Source code documentation template

Erica Snider
Fermilab

June 27, 2017

The objective

- To the extent reasonably possible
    - Make the code self describing for people interested in
        - Using it
        - Maintaining it
        - Understanding a result

- Requires that
    - It is easy to find
    - Contains the key points for those audiences
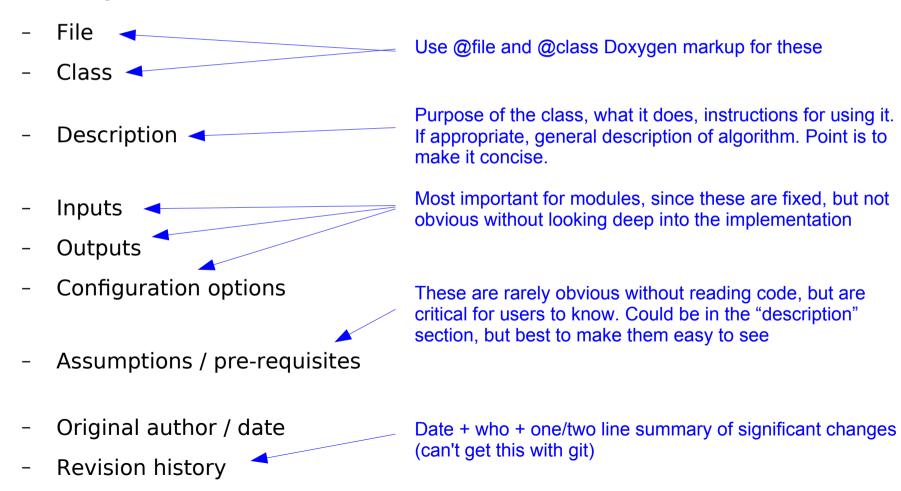   - The burden on the developer is low

The strategy

- Choose the following guidelines

  - Target all levels of the code

  - Have brief comments at the top of header files, module / service cc files

  - Adopt more-or-less standard format for

  - Provide only the most important, high-level information required

  - Construct such that they are associated correctly in Doxygen

The proposal

- In every header file, module, and service file, include:

    - File
    - Class

        Use @file and @class Doxygen markup for these

    - Description

        Purpose of the class, what it does, instructions for using it. If appropriate, general description of algorithm. Point is to make it concise.

    - Inputs
    - Outputs
    - Configuration options

        Most important for modules, since these are fixed, but not obvious without looking deep into the implementation

        These are rarely obvious without reading code, but are critical for users to know. Could be in the "description" section, but best to make them easy to see

    - Assumptions / pre-requisites

    - Original author / date
    - Revision history

        Date + who + one/two line summary of significant changes (can't get this with git)

The proposal

- In every header file, module, and service file, include:

    - File

    - Class

    - Description

    - Inputs

    - Outputs

    - Configuration options

    - Assumptions / pre-requisites

    - Original author / date

    - Revision history

The goal is to allow someone to use the code, so only need to write as much as needed for that

Detailed description of methods should be included with the method prototype in the class definition

Detailed comments on the implementation should be embedded in the code

The end