followed when writing a program. The syntax rules dictate how key words, operators, and various punctuation characters must be used in a program.

Syntax error: An error in the operating instructions that causes a program not to be able to run.

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Text editor vs IDE

Mnemonics: Instead of using binary numbers for instructions, assembly language uses short words that are known as mnemonics. For example, in assembly language, the mnemonic add typically means to add numbers, mul typically means to multiply numbers, and mov typically means to move a value to a location in memory. When a programmer uses assembly language to write a program, he or she can write short mnemonics instead of binary numbers.

ASCII: American Standard Code for Information Interchange. ASCII is a set of 128 numeric codes that represent the English letters, various punctuation marks, and other characters.

Character: Letters and punctuation marks.

Integer: numbers.

Real number: Non zero or negative number.

Two's complement: Used to store real numbers.

Floating Point notation- Used to encode real numbers.

Binary Numbering system- A system of zeros and ones that the computer understands.

Fetch – Decode- Execute: A pattern the CPU does when executing a program.

> 1. Fetch A program is a long sequence of machine language instructions. The first step of the cycle is to fetch, or read, the next instruction from memory into the CPU.

> 2. Decode A machine language instruction is a binary number that represents a command that tells the CPU to perform an operation. In this step the CPU decodes the instruction that was just fetched from memory, to determine which operation it should perform.

> 3. Execute The last step in the cycle is to execute, or perform, the operation.

0's – The off switch to the computer

1's- The on switch for the computer.


Convert   to decimal    0 0 0 1 0 0 1 1

1+2+16=19


Convert to binary      13

00001101