Lab 10: Doxygen
CSE 2100-001

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1 Objective and Description

Watch the video posted on YouTube for Lab-10 (Doxygen).

For this lab you will need to use the code that you have extended for the last Lab (Lab-9). In your main project directory, create a *doc* directory (similarly to the video) and place your *Doxyfile* and your documentation in this directory. Your task description is simple: document the entire code (all four source and header files) to create a complete documentation for Lab 9's code. Do not be afraid to look up Doxygen documentation do-s and don't-s on the Internet.

Once you think that you have provided sufficient documentation to the project, demonstrate your documentation to the TA.

Create a *.tgz* archive of your doc folder and turn it in together with the completed version of this document.

1.1 Definitions and Quick Questions

Code Documentation: is a written text or illustration that accompanies a software or is embedded in the source code which explains the operation or a manual to the software

Commenting Code: the practice of scattering short lines of notes throughout the source code to explain the workings of the program or the intention behind its use.

Member function (C++): Member functions are the functions, which have their declaration inside the class definition and work on the data members

of the class.These function can reside The inside or outside the definition of a class.

2 Question-1 – Documentation vs. Commenting

What is the difference between commenting code and code documentation?

3 Question-set-2 – Code Licenses

What are the three most used open source software licenses (research)?

i) GNU General Public License
ii) MIT License
iii)Apache License

Describe the main difference between these three licenses (include your references).

MIT is one of the most permissive free software licenses. With it, a user can do do whatever he/she wants with a software licensed under the MIT license.But, a copy of the original MIT license and copyright notice to it should be added.

The Apache License is also a permissive license. However, it has stringent terms when it comes to modifications. It requires you to explicitly list out all the modifications that has been done in the original software, i.e., you're required to preserve modification notices. Under the Apache License, also a user cannot name their product in any way that hints at the product being endorsed by Apache.The MIT license does not impose any such terms.

The GNU GPL has a strong copyleft license, while the MIT License is permissive. So software that uses any GPL-licensed component has to release its full source code and all rights to modify and distribute the entire code. The Apache License 2.0 doesn't impose any such terms. A user is not forced to release the modified version. There is an option between choosing to relase the modified version under a different license

References

https://resources.whitesourcesoftware.com/blog-whitesource/top-10-apache-license-questions-answered

Which one of these licenses would you prefer, and why?

I would prefer using the MIT License. MIT provides the most freedom for immediate downstream users: i.e is people who get the source code from websites or third-party and can explore modifying and revising to almost pretty much anything they want with very few restrictions(give credit to the author)

4 Question-set-3 – Subdirectories

Let's assume that you have several subdirectories under your *src* directory that contain source code. Look into the Doxyfile; what setting should you change for all those source files to be part of the documentation process?

The RECURSIVE tag can be used to turn specify whether or not subdirectories should be searched for input files as well. The RECURSIVE tag should be set to YES to accomplish the task.

What can you do if you want all directories below *src* included except for *src/archive*?

Set the EXCLUDE tag to src/archive i.e

EXCLUDE = src/archive