

Software specifications

Chapter number	Software required (With version)	Free/Proprietary	If proprietary, can code testing be performed using a trial version	If proprietary, then cost of the software	Download links to the software	Hardware specifications	OS required
1	gcc (> 7)	Free	-	-	Can be installed by package managers.	It works almost on any platform.	Linux, macOS, FreeBSD
2	clang (>4)	Free	-	-	Can be installed by package managers.	It works almost on any platform.	Linux, macOS
3	gdb	Free	-	-	Usually installed as part of gcc installation.	It works almost on any platform.	Linux, FreeBSD, macOS
4	lldb	Free	-	-			
5	g++ (> 7)	Free	-	-	Can be installed by package managers.	It works almost on any platform.	Linux, FreeBSD, macOS
6	clang++ (>4)	Free	-	-	Usually installed as part of clang installation.	It works almost on any platform.	Linux, macOS
7	Open JDK (> 6)	Free	-	-	Can be installed by package managers	It works almost on any platform.	Linux, FreeBSD, macOS, Microsoft Windows
8	Valgrind	Free	-	-	Can be installed by package managers	It works almost on any platform.	Mostly Linux

Detailed installation steps (software-wise)

The steps should be listed in a way that it prepares the system environment to be able to test the codes of the book.

1. gcc, gdb, g++:
 - a. Ubuntu and Debian-based Linux distributions: **sudo apt-get install build-essential**
 - b. RedHat- based distributions: **sudo yum install gcc-c++**
 - c. On macOS: **brew install gcc**
2. Clang, lldb, clang++:
 - a. Ubuntu and Debian-based Linux distributions: **sudo apt-get install clang lldb**
 - b. RedHat- based distributions: **sudo yum install clang lldb**
 - c. macOS: **xcode-select --install**
3. Valgrind:
 - a. Ubuntu and Debian-based Linux distributions: **sudo apt-get install valgrind**
 - b. RedHat- based distributions: **sudo yum install valgrind**

Enough resources can be found online in order to find out more about the installation steps required to install the above main tools in various operating systems.