



Computer Language

- ✓ Among types of computer language, what are the most significant today in ICT industries?
- ✓ What are the main purposes of computer language?





Guide Questions:

- ✓ Between Low-level and High-Level language, which do you think is the most essential in the programming language?

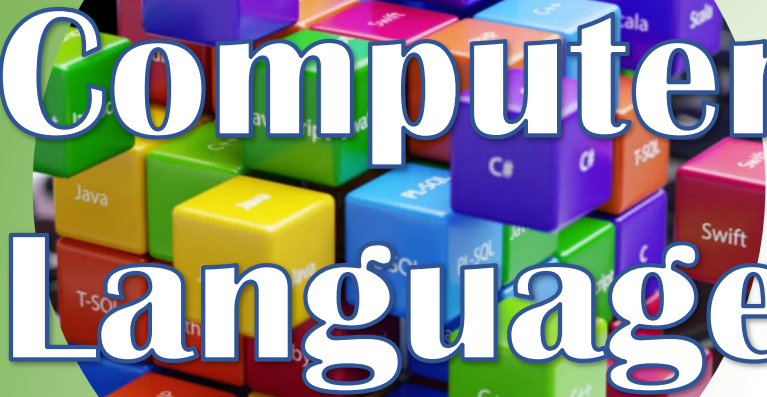




- ❑ **Definition**
- ❑ **Various Types of Computer Language**
- ❑ **Two Categories of Computer Language**



Computer Language



Computer Language

- ✓ Set of instructions for communication
- ✓ Formal language use to communicate with a computer

- ✓ **MACHINE LANGUAGE**- the only language understood by a computer.

✓ made up of instructions and data

✓ are all binary numbers



Machine Language

✓ Almost similar of Assembly language

✓ normally displayed in hexadecimal form

Style Sheet
Specification **Command**
Configuration
Programming

Modeling
Simulation
Page description
Transformation
Language

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Command
Language

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Data Exchange
Language

Simulation
Language

Programming
Language

Mark-Up
Language

Specification
Language

Query
Language

Modeling
Language

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Language



Command Language

The language used to control the tasks of the computer itself, such as starting programs

Shell Script or batch programming languages

Shell Script computer program designed to be
run by a Unix shell, A command line interpreter

```
QEMU
oif="$firewall_simple_oif"
onet="$firewall_simple_onet"
oif6="{firewall_simple_oif_ipv6:-$firewall_simple_oif}"
onet6="$firewall_simple_onet_ipv6"

# set these to your inside interface network
iif="$firewall_simple_iif"
inet="$firewall_simple_inet"
iif6="{firewall_simple_iif_ipv6:-$firewall_simple_iif}"
inet6="$firewall_simple_inet_ipv6"

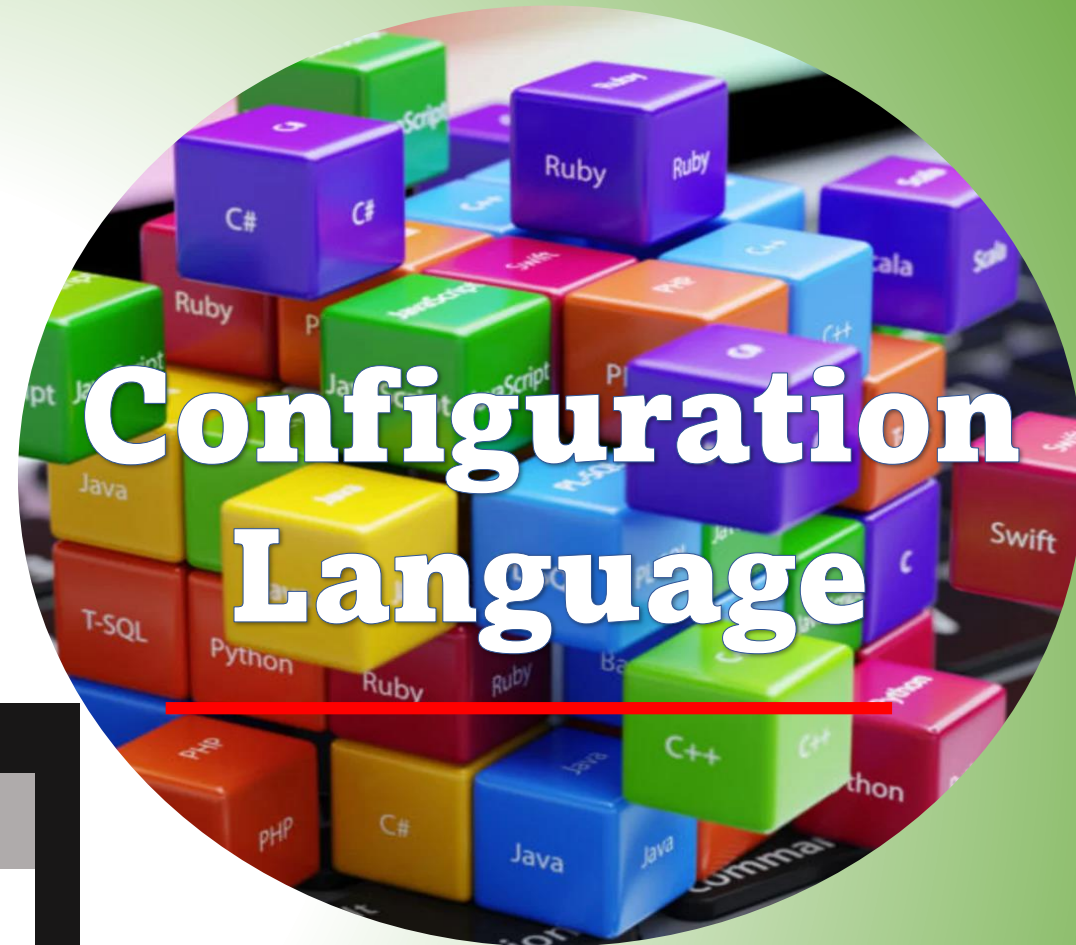
# Stop spoofing
${fwcmd} add deny all from ${inet} to any in via ${oif}
${fwcmd} add deny all from ${onet} to any in via ${iif}
if [ -n "$inet6" ]; then
    ${fwcmd} add deny all from ${inet6} to any in via ${oif6}
    if [ -n "$onet6" ]; then
        ${fwcmd} add deny all from ${onet6} to any in \
        via ${iif6}
    fi
fi
fi

# Stop RFC1918 nets on the outside interface
${fwcmd} add deny all from any to 10.0.0.0/8 via ${oif}
```

For computing:

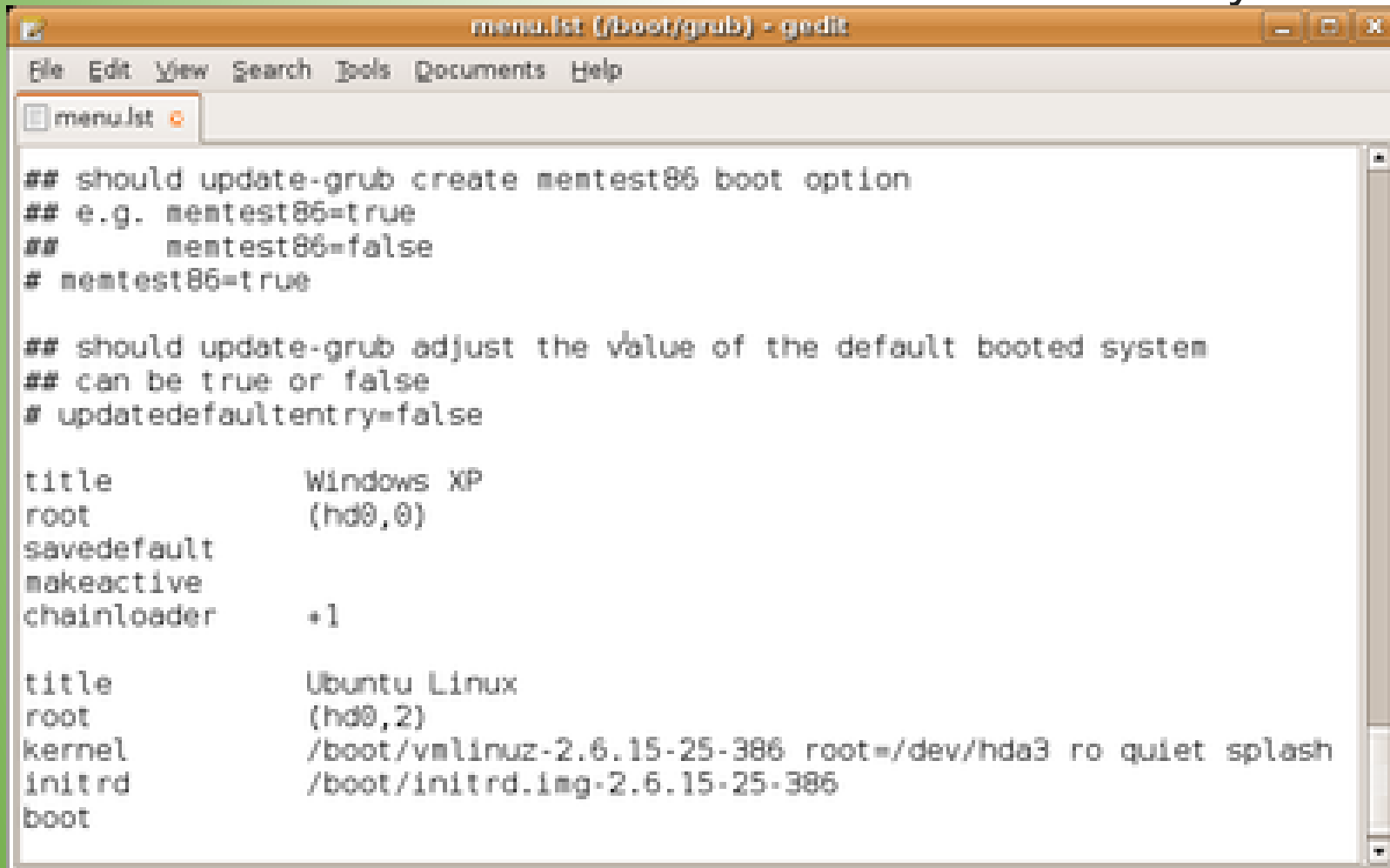
Config files

files used to configure
the parameters and initial
settings for some computer
programs.



For other programs:

[system administrators](#) may be expected to create and modify files by hand using a text editor,



```
menu.lst (/boot/grub) - gedit
File Edit View Search Tools Documents Help
menu.lst
## should update-grub create memtest86 boot option
## e.g. memtest86=true
##      memtest86=false
# memtest86=true

## should update-grub adjust the value of the default booted system
## can be true or false
# updatedefaultentry=false

title          Windows XP
root           (hd0,0)
savedefault
makeactive
chainloader   +1

title          Ubuntu Linux
root           (hd0,2)
kernel        /boot/vmlinuz-2.6.15-25-386 root=/dev/hda3 ro quiet splash
initrd        /boot/initrd.img-2.6.15-25-386
boot
```

a formal language designed to communicate instructions to a machine, particularly a computer

Most programming languages are text-based formal languages, but they may also be graphical.



Two components of Programming Language

Semantics
- meaning

Syntax
- Form

```
1  /*
2  * This line basically imports the "stdio" header file, part of
3  * the standard library. It provides input and output functionality
4  * to the program.
5  */
6  #include <stdio.h>
7
8  /*
9  * Function (method) declaration. This outputs "Hello, world\n" to
10 * standard output when invoked.
11 */
12 void sayHello(void) {
13     // printf() in C outputs the specified text (with optional
14     // formatting options) when invoked.
15     printf("Hello, world!\n");
16 }
17
18 /*
19 * This is a "main function". The compiled program will run the code
20 * defined here.
21 */
22 int main(void)
23 {
24     // Invoke the sayHello() function.
25     sayHello();
26     return 0;
27 }
```



Transformation & Query Language

Transformation Language

a computer language is designed to transform some input text in a certain formal language into a modified output text that meets some specific goal

Query Language

a computer language used to make queries in databases and information systems

Data Exchange Language

- language/format is a language that is domain-independent
- can be used for data from any kind of discipline

Mark-Up Language

often used to control the display of the document or to enrich its content to facilitating automated processing.

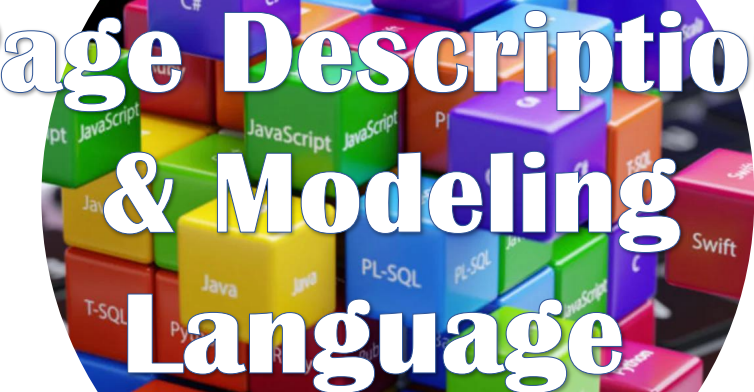


**Data Exchange
& Mark-Up
Language**

Modeling Language

an artificial language used to express information or knowledge, often for use in computer system design

- *Architecture Description Language*
- *Hardware Description Language*



Page Description & Modeling Language

Page description Language

a computer language that describes the appearance of a printed page in a higher level than an actual output bitmap (raster graphics).

Simulation Language

used to describe the operation of a simulation on a computer.



Simulation Language

Two Types of Simulation

- Continuous
- Discrete Event

Specification Language

a formal language in computer science used during systems analysis, requirements analysis, and systems design

to describe a system at a much higher level than a programming language, which is used to produce the executable code for a system



Style Sheet Language

a computer language that expresses the presentation of structured documents.

Different style sheets can be attached to the logical structure to produce different presentations.



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