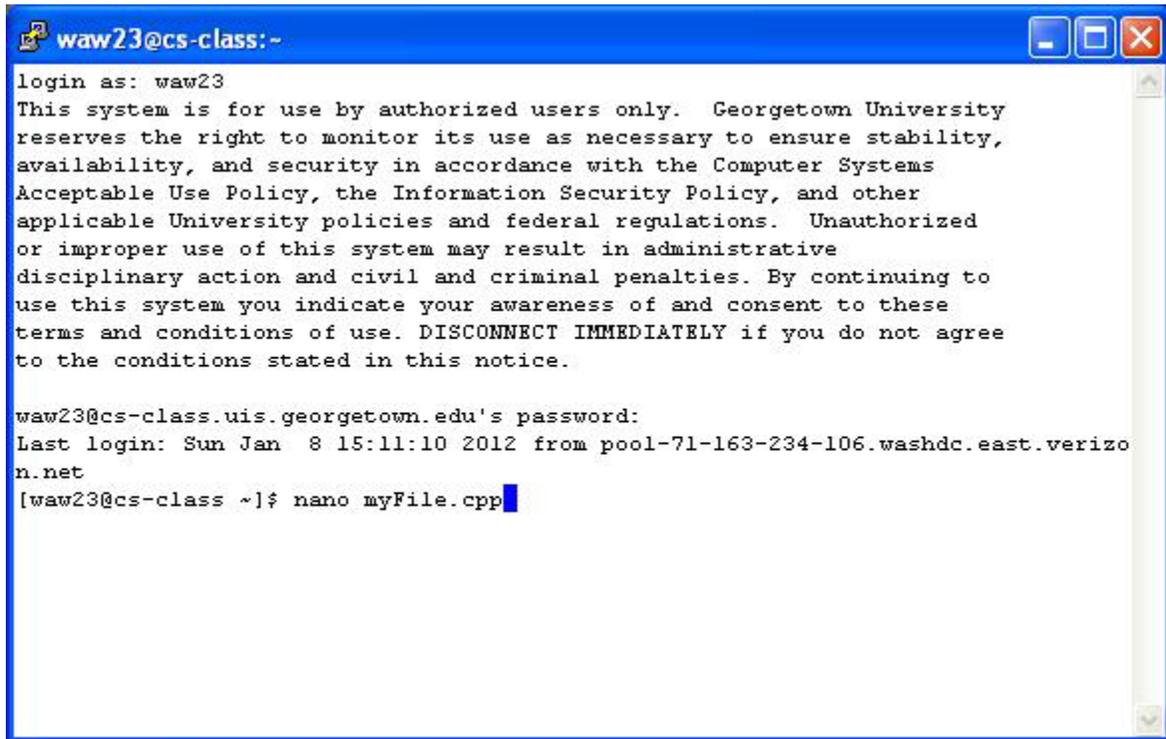


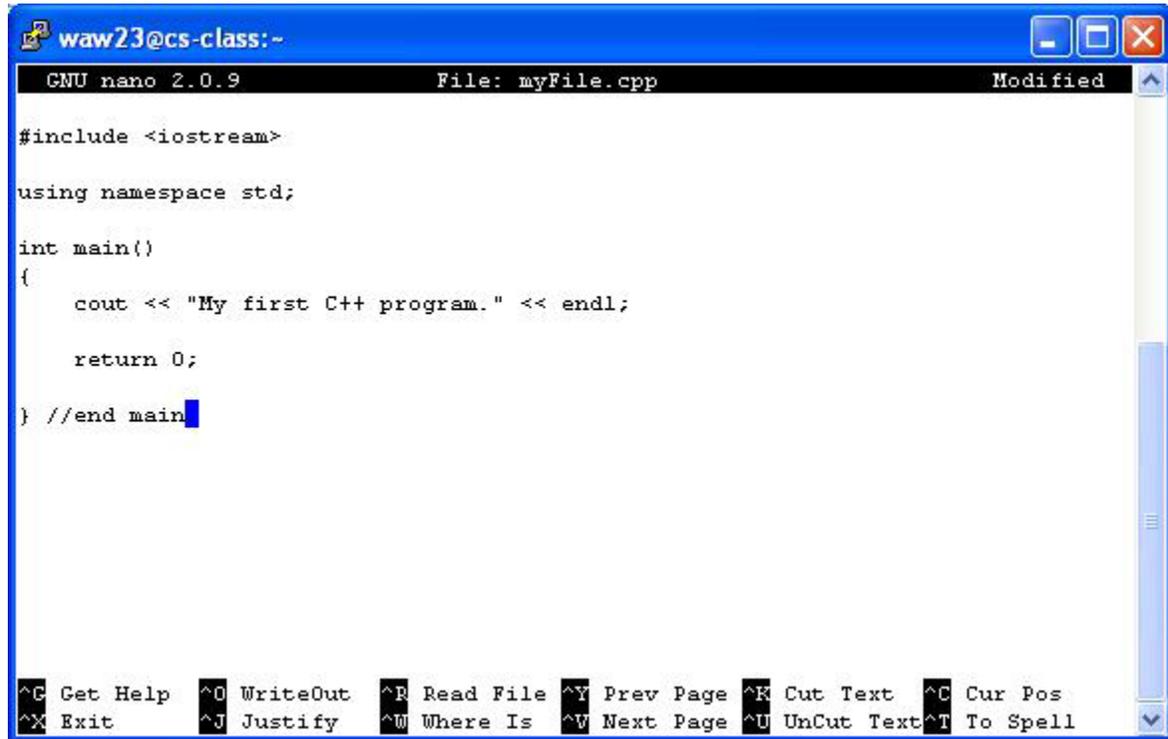
This document demonstrates how to edit and compile a simple C++ program on the **cs-class.uis.georgetown.edu** server. There are several editors available that you can use, this example uses the text editor **nano**.

Open the **nano** editor by typing the word **nano** followed by the name of the file you want to create or edit.

A terminal window titled 'waw23@cs-class:~' with standard window controls. The terminal output shows a login sequence: 'login as: waw23', a system notice about Georgetown University's policies, a password prompt, and a login log entry. The user then enters the command 'nano myFile.cpp' at the prompt. The cursor is positioned at the end of the command.

```
waw23@cs-class:~  
login as: waw23  
This system is for use by authorized users only. Georgetown University  
reserves the right to monitor its use as necessary to ensure stability,  
availability, and security in accordance with the Computer Systems  
Acceptable Use Policy, the Information Security Policy, and other  
applicable University policies and federal regulations. Unauthorized  
or improper use of this system may result in administrative  
disciplinary action and civil and criminal penalties. By continuing to  
use this system you indicate your awareness of and consent to these  
terms and conditions of use. DISCONNECT IMMEDIATELY if you do not agree  
to the conditions stated in this notice.  
  
waw23@cs-class.uis.georgetown.edu's password:  
Last login: Sun Jan  8 15:11:10 2012 from pool-71-163-234-106.washdc.verizo  
n.net  
[waw23@cs-class ~]$ nano myFile.cpp
```

Enter the text much the same as you would in Notepad or Microsoft Word.



The image shows a terminal window titled "waw23@cs-class:-" running the GNU nano 2.0.9 text editor. The editor is editing a file named "myFile.cpp". The code in the file is a simple C++ program that prints "My first C++ program." to the console. The code is as follows:

```
#include <iostream>

using namespace std;

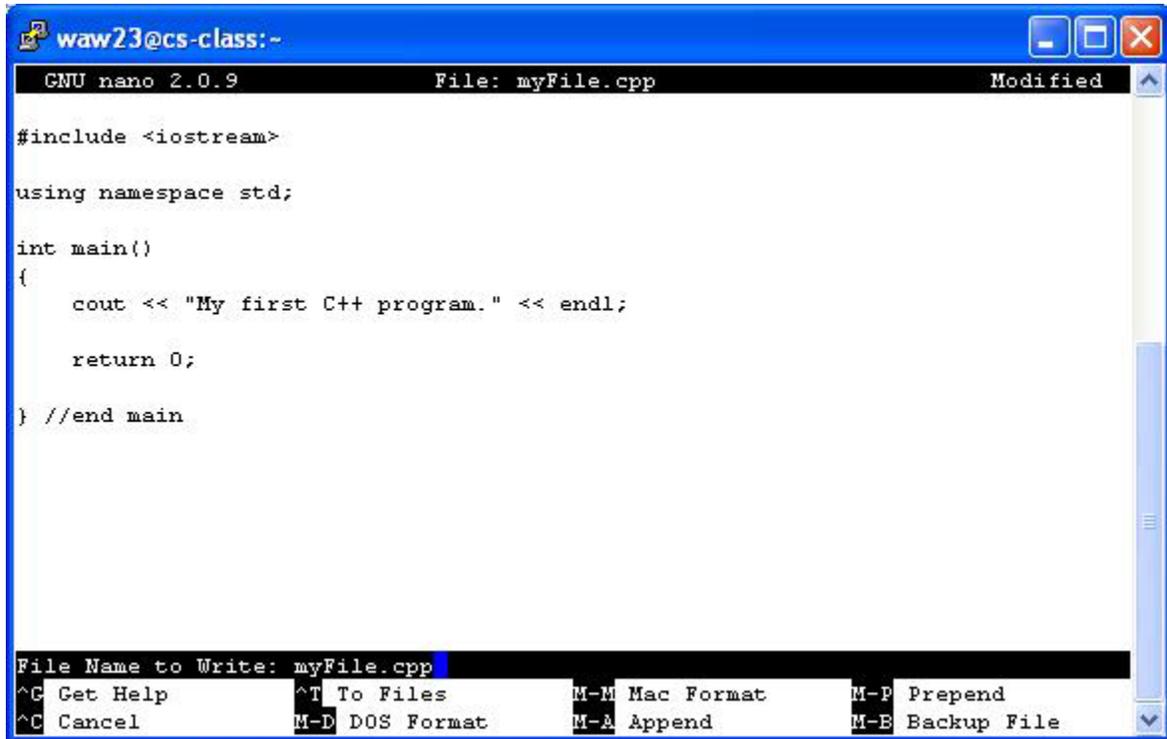
int main()
{
    cout << "My first C++ program." << endl;

    return 0;
} //end main
```

The bottom of the window displays a list of keyboard shortcuts for the nano editor:

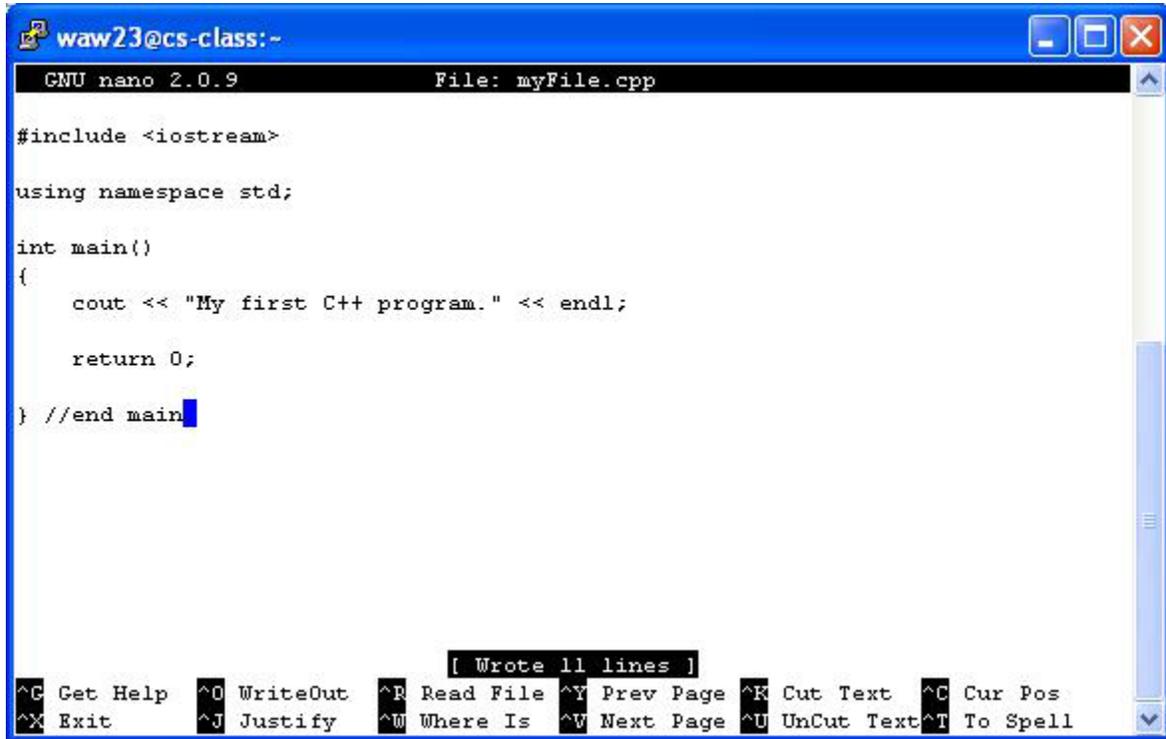
```
^G Get Help    ^O WriteOut   ^R Read File  ^Y Prev Page  ^K Cut Text   ^C Cur Pos
^X Exit        ^J Justify    ^W Where Is   ^V Next Page  ^U UnCut Text ^T To Spell
```

Common **nano** commands are listed at the bottom of the screen. To save the file press **^O**, that is press the **Ctrl** key and the letter **O** at the same time. **nano** prompts to confirm the filename at the bottom of the screen prior to the command list. Press Enter to confirm the file name and save.



```
waw23@cs-class:~  
GNU nano 2.0.9 File: myFile.cpp Modified  
#include <iostream>  
using namespace std;  
int main()  
{  
    cout << "My first C++ program." << endl;  
    return 0;  
} //end main  
File Name to Write: myFile.cpp  
^G Get Help      ^T To Files      M-M Mac Format   M-P Prepend  
^C Cancel        M-D DOS Format   M-A Append      M-B Backup File
```

nano will display the number of lines written to the file. When you are finished editing press **^X** to exit the **nano** editor. (Don't forget to press **^O** again to save any edits prior to exiting)

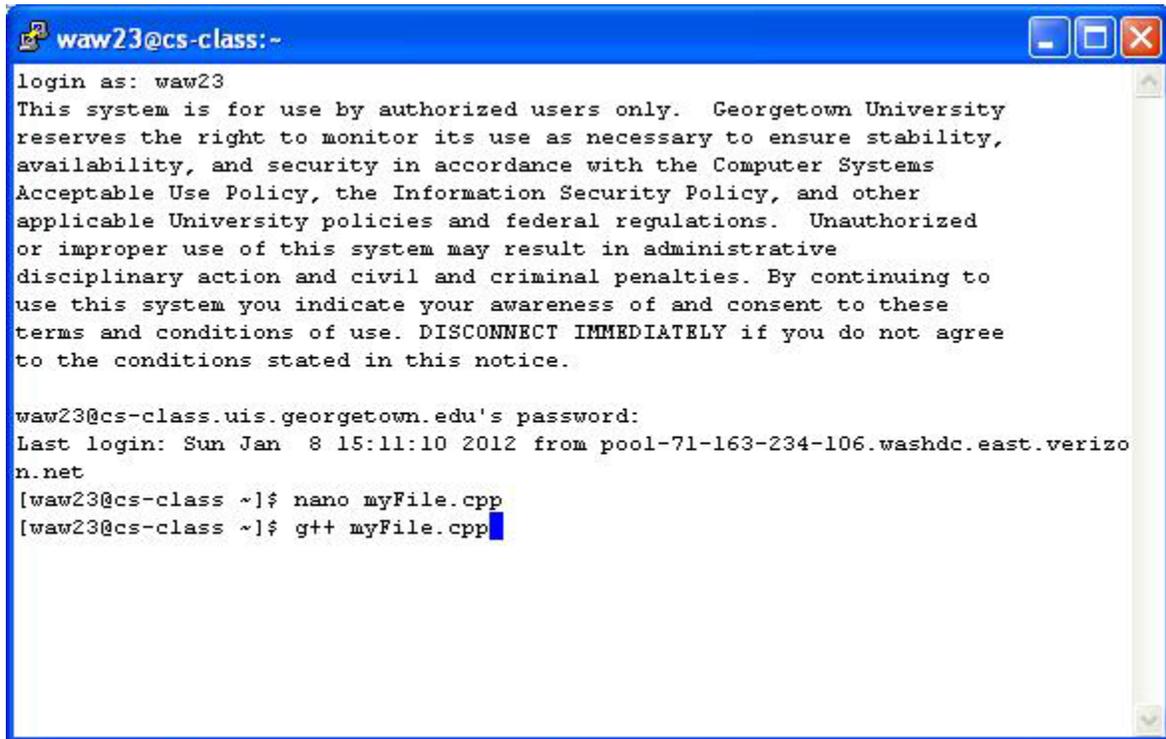


```
waw23@cs-class:~  
GNU nano 2.0.9 File: myFile.cpp  
  
#include <iostream>  
  
using namespace std;  
  
int main()  
{  
    cout << "My first C++ program." << endl;  
  
    return 0;  
} //end main
```

[Wrote 11 lines]

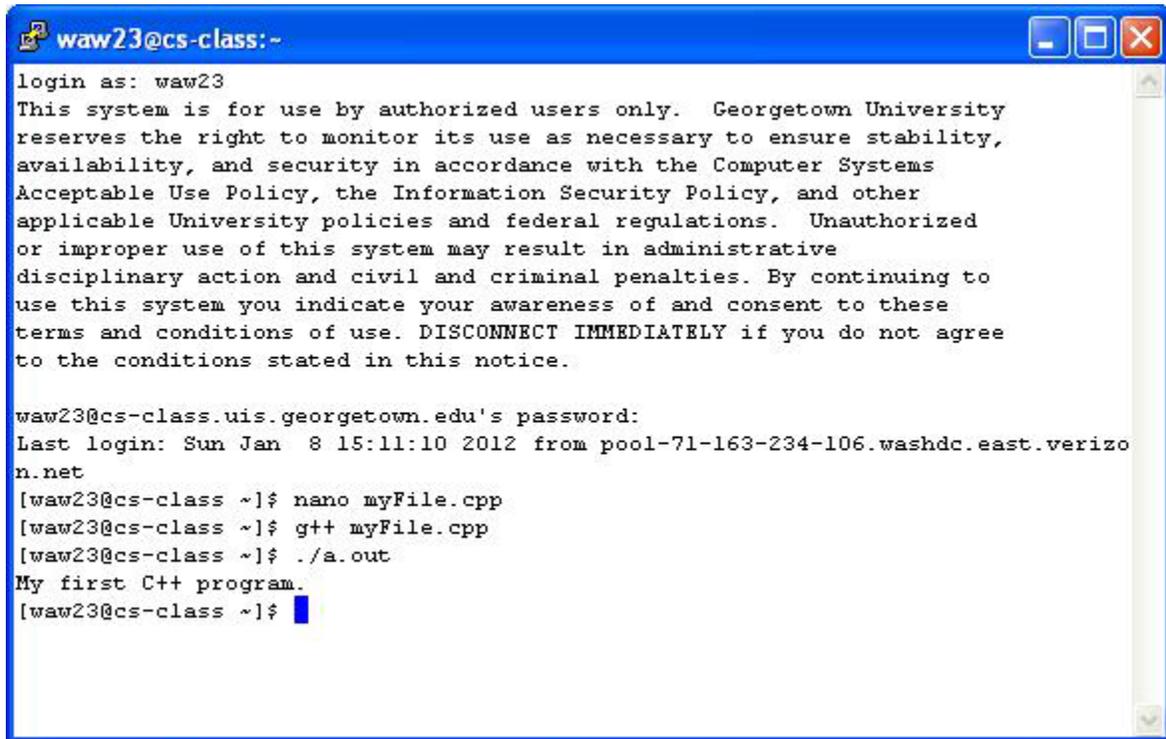
^G Get Help	^O WriteOut	^R Read File	^Y Prev Page	^K Cut Text	^C Cur Pos
^X Exit	^J Justify	^W Where Is	^W Next Page	^U UnCut Text	^T To Spell

To compile your C++ program, enter the command `g++` followed by the name of the source code file (e.g. `g++ myFile.cpp`).

A terminal window titled "waw23@cs-class:~" with standard window controls. The terminal displays a login sequence for user "waw23", followed by a system notice from Georgetown University regarding acceptable use policies. After the notice, the user's password is prompted, and the last login information is shown. The user then enters the command "nano myFile.cpp" and subsequently "g++ myFile.cpp", with the cursor positioned at the end of the second command.

```
waw23@cs-class:~  
login as: waw23  
This system is for use by authorized users only. Georgetown University  
reserves the right to monitor its use as necessary to ensure stability,  
availability, and security in accordance with the Computer Systems  
Acceptable Use Policy, the Information Security Policy, and other  
applicable University policies and federal regulations. Unauthorized  
or improper use of this system may result in administrative  
disciplinary action and civil and criminal penalties. By continuing to  
use this system you indicate your awareness of and consent to these  
terms and conditions of use. DISCONNECT IMMEDIATELY if you do not agree  
to the conditions stated in this notice.  
  
waw23@cs-class.uis.georgetown.edu's password:  
Last login: Sun Jan  8 15:11:10 2012 from pool-71-163-234-106.washdc.east.verizo  
n.net  
[waw23@cs-class ~]$ nano myFile.cpp  
[waw23@cs-class ~]$ g++ myFile.cpp
```

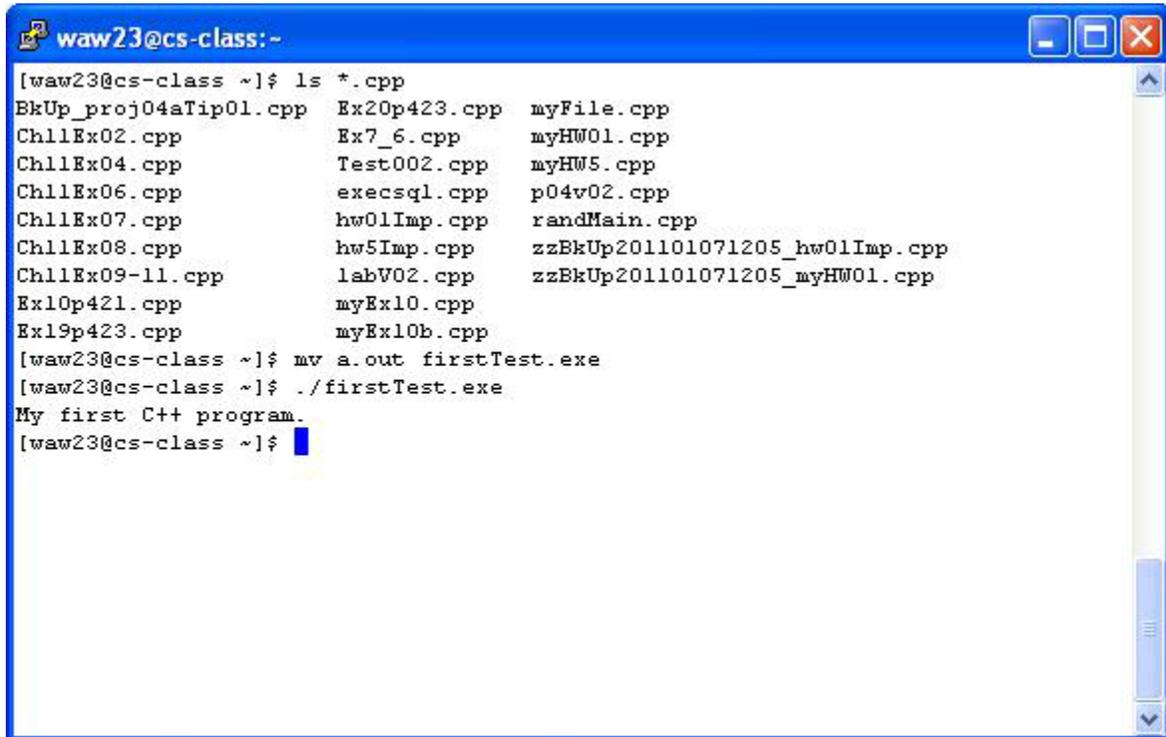
By default, the C++ compiler will name the executable file **a.out** (we will see how to change this later). To run the executable file type **./a.out**.

A terminal window titled "waw23@cs-class:~" with standard window controls. The terminal output shows a login sequence for user "waw23", followed by a system notice from Georgetown University. The user then enters their password, and the terminal shows the last login time as "Sun Jan 8 15:11:10 2012". The user then runs the commands "nano myFile.cpp", "g++ myFile.cpp", and "./a.out". The output of the program is "My first C++ program." followed by a prompt character.

```
waw23@cs-class:~  
login as: waw23  
This system is for use by authorized users only. Georgetown University  
reserves the right to monitor its use as necessary to ensure stability,  
availability, and security in accordance with the Computer Systems  
Acceptable Use Policy, the Information Security Policy, and other  
applicable University policies and federal regulations. Unauthorized  
or improper use of this system may result in administrative  
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terms and conditions of use. DISCONNECT IMMEDIATELY if you do not agree  
to the conditions stated in this notice.  
  
waw23@cs-class.uis.georgetown.edu's password:  
Last login: Sun Jan 8 15:11:10 2012 from pool-71-163-234-106.washdc.east.verizo  
n.net  
[waw23@cs-class ~]$ nano myFile.cpp  
[waw23@cs-class ~]$ g++ myFile.cpp  
[waw23@cs-class ~]$ ./a.out  
My first C++ program.  
[waw23@cs-class ~]$
```

Some useful commands:

- Type `ls` to list the files saved to your account.
- Type `mv <existing file name> <new file name>` to rename an existing file.
- `mv a.out firstTest.exe` renames the default executable to a new name.
- `./firstTest.exe` runs the newly named file



```
waw23@cs-class: ~  
[waw23@cs-class ~]$ ls *.cpp  
BkUp_proj04aTip01.cpp  Ex20p423.cpp  myFile.cpp  
ChllEx02.cpp           Ex7_6.cpp     myHW01.cpp  
ChllEx04.cpp           Test002.cpp   myHW5.cpp  
ChllEx06.cpp           execsql.cpp   p04v02.cpp  
ChllEx07.cpp           hw01Imp.cpp   randMain.cpp  
ChllEx08.cpp           hw5Imp.cpp    zzBkUp201101071205_hw01Imp.cpp  
ChllEx09-11.cpp        labV02.cpp    zzBkUp201101071205_myHW01.cpp  
Ex10p421.cpp           myEx10.cpp  
Ex19p423.cpp           myEx10b.cpp  
[waw23@cs-class ~]$ mv a.out firstTest.exe  
[waw23@cs-class ~]$ ./firstTest.exe  
My first C++ program.  
[waw23@cs-class ~]$
```

Some more useful commands.

- Type **g++ -o <output file name> <source code file name>** to override the default output file name
- **g++ -o myFile.exe myFile.cpp** recompiles the C++ program and names the executable file **myFile.exe** instead of the default **a.out**
- **./myFile.exe** runs the file

A terminal window titled "waw23@cs-class:~" with standard window controls (minimize, maximize, close) in the top right. The terminal shows the following sequence of commands and output:

```
[waw23@cs-class ~]$ g++ -o myFile.exe myFile.cpp
[waw23@cs-class ~]$ ./myFile.exe
My first C++ program.
[waw23@cs-class ~]$
```

Type **logout** to end your session on **cs-class.uis.georgetown.edu**.

