

**Describe a logging system with your own words:**

A logging system records events like errors, warnings, system events, user actions, audit information, etc. A logging system shall show where in the source code the error occurred and what the severity of the event is. The information collected by a logging system may be used for error analysis, auditing, monitoring an application's health status, identifying unusual system behaviour, getting information for scaling decisions, etc.

A logging system might also contain features for log compression and policies for rotation and long-term retention.

**What is the difference between git submodules and git subtrees?**

A subtree is a copy of another repository into your repo. You thus include the whole other repository including all its history. A submodule is a reference to a specific commit of another repository.

**What is a build system in C++? Name 3 build systems:**

A build system automates the task of generating executables or libraries from the source code for all target platforms (e.g. Window, Mac, Linux, Android, etc.), considering all dependencies.

Examples:

- CMake: open source, you have to write so-called Makefile using a propriety scripting language and then execute the Makefile using the command "make".
- GNU Make: open source, you also have to write Makefiles
- Qmake: open source, you write or generate rather simple "project files". These project files are then used to generate Makefiles.
- Premake: uses LUA scripting language for writing the build scripts

**What is a package manager in C++? Name 3 package manager:**

A package manager is a tool that facilitates the process of managing 3<sup>rd</sup> party software libraries and dependencies. It makes it easier for a developer to search for, download and install these packages, and also helps in managing their dependencies and versions.

It shall ensure that all the required libraries and components are present and up-to-date, and helps to avoid conflicts or versioning issues.

Examples:

- Conan (open source package manager that integrates with build systems like CMake or SCons)
- vcpkg (free package manager maintained by Microsoft)
- Hunter (CMake driven cross-platform package manager for C/C++)