

Cryptography - Initial Setup for VC++ 2005

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Because it is (supposedly) already installed on every computer in the school, we will attempt to standardize on Microsoft Visual C++ 2005. Please use your favorite compiler out of class, but learn how to convert your source code into a VC++ 2005 project.

Select exactly three letters to be your personal code. This is probably your initials. In the document, assume that **xxx** means this three letter code.

Setting up the computer with a crypt directory

To create the `c:\crypt` directory under which we will work, follow these steps:

- (1) Suppose `e:` is the usb drive containing the folder `cryptori`. Copy the folder `e:\cryptori\crypt` to `c:\`. This can be done using My Computer to open the `e:` and `c:` in separate windows, and using drag-and-drop.
- (2) Right click on the desktop to create a new shortcut `c:\crypt\bin\dosshell.bat`.
- (3) Right click on the new icon, and rename it “crypt”.
- (4) Right click on the crypt icon, go to Properties.
 - (a) **Shortcut:** should start in `c:\crypt`.
 - (b) **Shortcut:** change icon to a red circle with a line through it.
 - (c) **Font:** change to Raster 8x12.
 - (d) **Colors:** change to yellow on dark blue.
- (5) Left click on crypt icon to open command line shell; you should see `C:\crypt>`. Type `md xxx` to make the folder where projects will go.

Setting up Visual C++ 2005

To get Visual C++ to be a little more friendly, perform these steps:

- (1) Make icon for Visual C++ 2005 by copying it from the **start** list and pasting it on the desktop.
- (2) Go into VC++ by clicking this new icon to change settings.
 - (a) **Tools\Options\Environment\Startup:** change “at startup” to “show empty project”. Turn off downloads.
 - (b) **View\Toolbars:** check Build and Debug to add these toolbars. You will want to dock these onto the the same line, just below the already docked standard toolbar.
 - (c) Close all internal windows.
 - (d) Close and reopen VC++ to see that all of these changes took effect.

Creating a new C console project in Visual C++ 2005

To create a C project named `projname`, proceed as follows:

- (1) **File\New\Project\Visual C++\Win32:** select “Win32 App”. The name should be `projname` and the location should be `c:\crypt\xxx`, where `xxx` is your initials.
- (2) **Project\Properties\Configuration\Linker\General\Output File:** change `$(OutDir)` to `c:\crypt\out`.
- (3) Open source code if it is not already displaying.
 - (a) Change `_tmain` to `main`.
 - (b) Change `_TCHAR` to `char`.

You are now ready to program.

Creating a new C console project in Visual C++ 6.0

In case you have a computer with Visual C++ 6.0 (2000) and not VC++ 2005, you may create a C project named `projname` if you proceed as follows:

- (1) **File\New\Projects\Win32ConsoleApplication:** The name should be `projname` and the location should be `c:\crypt\xxx`, where `xxx` is your initials. Click “OK”, then select “a simple application”, then “Finish”.
- (2) **Project\Settings\Link:** in Output file name, change `Debug` to `c:\crypt\out`.

Using crypt icon to test you program

A DOS shell is a console window in which you can type commands directly to the operating system. Some commands, like `dir` or `cd`, are understood by the shell. For other commands, like `up`, it searches its path for a file called `up.exe`, which contains the machine language code for the command `up`.

The program `DOSSHELL.BAT` for which we created the “crypt” icon starts in the `c:\crypt` directory, with a path to `c:\crypt\bin;c:\crypt\out`. The subdirectory `bin` contains a few command line programs which will help in debugging, and the `out` directory contains the output of your program. Since `out` is in your path, DOS knows to look in that directory for commands you type on the command line. Thus, you can work at the `c:\crypt` level, and still easily access the program you are debugging.

Before entering Visual Studio, double click the crypt icon we made to open a command line console. Then minimize this. Now open Visual Studio, write a console program to be output in `c:\crypt\out`, and compile it. To test it, click on the crypt shell which is minimized on the bottom of your screen; this will open the console, and you can type the name of the program, with parameters, to test it.