

Installing C++
compiler

Wai Khoo

Overview

For Macintosh
Users

Testing Mac C++
Installation

For Windows
Users

Installing MinGW

Installing Cygwin

Setting Up Your
Environment
Variables

Testing Windows
C++ Installation

Recommended Plain
Text Editor: TextPad

Installing C++ compiler for CSc212 Data Structures

Wai Khoo

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Spring 2010

1 Overview

2 For Macintosh Users

- Testing Mac C++ Installation

3 For Windows Users

- Installing MinGW
- Installing Cygwin
- Setting Up Your Environment Variables
- Testing Windows C++ Installation
- Recommended Plain Text Editor: TextPad

Overview

Installing C++
compiler

Wai Khoo

Overview

For Macintosh
Users

Testing Mac C++
Installation

For Windows
Users

Installing MinGW

Installing Cygwin

Setting Up Your
Environment
Variables

Testing Windows
C++ Installation

Recommended Plain
Text Editor: TextPad

Why are we not using Visual Studio, an Integrated Development Environment (IDE)? Here's several reasons:

- Visual Studio is good for LARGE project. Your assignments will only involve several files.
- Visual Studio generates more files than necessary.
- Visual Studio abstracted the way compiler works; using command prompt, you will see how to include header files and link your program. And really learn the syntax of the language.

This tutorial is to guide you through the installation of C++ compiler in your own machine, mainly Windows. Of course, you can always use the department's lab to complete your assignments. If you encounter any problem(s), feel free to contact me.

For Macintosh users [▶ click here](#)

For Windows users [▶ click here](#)

For Macintosh Users

Installing C++
compiler

Wai Khoo

Overview

For Macintosh
Users

Testing Mac C++
Installation

For Windows
Users

Installing MinGW

Installing Cygwin


Setting Up Your
Environment
Variables

Testing Windows
C++ Installation

Recommended Plain
Text Editor: TextPad

The installation should be very simple or you should have already done it when you install the developer kit¹.

- 1 Go to <http://developer.apple.com/Tools/>
- 2 Click on *Download latest xcode*
- 3 Pick the appropriate download item and follow instructions from there.

¹ I am not a Mac user, therefore, I cannot give you detailed instructions. 

Testing Mac C++ Installation

Installing C++
compiler

Wai Khoo

Overview

For Macintosh
Users

Testing Mac C++
Installation

For Windows
Users

Installing MinGW

Installing Cygwin

Setting Up Your
Environment
Variables


Testing Windows
C++ Installation

Recommended Plain
Text Editor: TextPad

- 1 Once you have installed it, you should be able to find the compiler from *Application* → *Utilities* → *Shell*
- 2 In the shell, type 'gcc' or 'g++', without the quotes.
- 3 If your installation is successful, you should see either “gcc: no input files” or “g++: no input files”.
- 4 If you see “command not found” or any other weirds return message, then you must have done something wrong in the installation process.

If you have successfully install C++ compiler on your Mac machine, you are ready to go. Just use any plain text editor to write your code in.

If you have failed the installation process, please try again². If the problem persists, please send me an email with the *exact* description of the problem.

²You can check the Apple website for some troubleshoots 

For Windows Users

Installing C++
compiler

Wai Khoo

Overview

For Macintosh
Users

Testing Mac C++
Installation

For Windows
Users

Installing MinGW

Installing Cygwin

Setting Up Your
Environment
Variables

Testing Windows
C++ Installation

Recommended Plain
Text Editor: TextPad

For Windows, you have two options:

- Installing just the C++ compiler called MinGW [▶ click here](#)
- Installing a Linux emulator called cygwin [▶ click here](#)

Of course, you're free to install both options. Cygwin is a much more powerful tool and contains lots of utilities; check its website for more detail. MinGW is sufficient for this class and will work with your built-in Windows command prompt.

Installing MinGW

Installing C++
compiler

Wai Khoo

Overview

For Macintosh
Users

Testing Mac C++
Installation

For Windows
Users

Installing MinGW

Installing Cygwin
Setting Up Your
Environment
Variables

Testing Windows
C++ Installation

Recommended Plain
Text Editor: TextPad

- 1 Go to `http://www.mingw.org/`
- 2 Click on *Downloads* on the left panel. This should bring you to the Source Forge page.
- 3 Scroll down a bit and you will see *Automated MinGW Installer*
- 4 Expand *MinGW 5.1.6* and you will see *MinGW-5.1.6.exe* or look for the newest version.
- 5 Download the executable and run it. Follow the instructions from there.

Once you're done installing, [click here](#) to start configuring your environment variables so that your compiler will work properly

Installing Cygwin

Installing C++
compiler

Wai Khoo

Overview

For Macintosh
Users

Testing Mac C++
Installation

For Windows
Users

Installing MinGW

Installing Cygwin

Setting Up Your
Environment
Variables

Testing Windows
C++ Installation

Recommended Plain
Text Editor: TextPad

Note that cygwin will take A LONG time to download and install since it's a very large file (it's emulating a Linux OS, you know!). I usually start my installation at night, just before bedtime, and let the whole installation run over night. It should be done by the time you wake up.

The instructions are also very straight-forward and the default settings will be fine.

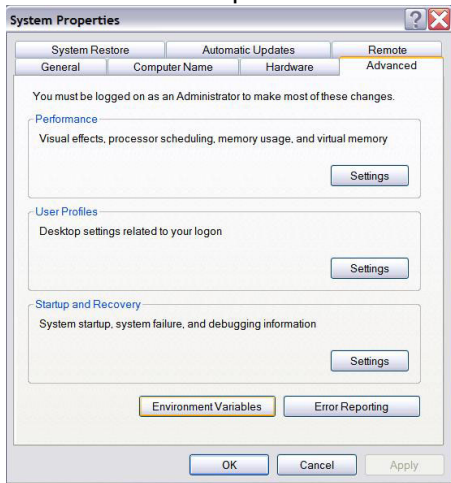
- 1 Go to `http://www.cygwin.com/`
- 2 In the middle of the page, you will see an icon labeled *Install or update now!*, click on it.
- 3 It will download a file called *setup.exe*, save it.
- 4 Run *setup.exe* and follow the instructions from there. Remember, the default settings are fine.

Setting Up Your Environment Variables

Once you're done installing MinGW and/or cygwin, it's time to configure your environment variables, so that your compiler will work properly.

- 1 Right-click on *My Computer* and go to *Properties*. Click and the dialog box will pop up. [▶ see figure](#)
- 2 Click on the *Advanced* tab on the top.
- 3 Click on the *Environment Variables* on the bottom (just above the default ok/cancel/apply buttons) [▶ see figure](#)
- 4 Another dialog box will pop up with the top part labeled *User variables* and the bottom part labeled *System variables*. We are interested in the system variables.
- 5 In the system variables box, find the variable named *PATH*, highlight it, and click on *Edit* [▶ see figure](#)
- 6 Be careful **NOT** to delete anything. In the *variable value* field, go to the end of the string and add a semicolon (;).
- 7 Find out where is the bin folder of MinGW and/or cygwin that you just installed. By default, it's usually C:\MinGW\bin or C:\cygwin\bin
- 8 Append these path(s) to the end of the *variable value* field. If you're appending more than one, be sure to add semicolon in between paths. [▶ see figure](#)
- 9 Test your installation [▶ Test](#)

Step 3



► Back

Installing C++
compiler

Wai Khoo

Overview

For Macintosh
Users

Testing Mac C++
Installation

For Windows
Users

Installing MinGW
Installing Cygwin

Setting Up Your
Environment
Variables

Testing Windows
C++ Installation

Recommended Plain
Text Editor: TextPad

Installing C++ compiler

Wai Khoo

Overview

For Macintosh Users

Testing Mac C++ Installation

For Windows Users

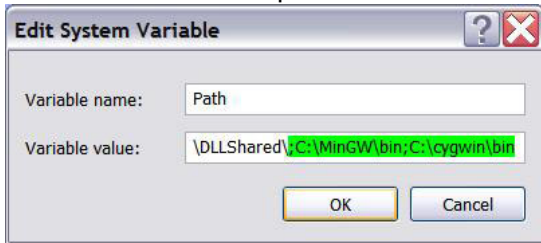
Installing MinGW
Installing Cygwin

Setting Up Your Environment Variables

Testing Windows C++ Installation

Recommended Plain Text Editor: TextPad

Step 8



▶ Back

Testing Windows C++ Installation

Installing C++
compiler

Wai Khoo

Overview

For Macintosh
Users

Testing Mac C++
Installation

For Windows
Users

Installing MinGW

Installing Cygwin

Setting Up Your
Environment
Variables

Testing Windows
C++ Installation

Recommended Plain
Text Editor: TextPad

- 1 Once you have installed it, open up a Windows command prompt or run the cygwin shell.
- 2 In the prompt/shell, type 'gcc' or 'g++', without the quotes.
- 3 If your installation is successful, you should see either "gcc: no input files" or "g++: no input files"
- 4 If you see "command not found" or any other weird return message, then you must have done something wrong in the installation process

If you have successfully install C++ compiler on your Windows machine, you are ready to go. The next slide talks about text editor, it's optional but recommended.

If you have failed the installation process, please try again. If the problem persists, please send me an email with the *exact* description of the problem.

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Installing C++
compiler

Wai Khoo

Overview

For Macintosh
Users

Testing Mac C++
Installation

For Windows
Users

Installing MinGW

Installing Cygwin

Setting Up Your
Environment
Variables

Testing Windows
C++ Installation

Recommended Plain
Text Editor: TextPad

Of course, you can use any plain text editor that Windows has (e.g. Notepad and WordPad). However, TextPad is more powerful and designed for programmers. You will really learn how to program/debug properly using this, instead of doing it the lazy way, using Visual Studio.

Here's the website to download TextPad:

<http://www.textpad.com/>

For this, you do not have to configure anything, just download, install and run.