

Doxygen tutorial 41047025S 王重鈞

Introduction:

Doxygen is a file generate tool. It helps specific format annotation turn into description file. The programmer can read the file and understand a function, file, struct meaning in a brief time. Reduce waste time to read the code.

How to download

You can use `sudo apt install doxygen` to install on terminal, or you can follow below steps.

GIT repository

If you want to download by git repository, only following below operations.

First, you need install g++, python, cmake, flex, bison. Then, use these command.

```
$ git clone https://github.com/doxygen/doxygen.git
$ cd doxygen
$ mkdir build
$ cd build
$ cmake -G "Unix Makefiles" ..
$ make
```

If you want to download binary, you can search their website. [DOWNLOAD WEB](#)

Configuration

If we want to output file meet the format which we want, we need to set the Configuration to our expectation.

1. Generate Configuration file

Use `doxygen -g <config_file>` to generate the Configuration file.

2. Change the setting.

Then, you can revise `<config_file>` argument to let the output meet your demand. Here is official document for configuration. [CONFIGURATION LIST](#)

Write annotation

After download doxygen, we need to write format annotation in your code let doxygen can read it.

1. Annotation text need be included by following types annotation marks

```
/**
 * ... text ...
 */
```

```
/*!
 * ... text ...
 */
```

```
/*!
... text ...
*/
```

```
///
/// ... text ...
///
```

```
//!
//!... text ...
//!
```

```
////////////////////////////////////
/// ... text ...
////////////////////////////////////
```

```
/******
 * ... text
*****/
```

All of them are vaild.

2. Write annotation text

For general, the annotation be used to describe a function or class. Thus, we usually have a brief description and detail description for function and class.

Thus, Doxygen will view the first line of annotation is brief description, and after a blank line, following text will be view as detail description.

```
/**
    brief description

    detail description
    .
    .
*/
```

However, there's another way can tag annotation more clear. That is use **command**.

In doxygen, you can use **@** or **** to tag the annotations. For, instance, we can use **\brief <text>** to tag text is a brief annotation for this function.

Beside, there're other function command you can use, here is an example.

```
/** \file myfile.h
    \brief description
    \var a is 5

    detail description
    .
    .

    \author Takala
*/
```

Here is official document for command. [COMMAND LIST](#)

Generate the file

First, use following command.

```
doxygen <config>
```

Then we will get two directories, html and latex.

- In html, you can find a file `index.html`, click it and you can read description file on website.
- In latex, you can use makefile to build the pdf file. If you don't have `texlive-latex`, you can use `sudo apt-get install texlive-latex-base` `sudo apt-get install texlive-latex-extra` to download. And the output pdf will named as `refman.pdf`

Example

In example.c, use could find I have written some annotations in code file.

Then, use can use `make` to build `refman.pdf` and read the result.