Glossary

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Contents

1 Modern C practice

TERM	MEANING	WHAT?
UNIX	Operating system (OS)	Enables your computing
Linux[1]	Operating system (OS)	Enables your computing
$PWD	Print working directory	Where you are in the file system
$HOME	Hhome directory (~)	Where your files are
Shell	Connection to the OS	E.g. `bash`, scripting language
Prompt	Command line symbol	Enter shell commands after it
echo	Displays its arguments	E.g. `echo hello` prints `hello`
variable	Memory location	Can be declared/re/defined
PATH	Environment variable	Where computer looks for pgms
mkdir	Make a new directory	E.g. `mkdir -v test`
ls	List files	E.g. `ls -l` for a long listing
wget	Download web content	Needs URL only
man	UNIX manual pages	E.g. `man wget`
log	Message file	Log download process
cat	Viewing command	E.g. `cat hello.c`
cc	C compiler (GCC)	Includes flags like `-o`
compile	Make executable file	E.g. `cc hello.c`
executable	Binary (machine) file	Run e.g. with `./hello`

2 Introduction to C

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[1]Linux comes in many shades and forms - because it is open source, everyone can take it and make it to what he wants it to be. On the Raspberry Pi, we use the Raspberry Pi OS, which is a Debian-style operating system (the package manager is `apt`).

CONCEPT/TOPIC	DEFINITION
DEC PDP-11	1970s mainframe computer
UNIX	Operating system (ca. 1969)
ANSI	American National Standard Institute
String	A data type representing text
Assembler	Machine code (hard to write/read)
Algorithm	Fixed process or set of rules
Linux	Operating system (ca. 1991)
C	Imperative, procedural programming language
compiler	Software to translate source into machine code
C++	Object-oriented (OO) superset of C
Clang	C/C++ compiler
gcc	GNU compiler bundle (incl. C/C++)
Java,C#	OO programming language
Perl	Scripting language
Git	Software version control system
GitHub	Developer's platform (owned by Microsoft)
Library	Bundle of useful functions and routines
Portability	Ability of software to run on different hardwares
Efficiency	Software speed of execution and memory requirements
Permissiveness	Degree to which a language tolerates ambiguities
Object-orientation	Ability to define abstractions
System programming	Programming close to the machine
Application programming	Programming close to the user

3   Installation

CONCEPT	EXPLANATION
Source code	Human-readable program
Compiling	Translating source
Linking	Linking compiled program to libraries
Library	Bundle of reusable macros or functions
Object code	Code ready for execution by a machine
Execution	Running object code on a machine
Interpreter	Machine that interprets and executes source code
Script	Source code for an interpreter
Emacs	Extensible text editor (via Emacs Lisp)
Literate Program	Readable code - expands into doc + executable
GNU	"GNU's not UNIX"
GNU/Linux	Free, open source operating system
Richard Stallman	Creator of the GNU project and Emacs
Org-mode	Emacs package for literate programming (and more)

4   Emacs

TERM	MEANING
IDE	Integrated Development Environment
Literate Programming	Story + code = source + doc
	Programming for machines AND humans
GNU Emacs	Text editor of the GNU Operating System
Org-mode	A major Emacs mode (environment)
Tangle file	Extract source code file (e.g. C)
Weave file	Extract documentation (e.g. PDF)
Meta key	M- (usually ALT on the keyboard)
Macro	An efficient function inserted as-is