

Chapter 1: Computing Concept

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What is programming

- * what is computer?
- * e.g. what is the difference of a microwave timer and computer?
- * a process to write (design) a set of instructions to control computer to do a specific task.
- * the collection of all instructions and their syntax of one kind is called (computer/artificial) language.
- * there are many kind of languages: C, C++, Java, Perl, Basic...

What is instruction?

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- * an instruction is composed of two parts: action and object.
- * e.g. go home, buy food...
- * the different action part can combine with different object part.
- * in computer terms, there are functions/operator and parameter/variable.
- * a program is a sequence of instructions in logical and struction order
- * e.g. Write a program to buy a can of coke from a selling machine. The possible action is "insert", "take", "push". The possible object is "can of coke", "coins", "button". How about if the lights of buttons are out of order? Additional action: "when", "exist", "not exist". How about if you have no money?

Process of program generation

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- * There are many kinds of computer languages.
- * For one kind of computer, how can it understand all kinds of languages? Or a new language?
- * The "computer language" should be called "high level language"
- * The basic language of a kind of computer understand is called "assembly language".
- * The process to translate from high level language to assembly language is called compilation and linking by compiler and linker.

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                other object file  ->
source file(.c)->|compiler|->object file(.o)->|linker|->executable
header file(.h)->                library file (lib) ->
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- * The group of all source files and resources file for a executable (program) is called project.