Robot Vision Seminar

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Doxygen?

- Documentation generator (HTML, RTF (MS-Word), LaTeX, XML)
- Dependency graphs, inheritance diagrams, and collaboration diagrams
- Undocumented code -> Code structure
- Multi-platform, multi-language
  - Most Unix-like systems, Mac OS X and Windows
  - C++, C, C#, Objective-C, Java, Perl, Python, IDL, VHDL, Fortran, Tcl and PHP
- GNU General Public License

Text blocks

There are several ways to mark a comment block as a detailed description:

1. You can use the JavaDoc style, which consist of a C-style comment block starting with two *'s, like this:

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

2. or you can use the Qt style and add an exclamation mark (!) after the opening of a C-style comment block, as shown in this example:

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

In both cases the intermediate *'s are optional, so

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

is also valid.

3. A third alternative is to use a block of *at least two* C++ comment lines, where each line starts with an additional slash or an exclamation mark. Here are examples of the two cases:

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

or

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

```cpp
//!  A test class.
/*!
  A more elaborate class description.
*/

class Test
{
  public:

    //! An enum.
    /*! More detailed enum description. */
    enum TEnum {
                 TVal1, /*!< Enum value TVal1. */
                 TVal2, /*!< Enum value TVal2. */
                 TVal3  /*!< Enum value TVal3. */
               }
         //! Enum pointer.
         /*! Details. */
         *enumPtr,
         //! Enum variable.
         /*! Details. */
         enumVar;

    //! A constructor.
    /*!
      A more elaborate description of the constructor.
    */
    Test();

    //! A destructor.
    /*!
      A more elaborate description of the destructor.
    */
    ~Test();

    //! A normal member taking two arguments and returning an integer value.
    /*!
      \param a an integer argument.
      \param s a constant character pointer.
      \return The test results
      \sa Test(), ~Test(), testMeToo() and publicVar()
    */
    int testMe(int a,const char *s);

    //! A pure virtual member.
    /*!
      \sa testMe()
      \param c1 the first argument.
      \param c2 the second argument.
    */
    virtual void testMeToo(char c1,char c2) = 0;

    //! A public variable.
    /*!
      Details.
```

Main page

- The main page can be used to write long, descriptive texts.

- You can put anything you want on the main page.

- There are many special commands that can be used to format the main page, e.g., \section, \subsection, \subpage, \page, \dot etc.


```
/**
 * @mainpage   Title of Main Page
 *
 *             Descriptive information placed on main page.
 *             <p/> <br/>
 */
```

Including formulas

- Doxygen allows you to put LaTeX formulas in the output (works only for the HTML and LaTeX output)

```
\f[
  |I_2|=\left| \int_{0}^T \psi(t)
          \left\{
              u(a,t)-
              \int_{\gamma(t)}^a
              \frac{d\theta}{k(\theta,t)}
              \int_{a}^\theta c(\xi)u_t(\xi,t)\,d\xi
          \right\} dt
      \right|
\f]
```

results in:

$$|I_2| = \left| \int_0^T \psi(t) \left\{ u(a,t) - \int_{\gamma(t)}^a \frac{d\theta}{k(\theta,t)} \int_a^\theta c(\xi)u_t(\xi,t)\,d\xi \right\} dt \right|$$