

# Doxygen Configuration and Usage as a Template

## Doxywizard

Start Doxygen's interface **Doxywizard** from the Start Menu in Windows. Make sure the **Wizard** tab is selected in the popup dialog box. This will display 4 headings:

1. Project
2. Mode
3. Output
4. Diagrams

We will enable some basic settings here first:

- Select **Project**, and in the right side of the dialog box you will see fields to enter information about a project. Leave this as is for now.
- Select **Mode**, and tick 'All entities', 'Include cross-referenced source code in output', and make sure 'Optimize for C++ output' is ticked as well (no others are necessary).
- Select **Output**, and ensure 'HTML', 'plain HTML', and 'With search function' are ticked. No other options should be ticked (de-select if necessary).
- Select **Diagrams**, and tick 'Use dot tool from GraphViz package', then tick all sub-categories.

Next select the **Expert** tab.

- You should not need to touch **Project** at this stage.
- Select **Build** and tick 'Extract\_all', and the next 5 boxes that follow it until 'Extract\_Local\_Methods'. If you do not know what they mean, place your mouse over the words and you will get a brief explanation. Leave the other boxes as they are.
- Leave **Messages** as is.
- The **Input** should show the path to your source code. If it doesn't add it in.
- Select **Source Browser** and tick everything except 'Use\_Htags'.
- Select **HTML** and only tick the 'HTML'.
- Leave **Latex**, **RTF**, **Man**, **XML**, **Docbook**, **AutoGen**, **PerlMod**, **Preprocessor**, **External** as they are.

- Select **Dot** tab and tick everything. ‘Dot\_Image\_Format’ can be gif or png.

Use ‘File | Save as’ menu option to save the configuration file. This can be saved to a general storage area in your file system. Accept the default name of **Doxyfile**.

What you have just done is create a configuration file that can be used as a template for any project.

## Template Usage

When you wish to use the template for a particular project (after creating the project), **copy** the template (i.e. **Doxyfile**) into the directory where your source code files for the project are located. In particular the header (.h) files need to be in the same directory as the **Doxyfile**.

Open your **Doxyfile** with the wizard, and you can then enter the details into the **Project** tab for this project. Those details are as follows: ‘Project Name’, ‘Source code directory’; press the ‘Select’ button to browse (if your code is organised in directories, tick ‘Scan recursively’). Nominate the ‘Destination directory’ if required.

All the other configuration options are already set from your template.

Unit site: Practice-Labs/DoxyExample

## Doxygen Comments in Code

The third thing needed is to have actual doxygen comments in each of your project’s header (.h) files. Note that doxygen comments **DO NOT** go in the .cpp files.

Shri has provided an example on LMS for you to get the hang of making doxygen comments in your headers. You can also refer to the Doxygen manual.

As a quick guide, 1 line comments are preceded by triple forward slash (i.e. `///`). These are typically used to comment class member variables.

Multiple line comments start with `/**` and finish with `*/` (each line in between should start with a `*`). Following the `*` on each line, can be placed `@class`, `@brief`, `@author`, `@post`, `@pre`, `@param`, `@return` and many more headings. These allow meaningful comments to be provided about the class and its member functions. In particular, the class itself and every function in the class should have their own doxygen comments. Again, refer to the above mentioned example and the Doxygen manual.

Make sure you save first - see earlier

## Run the Wizard

Lastly, you can run Doxygen to produce your html documentation (similar to javadocs).

In the wizard popup dialog box, click on **Run** tab to execute doxygen. If the **Run** tab is not in the popup dialog box, it should be under the ‘File’ menu.

Once doxygen completes, examine the output in the html directory (look for index.html).