Introduction to Programming Using C

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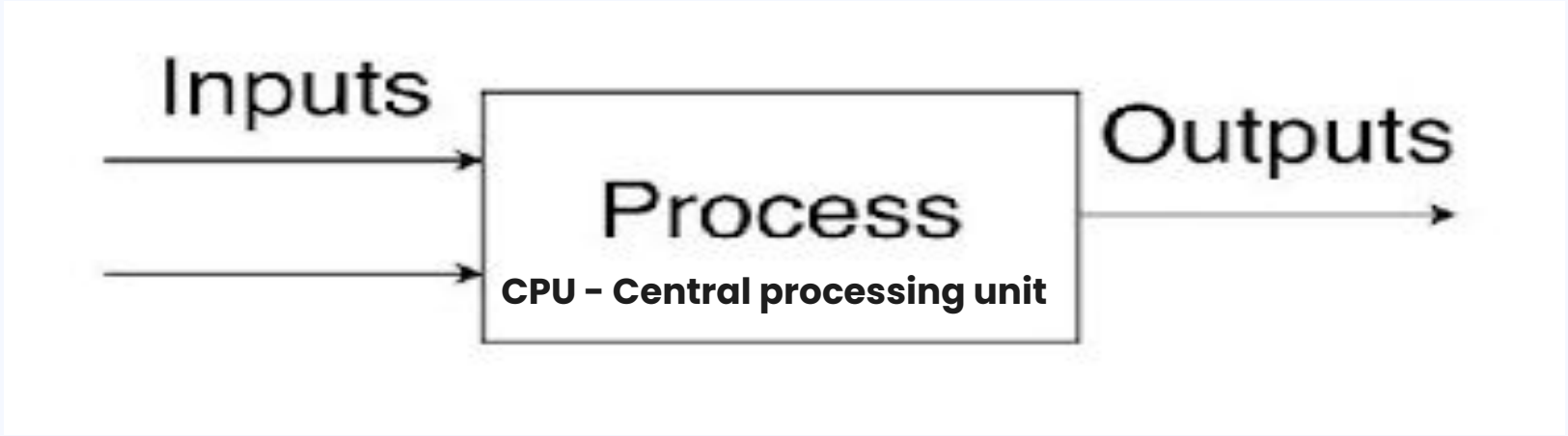
01

Program

A program is a set of instructions that a computer follows to perform specific tasks. Examples of devices that operate on programs include printers, washing machines, microwaves, and calculators.


Inputs
Process
CPU – Central processing unit
Outputs

How do computers understand and process information?

Computers communicate using a binary system, which consists of only two digits: 0 and 1. This is fundamentally different from the decimal system humans use. To bridge this gap, we convert human-readable data into binary code. This process enables computers to manipulate and process information efficiently.

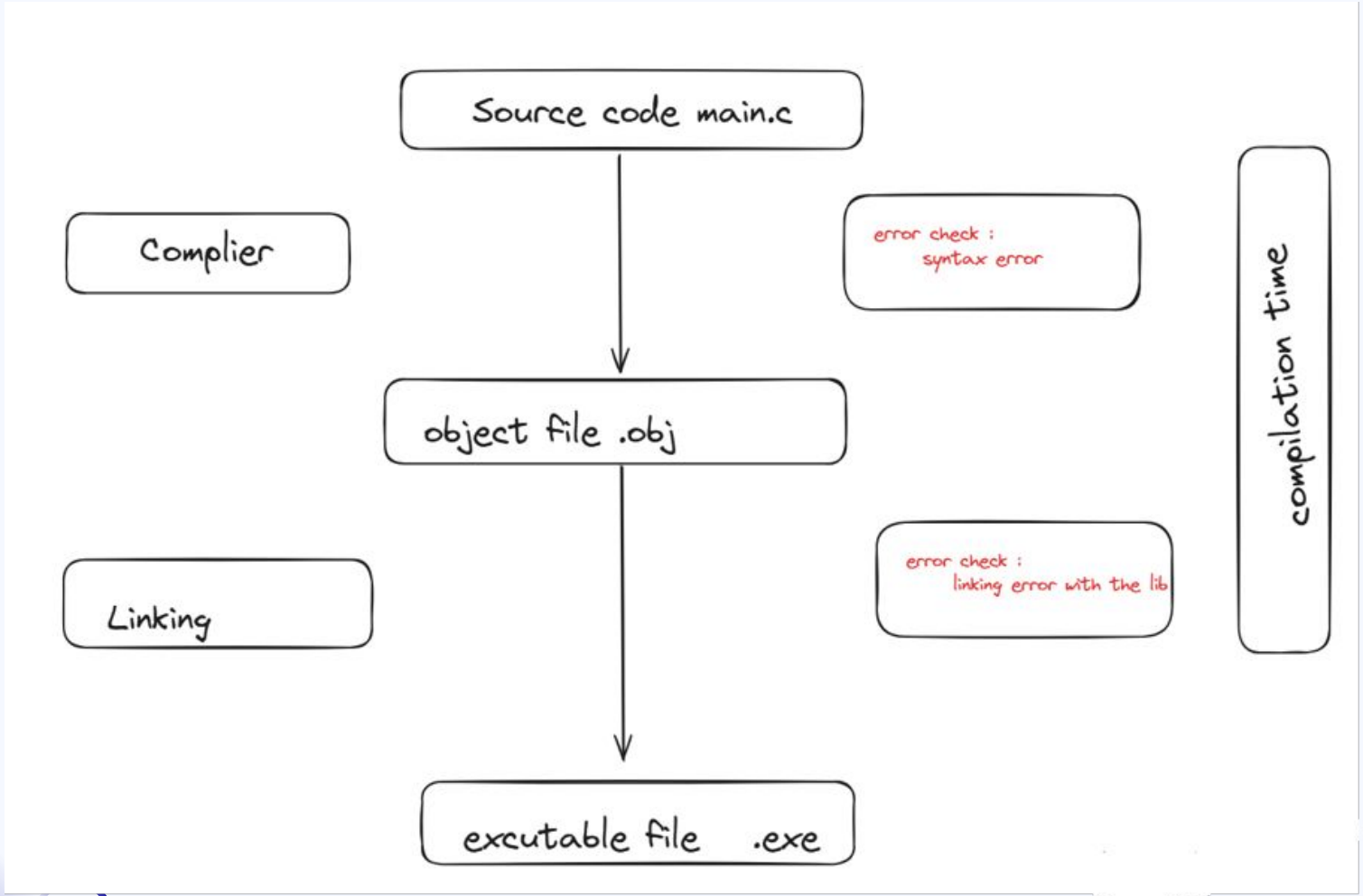
02

Compiler

A compiler is a software program that translates human-readable code into machine code that a computer can understand and execute.

Compiled language:

is a programming language where the code is translated into machine code before it can be run. This machine code is directly understandable by the computer's processor, making the program execute faster.
Examples of compiled languages **include C, C++, and C#**


Source code main.c
Complier
error check :
syntax error
compilation time
object file .obj
Linking
error check :
linking error with the lib
excutable file .exe

Execution Errors :

Runtime errors: Occur during program execution, such as attempting to **divide by zero.**
Infinite loops: Cause programs to run indefinitely without reaching a termination point.
Logical errors: Lead to incorrect calculations or unexpected outcomes, like mistakenly equating 2 multiplied by 5 to 8.

02

Interpreter

An interpreter is a computer program that directly executes instructions written in a programming language.

interpreted language:

An interpreted language is a programming language where the code is executed directly by an interpreter, without first being compiled into machine code. This means the code is translated and run line by line as the program executes.
Examples of interpreted languages include: Python, JavaScript, Ruby, and PHP.

Thanks!

Do you have any questions?