

Compiling a C++ Program in Linux

The compiler you will be using is the GNU C++ compiler, more commonly called g++.

The following directions assume you have written a program and saved it as `hello.cpp`

And of course you have made no errors in this program.

It further assumes you have opened a terminal window and have navigated to the directory (folder) that contains the `hello.cpp` file.

1. To compile and build the program

At the terminal command prompt, type the following and hit enter:

```
g++ hello.cpp
```

This will produce an executable file named `a.out` in the same folder as `hello.cpp`.

Recall the “current folder” is referenced by a dot slash like so `./`

2. To run the newly created executable

At the terminal command prompt, type the following and hit enter:

```
./a.out
```

Tada! You have now created, compiled, built, and ran your hello program!

Oh, but you don't like the `a.out` name?

There is a way to direct g++ to name the output executable file to be a specific name of your choice.

1. First delete the `a.out` file, so you know nothing funny is going on.

At the terminal command prompt, type the following and hit enter

```
rm a.out
```

Recall *rm* is the linux command to **remove** the specified file.

2. Say you want the executable file name to be: `test`

At the terminal command prompt, type the following and hit enter

```
g++ -o test hello.cpp
```

The `-o` option tells g++ the **output** filename will be `test`.

So you will now find a new executable file named `test` in the same directory as `hello.cpp`

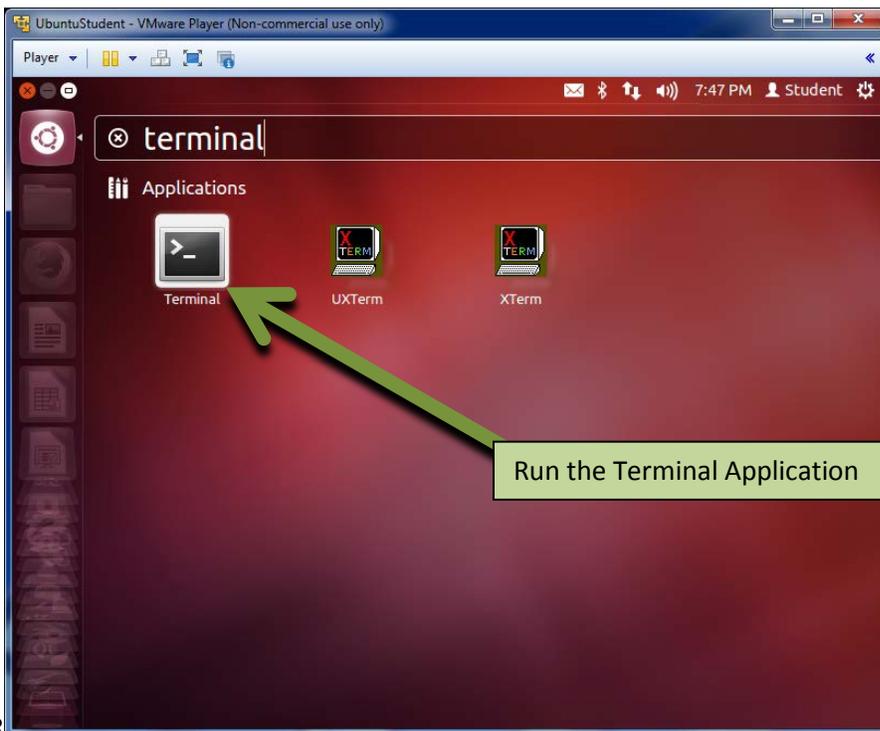
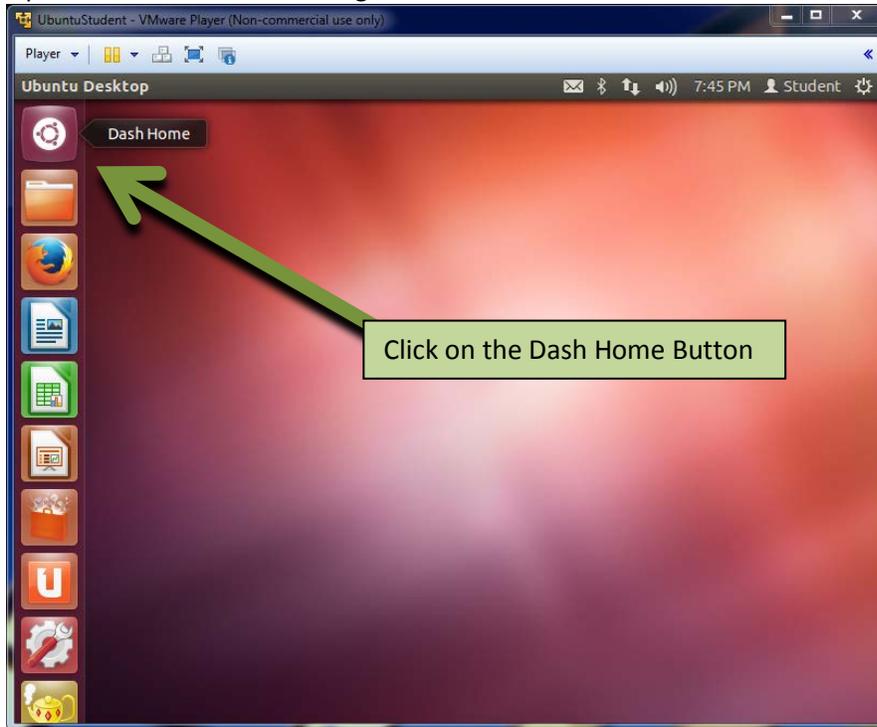
3. To run the newly created executable

At the terminal command prompt, type the following and hit enter:

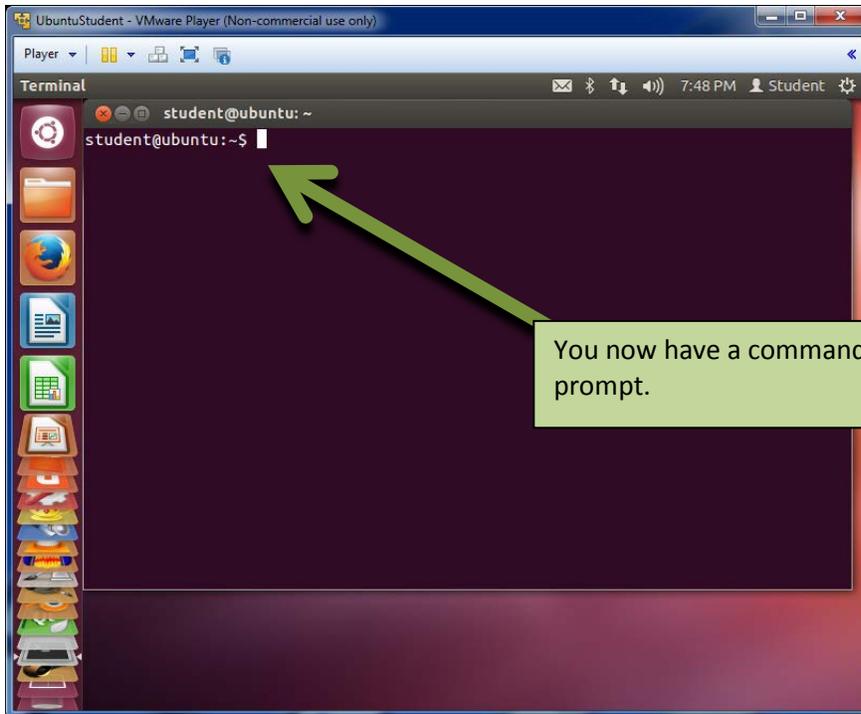
```
./test
```

Bonus Screen Shots

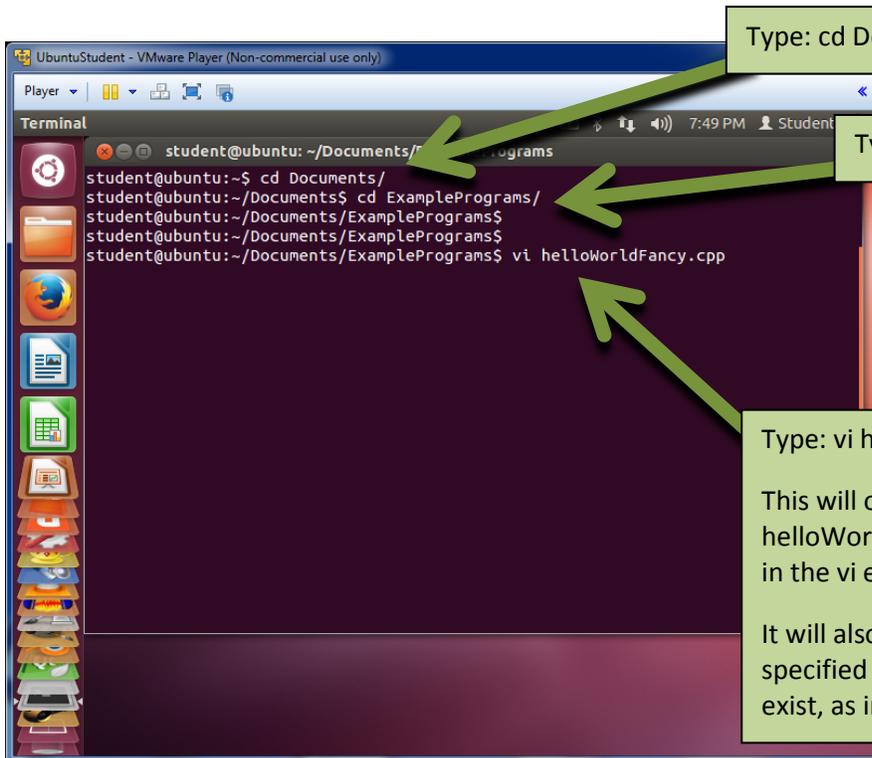
Let's create a fancy hello world program and save it in the file helloWorldFancy.cpp.
Open a terminal window using Dash Home:



R



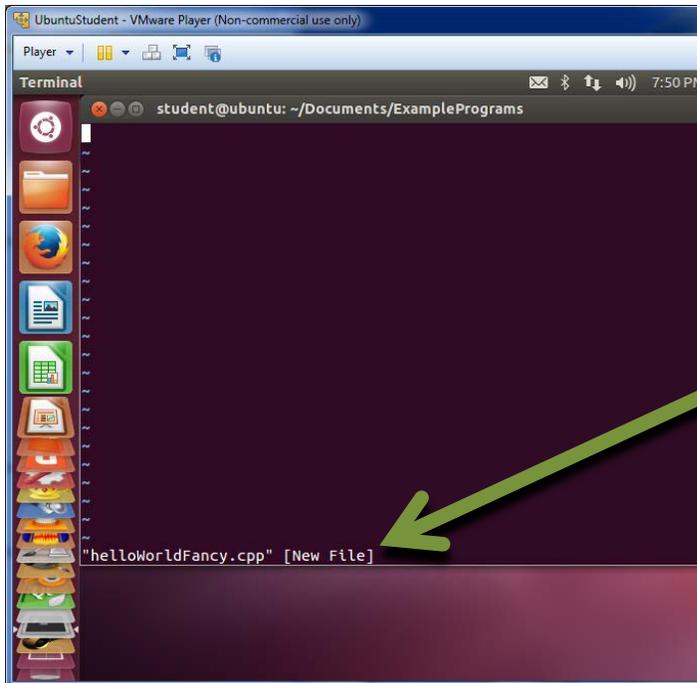
You now have a command line prompt.



Type: cd Documents/

Type: cd ExamplePrograms/

Type: vi helloWorldFancy.cpp
This will open the file named helloWorldFancy.cpp in the vi editor.
It will also create a new file of the name specified if the file does not already exist, as in this case.



This is a blank helloWorldFancy.cpp file newly created and opened in the vi editor.

Type a capital letter O to begin edit mode.

<ESC> will exit edit mode

The sequence :wq
- that's a colon followed by wq and enter -
Will exit the vi editor and SAVE all changes.

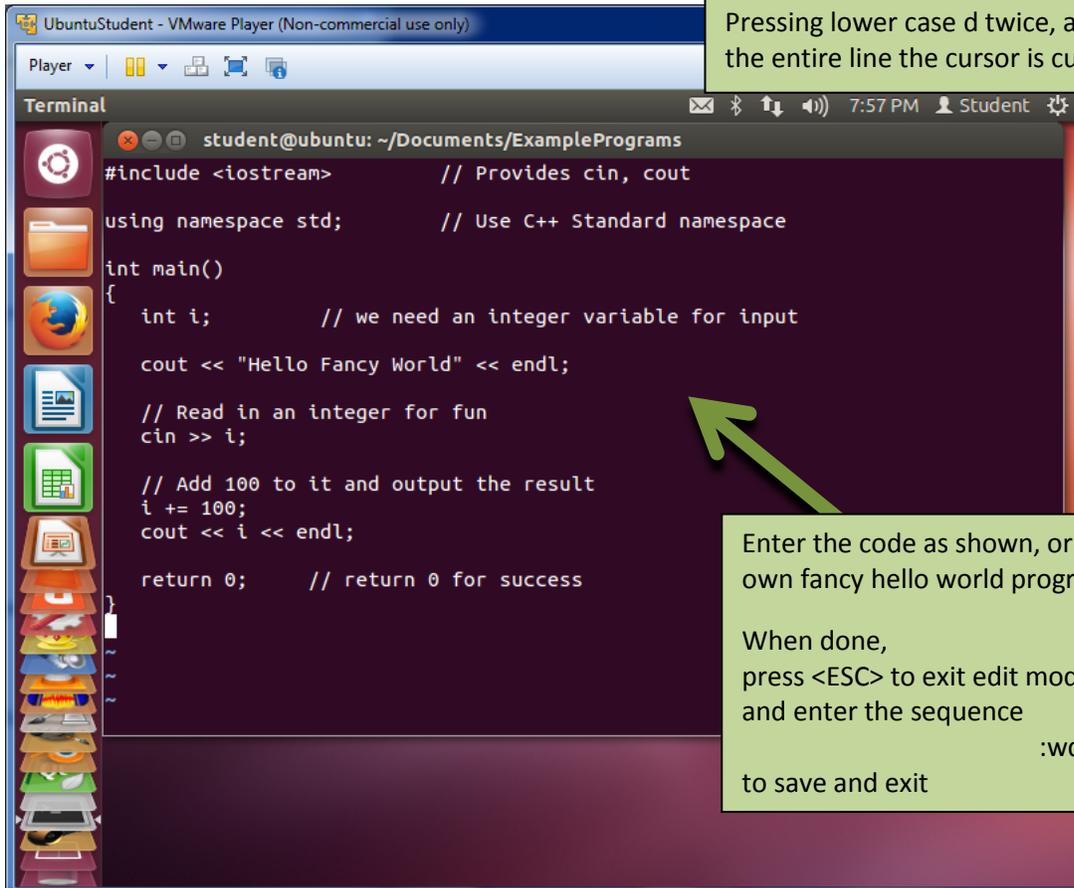
The sequence :q
- that's a colon followed by q and enter -
Will exit the vi editor without saving changes.

Capital letter I will start edit mode, inserting at the cursor location when I was pressed.

Capital letter A will start edit mode, appending after the cursor location when A was pressed.

When NOT in edit mode you can move around with the arrow keys.

When NOT in edit mode a lower case x will delete the character the cursor is currently on. Pressing lower case d twice, as in dd, will delete the entire line the cursor is currently on.



Enter the code as shown, or create your own fancy hello world program.

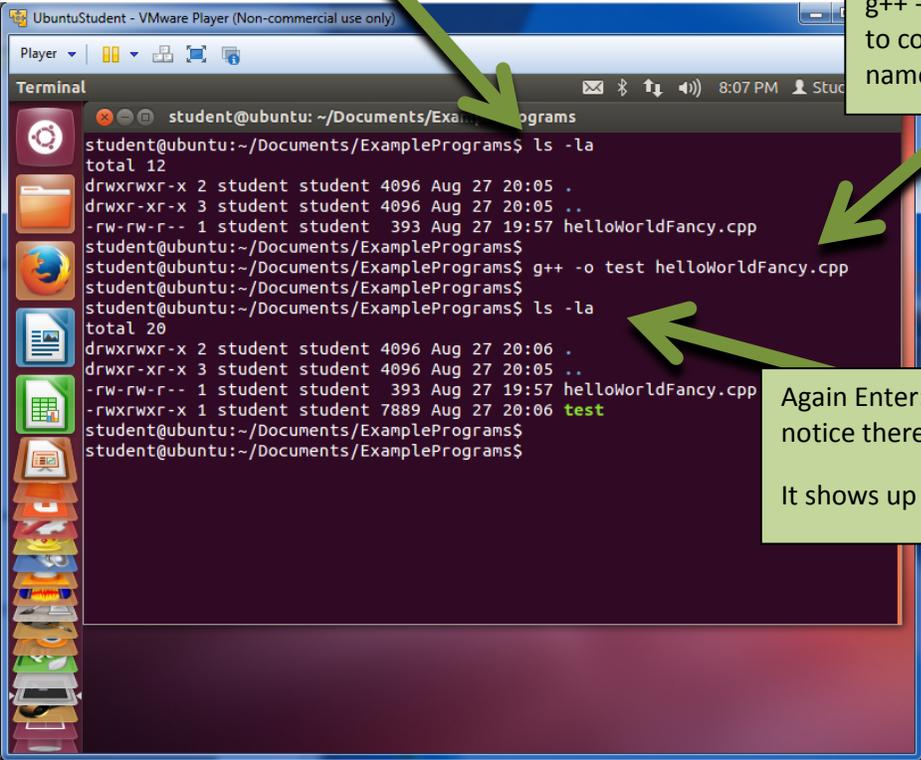
When done,
press <ESC> to exit edit mode
and enter the sequence

:wq

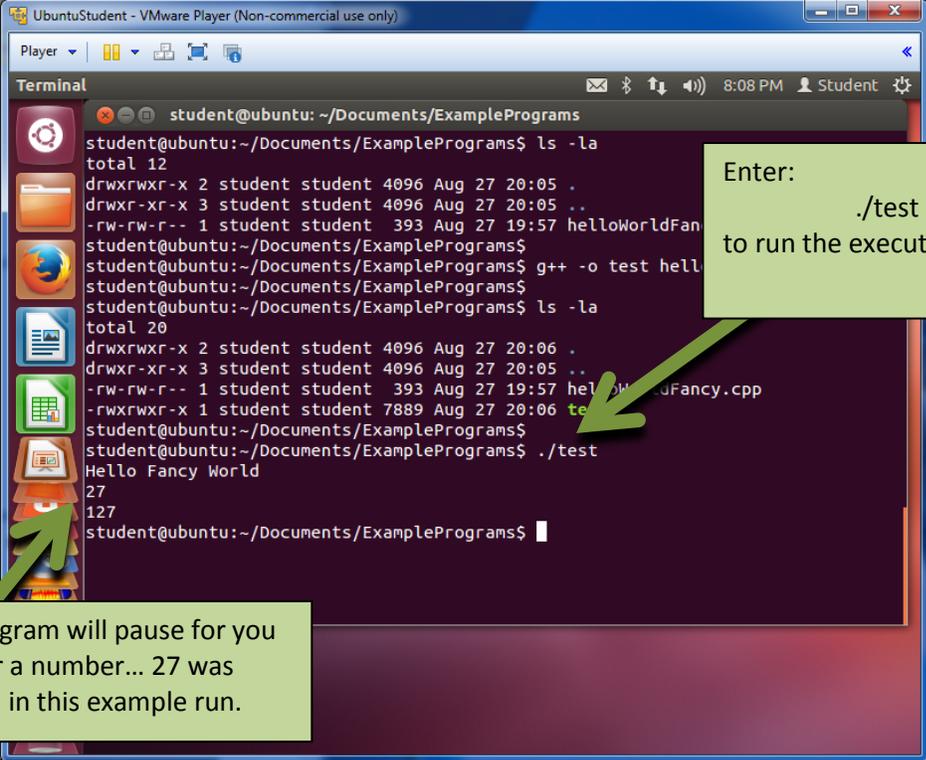
to save and exit

Enter: `ls -la`
to display a list of files with attributes.
Note there is only the *helloWorldFancy.cpp* file in this directory at this point.

Enter
`g++ -o test helloWorldFancy.cpp`
to compile and build the program and name the executable file *test*



Again Enter: `ls -la`
notice there is now a file named *test*
It shows up green because it is an executable



Enter:
`./test`
to run the executable

The program will pause for you to enter a number... 27 was entered in this example run.