Documenting c/c++ code with Doxygen

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These instructions are a simple overview of how to document a c++/c project using doxygen software and it is used by our group of developers at Sharif Soft Condense Matter Group working on Virtual Cell Model project.

How to install

Write this command in terminal:

```
sudo apt install doxygen
```

How to make a configuration file

Go in the directory of your project and write this command:

```
Doxygen -g <configuration file name>
```

This makes a configuration file of your project that you can edit it with a text editor to set features of your documentation like name of project, output format and … . You can find all information about these features in the configuration file and also in here.

How to create final documentation

Go in the directory of your project and write this command:

```
Doxygen <configuration file name>
```

This creates the output in address that has been set in configuration file(the default is in same directory as configuration file). Doxygen software reads all the files in your directory and creates the output based on configuration file edit, your codes and other files in your project directory. You can see some examples in here.

 Attention!: If you want doxygen to go through all your subdirectories too, you need to change RECURSIVE name-tag in configuration file to YES.

How to edit the documentation

Doxygen automatically goes through your code and extract the classes and header files but if you want it to extract global functions and variables outside of classes you need to add this lines in a comment to your code file:

```
///@file
///@brief description about file.
```

Also to add description to your classes, functions, variables and … you need to follow a specific commenting style described in [here](#).

You can add a new tab to your html output by making .md files and edit them with markdown syntax to make your desired html pages in that tab. You can find more information about how to use markdown support in [here](#).