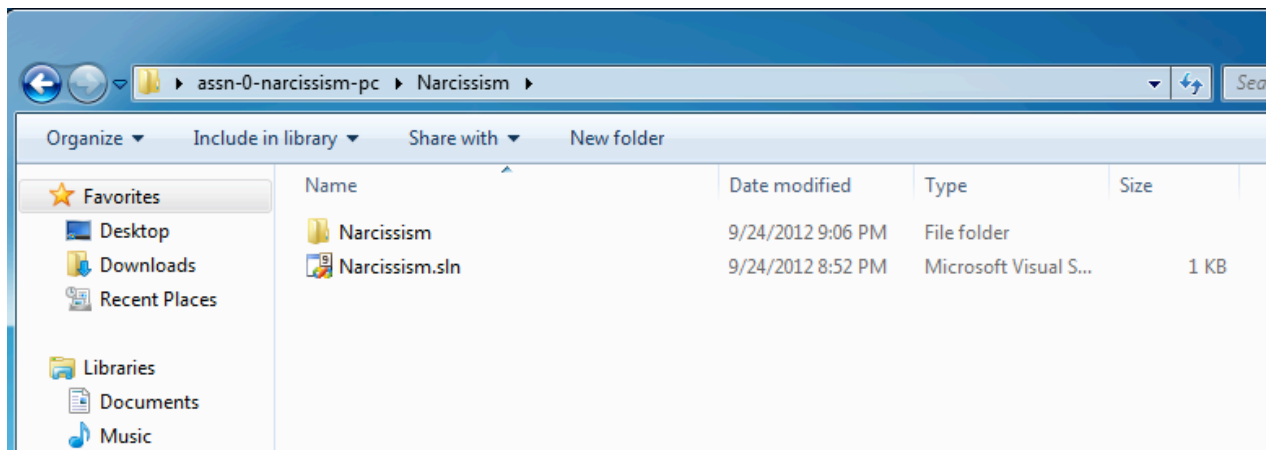# Using Microsoft IDEs

Once you have access to Visual Studio 2008 (VS2008) or Visual Studio C++ 2008 (VC++2008), you should play around with it for a while before tackling any of our major assignments. I've gone ahead and posted a starter project for Assignment 0: Narcissistic Numbers, which is a **complete, working program** that prints out the first 25 narcissistic numbers. **You don't need to actually code or submit any work for Assignment 0**—it's simply here so we have a small programming project to refer to while teaching you VS2008. (This handout assumes you have access to VS2008, but if you've only downloaded VC++2008, then just substitute VC++2008 wherever you see VS2008 and improvise a bit. It should all still make sense.)

Download the version of the Assignment 0 starter files that are appropriate to your own operating system. Unzip the file, and open up the folder to find the two folders, **Narcissism** and **StanfordCPPLib**. Navigate to **Narcissism** to expose the following set of files:
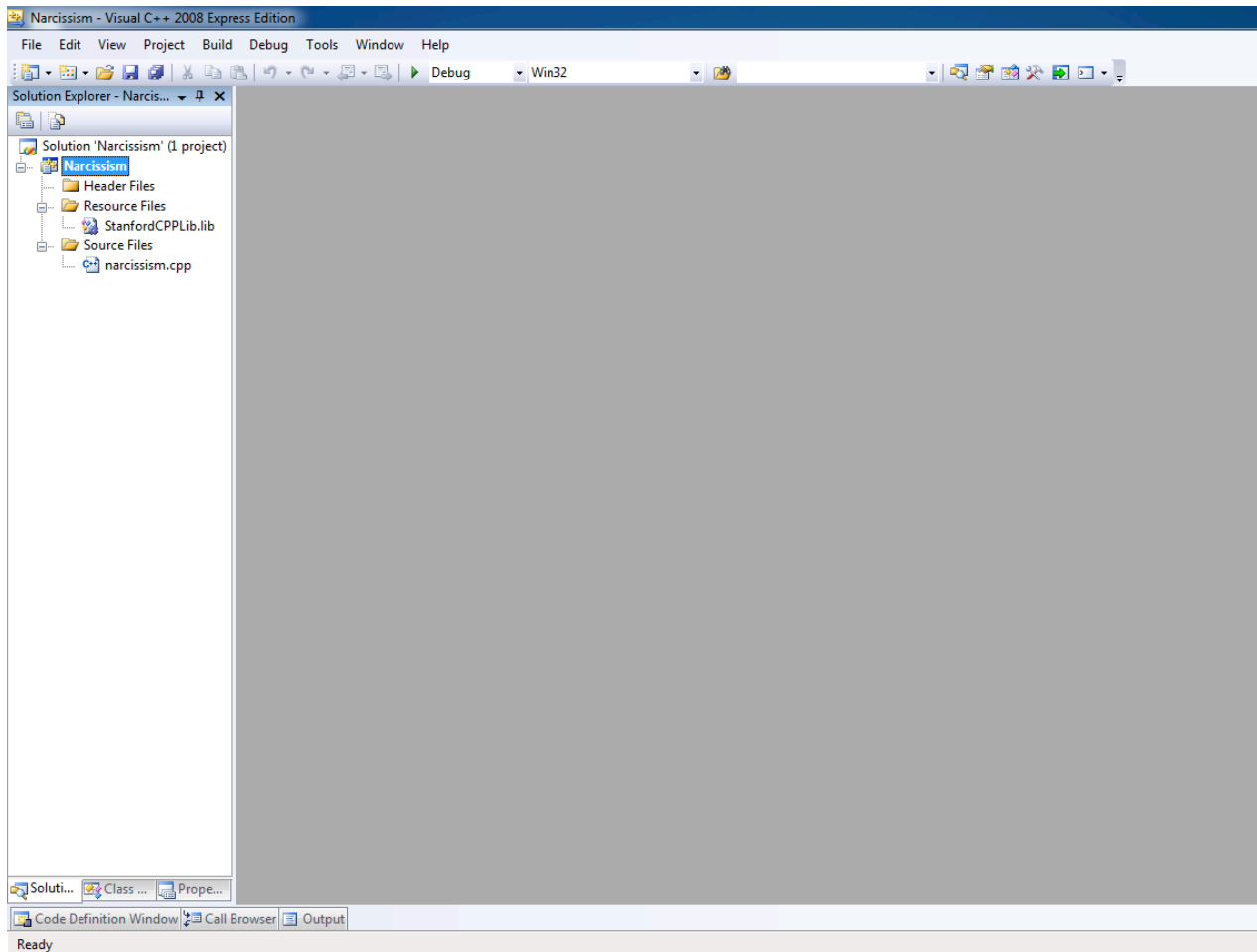

Narcissism.sln is the primary file that helps you manage all of the other files that contribute to a working C++ program. You can tell it's a Microsoft IDE-related file by its icon and the *Microsoft Visual Studio Solution* label in the **Type** column.

When you want to code and the project isn't open, you'll typically double click the relevant **.sln** file to launch VS2008 and to open up the VS2008 project the **.sln** file represents. If you go ahead and double click **Narcissism.sln**, VS2008 should fire up and open the project (see the next diagram).

If you have multiple versions of Visual Studio installed on your computer, Windows may try to open the **.sln** file using a version other than 2008. If this happens, Visual Studio may ask you to convert your project. If you have VS2008 installed and you'd like to avoid
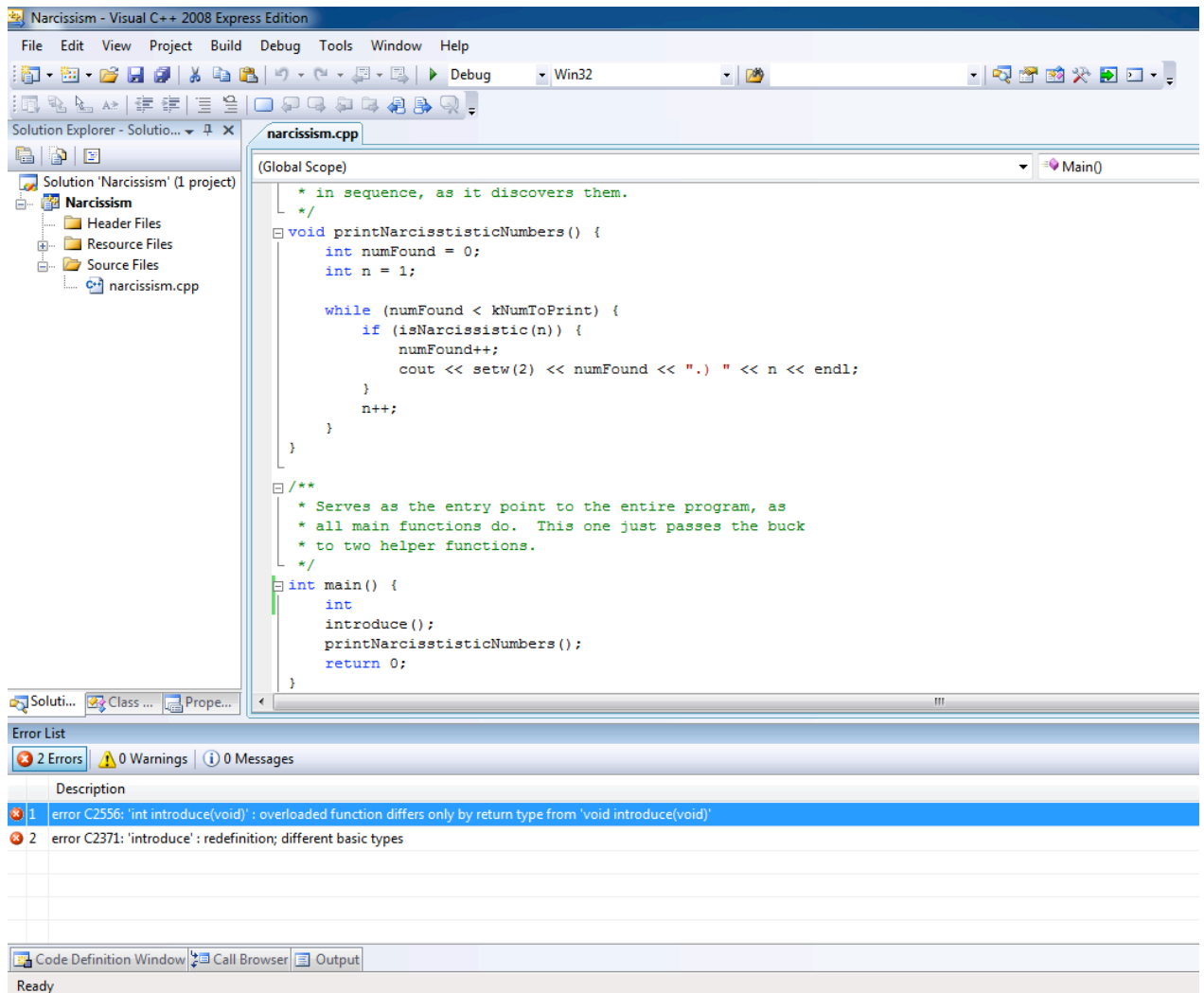
converting the project, you can open up VS2008 directly and select **Open Project** from the start page, then navigate to the **.sln** file yourself.

In the panel on the left or right hand side (this is called the *Solution Explorer*, and you can move it around) you will see a list of the files in the project you just opened. Just double-click on any of the files to open it.

There are aspects of this setup that should be familiar to those of you who used Eclipse in CS106A for your Java programs. The high level concepts are the same: you use the editor to write your code, and you use a combination of menu items and shortcut keys to compile and run your programs. In particular:

- If you want to compile and run your code, you should select **Start Debugging** from under the **Debug** menu, or you should press **F5** to do the same thing. If your code needs to be compiled, VS2008 will do this for you. Provided your code is syntactically correct and well formed, your program will execute. If there are syntax errors, the project will list out the errors it found at the bottom of the window like so:
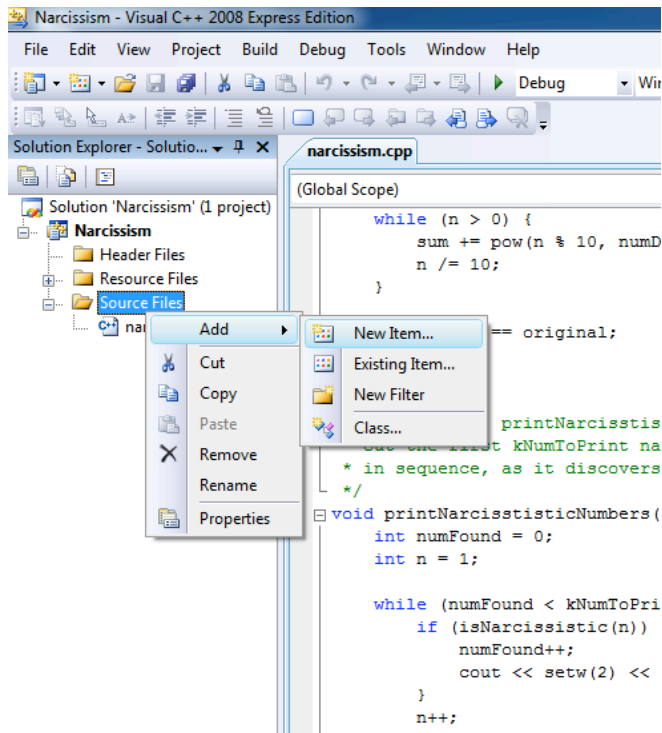
If you don't see the **Error List** window appear, select **View** -> **Other Windows** -> **Error List**. If you double click on one of these messages, then you can jump straight to the file and line where the error is located.

- If you just want to confirm that your code compiles, but you're not interested in running it just yet, you can select **Build Solution** from until the **Build** menu, or you can press **F7** if shortcuts are your thing.
- If you want to create a new file and add it to the project, right click on the project name in the window in the right hand side (Solution Explorer) and select **Add** -> **New Item**. Note that in the screenshot above there are 2 files with **"assn-0-narcissism-pc"** in them, they are:

    o *Solution "Narcissism"*
    o *Narcissism*

The one you want to right click on is "Narcissism". You can add new files directly to the **Source Files** filter (for **.cpp** files) or the **Header Files** filter (for **.h** files), as illustrated in the following screenshot.

Either way, you'll be led through a wizard that helps you name and place your new file. You can also go to **File** -> **New** -> **File** (or hit **ctrl+N**) to create a new file, but if you create a new file this way then you need to add it to the project manually.

- If you want to add an existing file to the project, right click on the project name in the Solution Explorer or on the **Source Files** or **Header Files** filters, and go to **Add** -> **Existing Item**.

These commands should be enough to make your way around VS2008. Of course, it helps to know what the program output should be, so try **F5** and confirm that the output for the program looks something like this:

```
Here's a great little program that prints out the first 25
narcissistic numbers.

 1.) 1
 2.) 2
 3.) 3
```

   // condensed to save space

```
20.) 548834
21.) 1741725
22.) 4210818
23.) 9800817
24.) 9926315
25.) 24678050
```