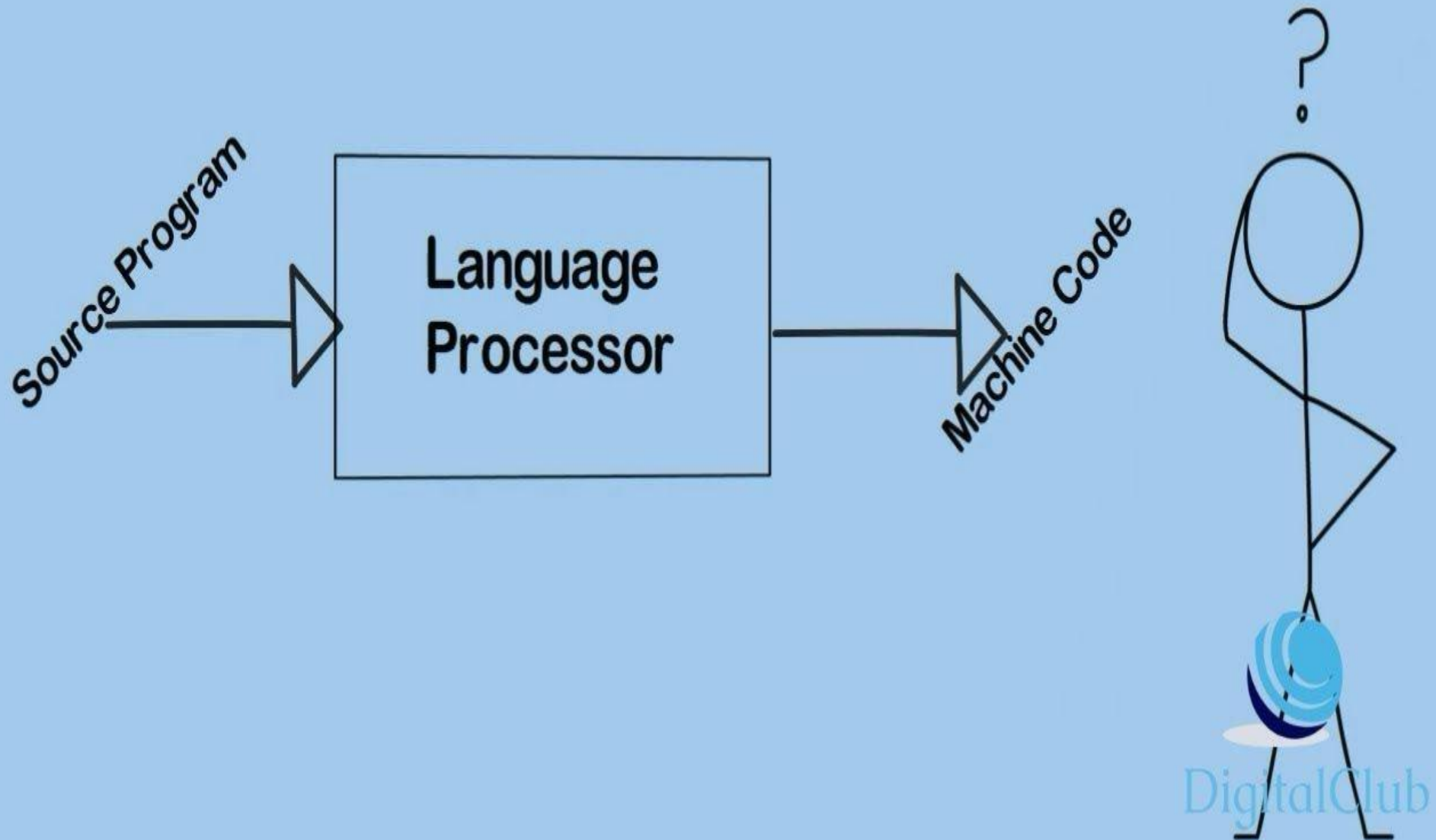


Language Processor

Computer Programming Btech CSE

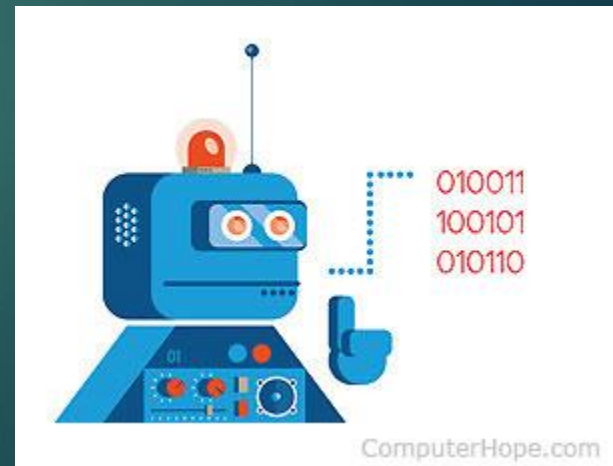
What is Language Processor



Language Processor

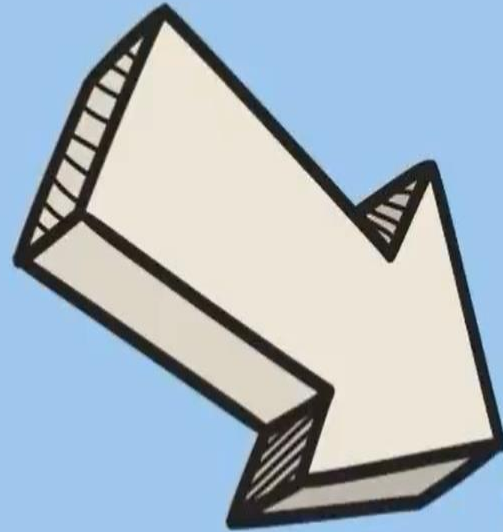
- Language processor is a utility program that takes input as a source program and generate output as machine code.
- Machine code is language consisting of binary and hexadecimal instructions that computer can respond directly.

executed directly by the CPU



```
void main()  
{  
printf("hello world");  
}
```

SOURCE PROGRAM



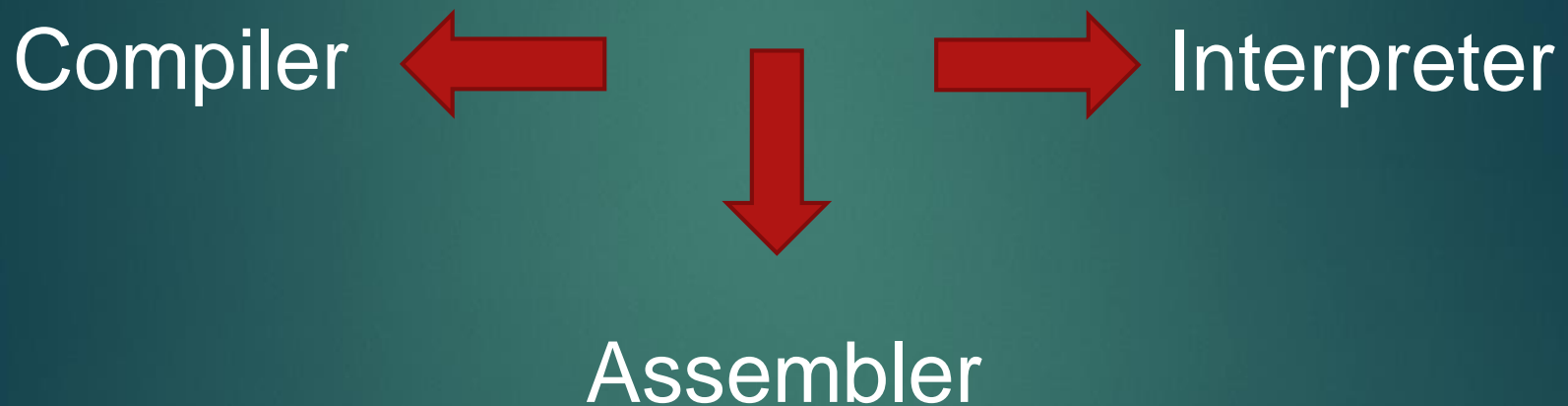
MACHINE CODE

A terminal window with a black background and green text. It displays assembly code with addresses and hex values. A blue sphere icon is positioned over the right side of the code.

```
\.  
0.22  
0000: A9 8D 20 EF FF A9 00 BD  
0008: 16 00 D0 03 4C 1F 00 00  
0010: EF FF E8 4C 07 00 57 4C  
0018: 4C 4C 4F 20 57 4F 57 4C  
0020: 44 21 00  
R
```

Language Processor

kinds of language processor



Compiler

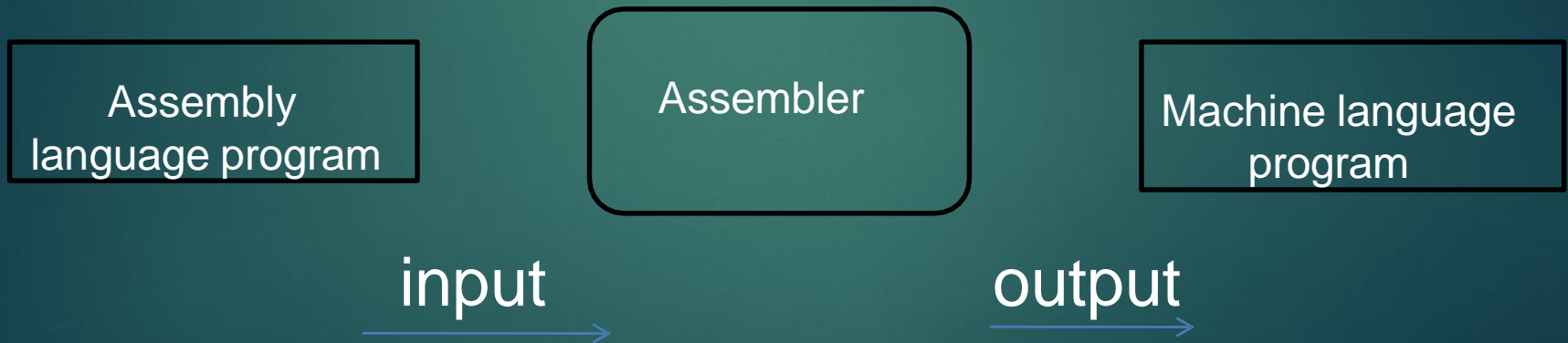
- **Compiler** is used to translate an high level programming language code to machine level code and to create an executable program.
- Compiler checks the error in the program and reports them. All errors are to be removed otherwise code will not be compiled and executed.

Interpreter

- Interpreter is a program that translates high level language to machine code but one statement at a time unlike compiler who reads the whole program at once
- Interpret one instruction at a time.

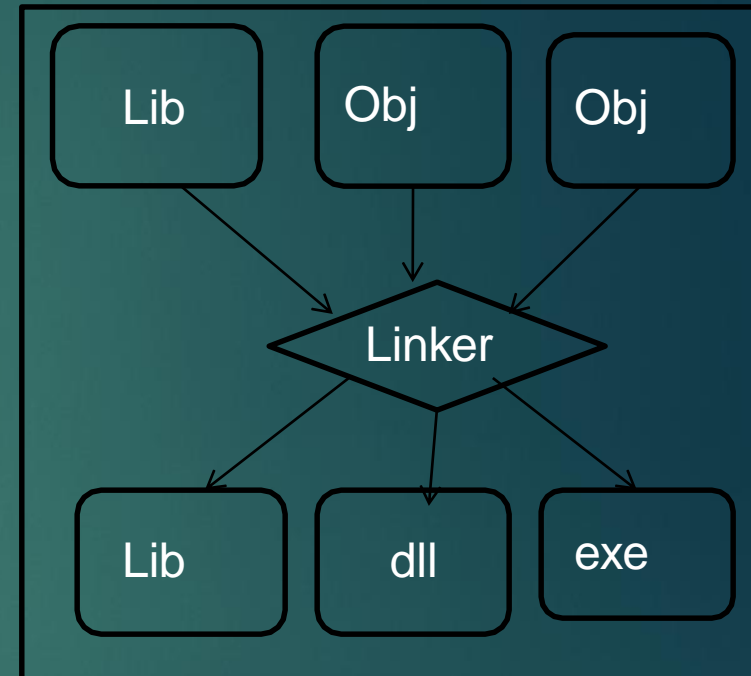
Assembler

- **Assembler** is used to translate an assembly level code to machine readable code. Assembler too checks the correctness of each instruction and reports the diagnosis report.



Linker

- Resolves the relative location of instructions and data
- Links libraries with the object and put them together as executable.
- Combine different-different object file into single executable file example .exe in window operating system



Loader

- Inbuilt component of OS.
- Loads program in to main memory and prepare them for execution



Review

User writes a program in C language (high-level language). The C compiler, compiles the program and translates it to assembly program (low-level language). An assembler then translates the assembly program into machine code (object). A linker tool is used to link all the parts of the program together for execution (executable machine code). A loader loads all of them into memory and then the program is executed.

- Thank you