

Assignment 1: Debugging

Project Debug01

Note that the program executes with program arguments '<< Data\Input.txt'. You can find these settings in the <Project><Settings> dialog under the <Debug> tab. The working directory equals '.', thus the working directory is equal to the local directory. The data file *Input.txt* can be found in the local directory *Data*.

Do a <Build><Rebuild All> and afterwards a <Build><Start Debug><Go>. This runs the program until a breakpoint is reached. In the debug context window the context of the break point can be seen. In the right window you can watch certain variables.

In the <Watch 1> add as variable names *number*, *i*, and *a[9]*. Immediately, the current values of these variables are shown.

Now go to the statement *cin >> a[i];* and right mouse click to insert a new breakpoint. Press <F5> (= <Debug><Go>) to step through the loop. Find the error and correct it.

In Microsoft Visual C++ select <Help><Index>. The MSDN Library Visual Studio 6.0 shows. From the list in the main window click <Visual C++>. Now select from the documentation <Visual C++ Programmer's Guide>. You find a complete list with all kinds of 'getting started' tutorials for programming in Visual C++. We select <Debugging Your Program>.

Project Debug02

<Build><Rebuild All> to compile the program.<Build><Execute Debug02.exe> to execute the program. What do you notice? (;)) Use break points and watch the variables as in the previous case to solve the problem. (Try *not* to look at the input.txt files for extra clues!)

Note, the workspace for this has the active configuration set to the Release version. You first have to set the active configuration to the Debug version: <Build><Set Active Configuration> and select <Debug02 – Win32 Debug> <OK>.

Project Debug03

This project shows how a simple insertion sort could work to obtain a sorted list from an unordered list of numbers. The project contains several errors. Two are very obvious. The third error is somewhat hidden in the implementation of the insertion sort method. For this you should formulate for yourself what the function *insert* exactly is supposed to do. Use the debugger to solve the problems.