Subversion[1] is a Source Code Management application which basically provides you with an easy way to keep multiple versions of your source code and easily revert to any version should the need arise. For developers writing code on the Windows platform, the best way to interact with a Subversion repository is TortoiseSVN[2].

TortoiseSVN is a Windows shell extension that allows you to access SVN repositories within Windows Explorer. Basically, any folder on your hard drive can be turned into an SVN folder and used to store a revision of an SVN repository with just a few mouse clicks and some connections info.

**Checkouts and Commits**

When a developer wishes to work with SVN version-controlled source code, he or she must first 'check out' the current version of the code (or possibly an older version, if necessary). 'Check out' describes the process of the TortoiseSVN client connecting to the SVN server, and downloading a version of the code in a repository. Once the code is checked out, it can be worked with just like un-versioned code. After some milestone has been reached (or the workday has ended), the updated code can then be 'committed' back to the SVN repository as a new version of the source code, and subsequent attempts to check out the latest version of the code will acquire this newer, updated version.

In the following example, we will be 'checking out' the latest version of the iris4 source code (just replace the name iris4 with the repository you wish to access).

1. Download and install the latest version of [TortoiseSVN](#).
2. Restart your computer.
3. Now that TortoiseSVN is installed and ready to go, we'll use it to checkout the latest version of the Wireless Simulator source code. Create a new folder called SVN somewhere on your system (e.g. in your My Documents folder, or on the Desktop). Within the SVN folder, create a second new folder, this one named wirelessSim.
4. Now, right-click on the wirelessSim folder. In the shell context menu that pops up, select SVN Checkout...
5. A window should pop up that looks like this:
N.B. Please read appendix A to find out how to download and configure the SSH client Putty with the profile named "CsLab" (without quotes).

In the "URL of repository" drop down box enter the following
svn+ssh://CsLab/home/svnrepos/wiresim/trunk/src

6. For the "Checkout directory" click on the "..." button to browse to the location where you created your wirelessSim folder and then create a new folder called src in the wirelessSim folder. Your folder path in the "Checkout directory" should look similar to the following
G:\School Code\SVN\wirelessSim\src

N.B. Please remember only the last two folders need to match this path shown above.

7. Your window should now look something like the following

![TortoiseSVN: Checkout](image)

8. Now click the OK button. If you have setup your Putty client correctly as outlined in Appendix A then you should see the following screens.
9. Again assuming you setup your Putty client correctly as outlined in Appendix A and your credentials checked out, you will see the two screens shown above. Now click the OK button to return to your windows explorer window.
Inside the "src" folder you should now have all the source code needed to work with the wireless simulator project. The green check signifies that all the files within have not changed in comparison to the repository. Please note that sometimes windows is very sluggish and you may need to refresh the folder listing to get the green check icon overlay to show up.

Please note that you could have just check out a sub-folder of the repository, or even a single file. To do this, just modify the URL of repository... field, and run the checkout operation as usual. Go ahead, try it out yourself!

**The Commit Operation**

In the following example, we will be committing a change to the repository. Note: please don’t actually make a commit to the repository for this tutorial - just read along! (We don’t want the wireless simulator repo to get messed up with a bunch of 'SVN practice' commits.)

If you have modified any of the files you have checked out, added new files to the folder (or a sub-folder) where you have versioned files, or if you have deleted versioned files, you will have to commit these changes to the SVN repository to try and make them stick. I say try here because it is possible that the commit operation will fail if your changes conflict with someone else's changes.
1. You may have made changes to just one file, or just a set of files within a subfolder of the local snapshot of the repository, or you may have made changes all over the place, added files, deleted folders, etc. You can commit these changes by right-clicking on the file, sub-folder, or repository folder (whichever will cover the entire set of files/folders you have changed), and select SVN Commit.... You should see a screen pop up like the following:

2. The above screen will show you a list of all the modified files, and will include other information depending on whether you've been deleting files/folders, renamed them, or added them to the repository. In the upper text box, write a comment that is concise, yet fully describes the important changes you have made to the repository (for example, you might comment, “Adding interface.h and fixed the I/O bug in main() in file main.cpp”). Only use accurate, descriptive comments so others can understand how the new version of code you are creating differs from the previous version! Also please include your name and primary email address at the beginning of the log file.

These are the basics of how to check out and check in source code from an SVN repository using tortoiseSVN as a client. There is a whole lot more that can be included in this tutorial but it is beyond the scope of this document at this time. Please check out the following web links for more information on the other features of TortoiseSVN.

Links
1. TortoiseSVN:  
   http://sourceforge.net/project/downloading.php?group_id=138498&use_mirror=superb-east&filename=TortoiseSVN-1.3.5.6804-svn-1.3.2.msi&59523709