Qt and Git

Basic guide to advanced tools

Agenda

- Qt
  - Purpose and benifits
  - Some useful libraries
  - Setup
  - Questions
- Git
  - Purpose and benifits
  - Workflow
  - Some commands
  - Setup
  - Questions

Qt

- Cross platform C++ framework
  - IPC, GUI, DB, XML, etc.
  - Macros
    - e.g. foreach (class object, collection)

- IDE
  - Graphical design mode
  - Debugging tools
    - #include <QDebug> with qDebug() output stream
  - Framework documentation
  - Tutorials

Qt classes

- Network
  - Event based IPC
  - #include <QtNetwork/QtNetwork>
- GUI
  - XML based design
  - Create Qt Widget Project → Qt GUI Application
- Database
  - #include <QSqlDatabase>
- XML
  - #include <QXmlStreamWriter>
  - #include <QXmlStreamReader>

Qt – Setup

- Download and install Qt
  - http://qt.nokia.com/

Questions?

Git SCM

- Backup
- Version control
- Team work
- Industry

Git - Workflow

1. Create Git project in remote repository
2. Clone remote repository to local machine
   Currently in master branch
3. Create local branch for development

4. Check out local branch
5. Make changes
6. Add files for commit
7. Commit changes to local branch
8. Checkout master branch
9. Pull changes to master branch
10. Merge with local branch (causes commit)
11. Push changes to remote repository
12. Repeat from 4.

Git – Commands

- clone [URL]
  - Copies the content of the remote repository to the current directory and sets up .git (Git configuration).
- branch -a [name]
  - Creates a branch with the specified name (without –a). If no name is specified, existing branches are listed. If –a is specified, remote branches are included.
- add [file(s)]
  - Adds specified files to the branch. Only added files will be included in commits.
- commit –m “comment”
  - Creates a backup of the current state of your files. This does NOT upload files to remote repository.

Git – Commands (contd.)

- push origin [branch]
  - Uploads commits from the specified branch to the repository.
- pull origin [branch]
  - Gets all commits to the specified branch from the repository.
- merge [branch]
  - Merges the specified branch into the current active branch. This will create a commit for the active branch if the merge was successful, i.e. no conflicts.
- status
  - Current branch, status of the current branch, changes, commit status.

Git - Setup

- Git repository
  - GitHub.com
    - Free public accounts
    - Free private accounts for students (5 repositories)
    - Wiki
  - RepositoryHosting.com
    - Cheap accounts
    - Git, Subversion and Mercurial
    - Wiki
- Git software
  - http://git-scm.com/
  - Command line
  - GUI

Git – Setup (contd.)

- To be able to push code
  - In *bash* (*Git bash* on Windows)
    - ssh-keygen –t rsa –C “me@email.com”
  - Add public key (content of id_rsa.pub) to repository SSH settings

- To be able to commit
  - In *bash* (*Git bash* on Windows)
    - git config user.email “me@email.com”
  - or globally
    - git config --global user.email “me@email.com”

Questions?