PROGRAMMING BASICS

Languages for the computer

Programming languages are the languages in which a programmer writes the instructions that the computer will ultimately execute. The earliest programming languages were *assembly languages*, not far removed from the binary-encoded instructions directly executed by the machine hardware. Users soon began inventing more convenient languages (beginning in the mid-1950s). One early language, FORTRAN (Formula Translation), was originally much like assembly language, although it allowed programmers to write algebraic expressions instead of coded instructions for arithmetic operations. The trend since then has been toward developing increasingly abstract languages, allowing the programmer to think and communicate with the machine at a level ever more remote from machine code.
Computer programs written in any language other than machine language must be either interpreted or compiled. An *interpreter* is software that examines a user program one instruction at a time and calls on code to execute the operations required by that instruction. This can be a rather slow process. A *compiler* is software that translates a user program as a whole into machine code that is saved for subsequent execution whenever desired. When a new language is developed, it is usually interpreted at first. If the language becomes popular, it becomes important to write compilers for it, although this task may present considerable difficulties.

1. Write questions for the following answers.

1 .....

They are the languages in which a programmer writes the instructions for a computer.

2 .....

They were assembly languages.

3 .....

It allowed programmers to write algebraic expressions instead of coded instructions for arithmetic operations.

4 .....

It is software that examines a user program one instruction at a time and calls on code to execute the operations required by that instruction.

5 .....

It is software that translates a user program as a whole into machine code that is saved for subsequent execution whenever desired.

2. Find words or expressions in the text which have the same meaning as the following ones.

1 orders .....

2 people who employ a computer for a purpose .....

3 in place of .....

4 tendency .....

5 series of operations deliberately undertaken .....

3. Write a summary of four lines of the above passage.

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