Praktische Aspekte der Informatik

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Prototype Presentation

20.12.2017
Prototype Presentation

• Show everyone what you have so far!

• Run your prototype on the projector.

• Say a few words about what you have done and what’s left to do.

• Everyone is invited to ask questions and make suggestions.

• No more than 5 Minutes per project!
Documentation

Getting started with Doxygen
Warning!
The following slides are meant to give you a very superficial introduction.

If you want to learn more, have a look at:
http://www.stack.nl/~dimitri/doxygen/starting.html
• Why use Automatic Documentation?
• Doxygen – Basic Usage
• Doxygen – Advanced Usage
Why use Automatic Documentation?

• Help others (and future-you) understand your code

• Comment once, use several output formats
  - HTML
  - LaTeX
  - Custom output
  - … more, e.g. Qt Assistant

• Create different views of software
  - Automatically generate documentation for a user group
  - No need to maintain documentation multiple times
Why use Automatic Documentation?

**Top-down**
- Create model first
- Generate code stub from model
- e.g. MS Visio, ...

**Bottom-up**
- Write code first
- Update documentation while coding
- e.g. Doxygen, ...

https://graphics.tu-bs.de/teaching/ws1718/padi/
• You can easily generate a basic doxygen file
  `doxygen -g <config-file>`

• Modify in text editor and run
  `doxygen <config-file>`

• Alternatively, you could use a GUI, e.g. `doxywizard`
# This tag specifies the encoding used for all characters in the config file
# that follow. The default is UTF-8 which is also the encoding used for all
# text before the first occurrence of this tag.

DOXYFILE_ENCODING = UTF-8

# The PROJECT_NAME tag is a single word (or a sequence of words surrounded
# by quotes) that should identify the project.

PROJECT_NAME = My Project

# The PROJECT_NUMBER tag can be used to enter a project or revision number.
# This could be handy for archiving the generated documentation or
# if some version control system is used.

PROJECT_NUMBER =

# The OUTPUT_DIRECTORY tag is used to specify the (relative or absolute)
# base path where the generated documentation will be put.

OUTPUT_DIRECTORY =

# The OUTPUT_LANGUAGE tag is used to specify the language in which all
# documentation generated by doxygen is written. Doxygen will use this
# information to generate all constant output in the proper language.
# The default language is English, other supported languages are:
# Afrikaans, Arabic, Brazilian, Catalan, Chinese, Chinese-Traditional,
# Croatian, Czech, Danish, Dutch, Esperanto, Farsi

OUTPUT_LANGUAGE = English

...
• Document your code!

• Several options:
  ▪ Use /*! Or /*** instead of /*
  ▪ Use ///! or //// Instead of //
  ▪ And many more...

• Example:

  /*!
  \brief Brief description.
  * Brief description continued.
  *
  * Detailed description starts here.
  */
• There are a lot of special commands:

\texttt{\textbf{\struct}} to document a struct.
\texttt{\textbf{\union}} to document a union.
\texttt{\textbf{\enum}} to document an enumeration type.
\texttt{\textbf{\fn}} to document a function.
\texttt{\textbf{\var}} to document a variable or typedef or enum value.
\texttt{\textbf{\def}} to document a \#define.
\texttt{\textbf{\typedef}} to document a type definition.
\texttt{\textbf{\file}} to document a file.
\texttt{\textbf{\namespace}} to document a namespace.
\texttt{\textbf{\package}} to document a Java package.
\texttt{\textbf{\interface}} to document an IDL interface.

...
/!* \file structcmd.h  
* \brief A Documented file.  
* Details.  
*/  
/*! A test class */  
class Test {  

public:  
/** An enum type.  
* The documentation block cannot be put after the enum!  
*/  
enum EnumType {  
  ValueA, /**< enum value 1 */  
  ValueB /**< enum value 2 */  
};  

protected:  
  void member(); //!< A protected member function.  

private:  
  int value; //!< An integer value */  
};
• Create different output
  ▪ HTML pages
  ▪ Latex files

• Graphs/Diagrams ([www.graphviz.org](http://www.graphviz.org))
• Additional options
  ▪ Include formulas (LaTeX style)
  ▪ Include graphics
  ▪ Change formatting
  ▪ Create your own styles

• Example: Images
  \image <format> <file> ["caption"] [<sizeindication>=<size>]