Math 4610 Lecture Notes

A Brief Coding/Compilation Example *

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Coding Example for Math 4610 at USU: Creation of a sub-directory.

First start up a terminal to do the work to create a file with code in it. For Cygwin, double click on the Cygwin Icon on your desktop or click on the the icon in the task bar.
A terminal as shown below will appear. Type in the command shown to create a new subfolder in the current directory. In the window, the command that does the work is:

```
mkdir src
```

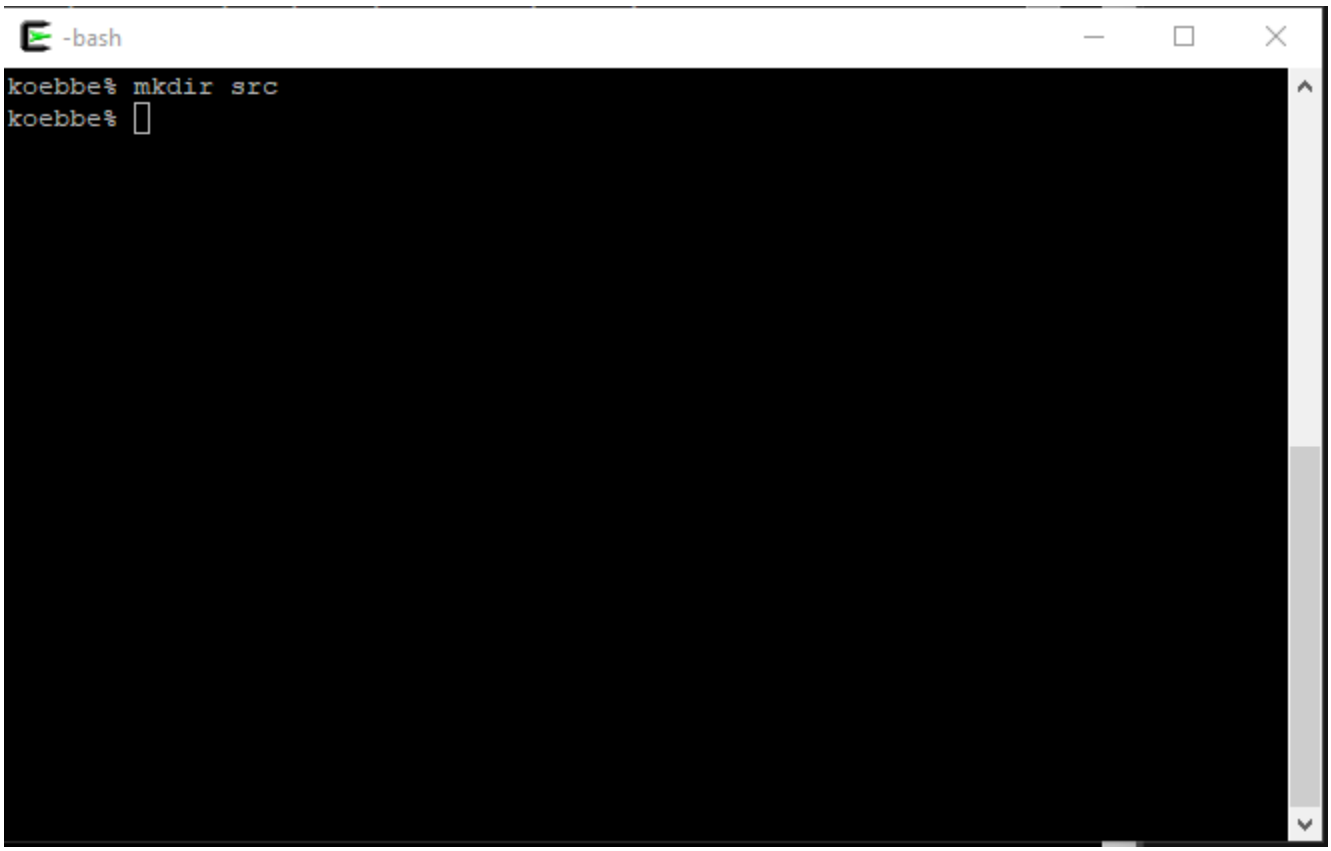

Figure 1: Screenshot taken using **Snip & Sketch**. This is an app on my Windows 10 box

Coding Example for Math 4610 at USU: Change Directory and Edit

To change the directory, use the command

```
cd src
```

Once in the new directory, the next step is to edit a file to implement some sort of action for the computer. So, type:

```
vim hello.c
```

The editor, "vim" is a very standard editor and comes with the installation of Cygwin.

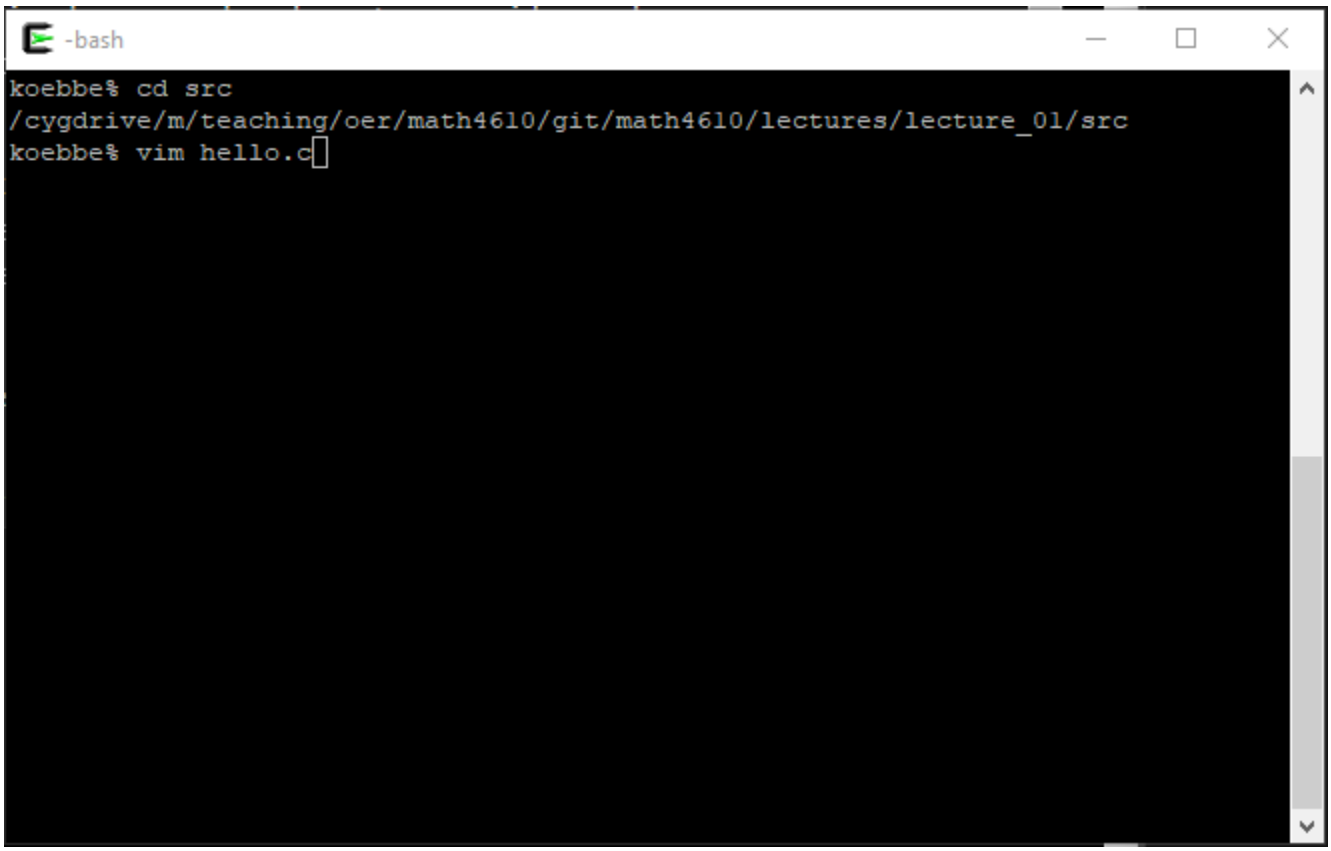

Figure 2: Screenshot taken using **Snip & Sketch**. This is an app on my Windows 10 box

Coding Example for Math 4610 at USU: Typing in a Program in C

The lines in the terminal shown below define a C program for doing a very simple task. Namely, to print the string

```
hello world!
```

to the screen.

Figure 3: Screenshot taken using **Snip & Sketch**. This is an app on my Windows 10 box

Coding Example for Math 4610 at USU: Getting Back to the Command Prompt

To exit the vim session and save the file, type in a colon character ":" followed by x and return. The terminal will revert to a command terminal ready to type in commands.

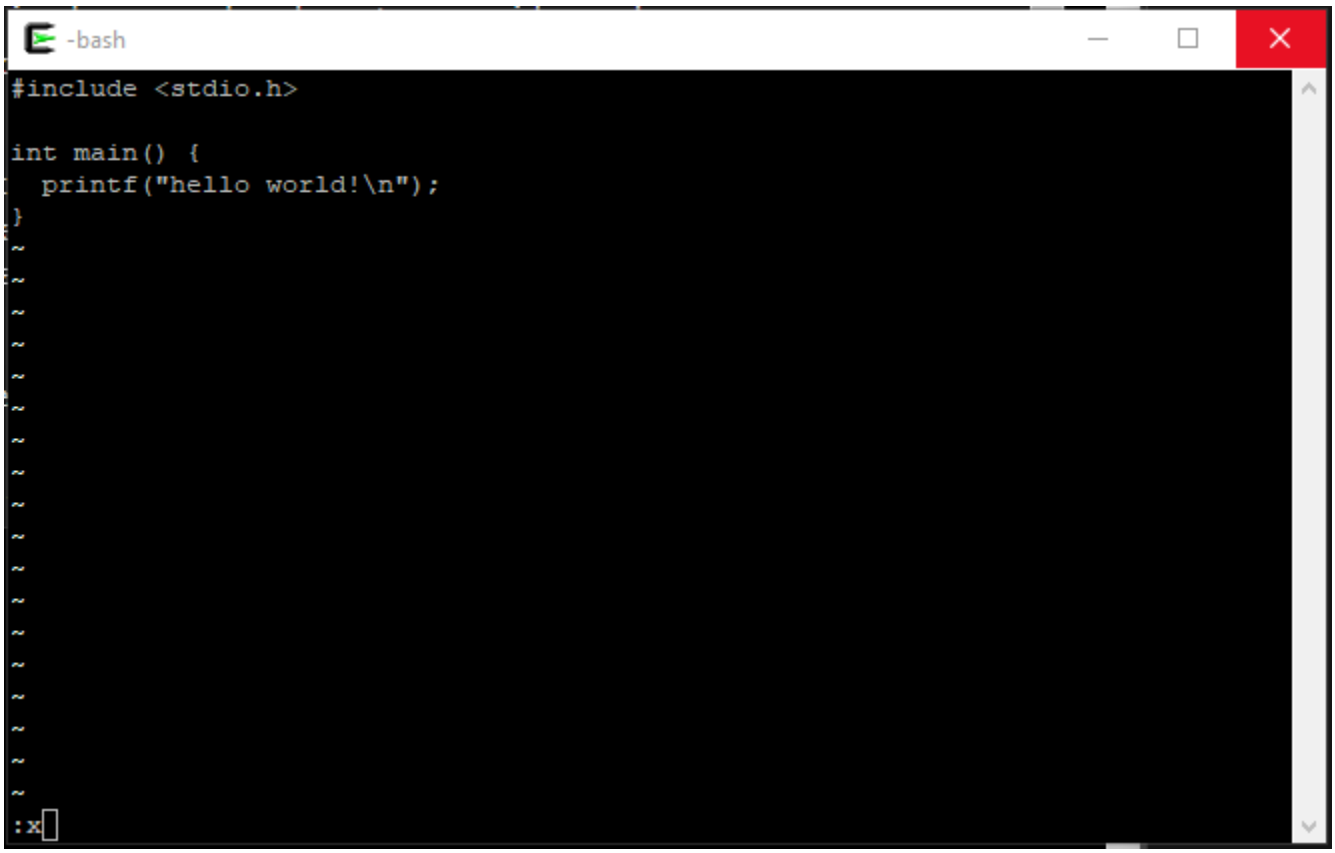

Figure 4: Screenshot taken using **Snip & Sketch**. This is an app on my Windows 10 box

Coding Example for Math 4610 at USU: Compiling the Code

At the command prompt, the first two lines will be as they were to start. The next line is used to compile the code. That is,

```
gcc -o hello hello.c
```

will compile the program and create an executable file for you. The last part below is used to see what is in the directory. The executable file is

```
hello.exe
```

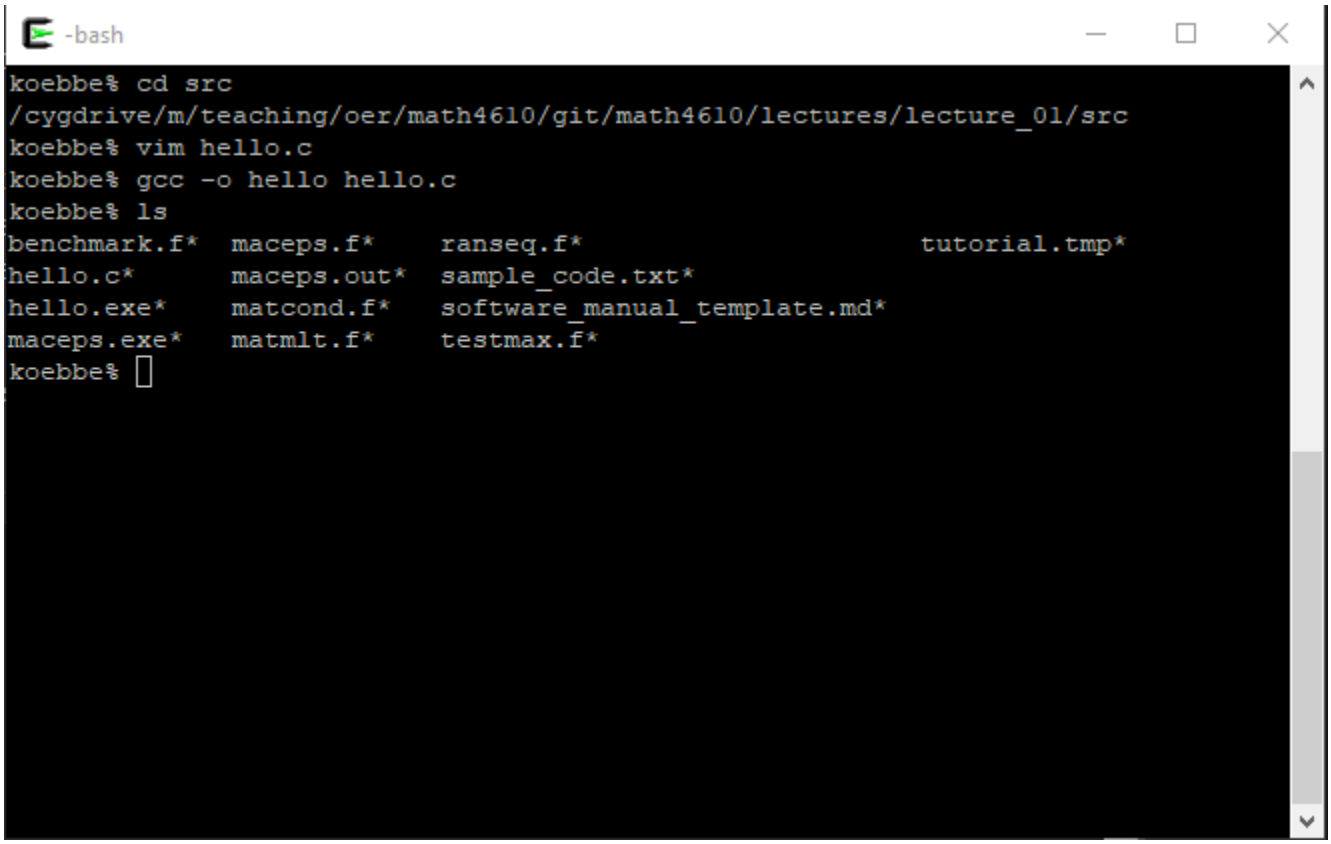

Figure 5: Screenshot taken using **Snip & Sketch**. This is an app on my Windows 10 box

Coding Example for Math 4610 at USU: Final Step - Run the Code

Once we have an executable file, hello.exe, the code can be run as follows.

```
./hello.exe
```

The output from this command will be as shown in the image below. The output is printed on the first line.

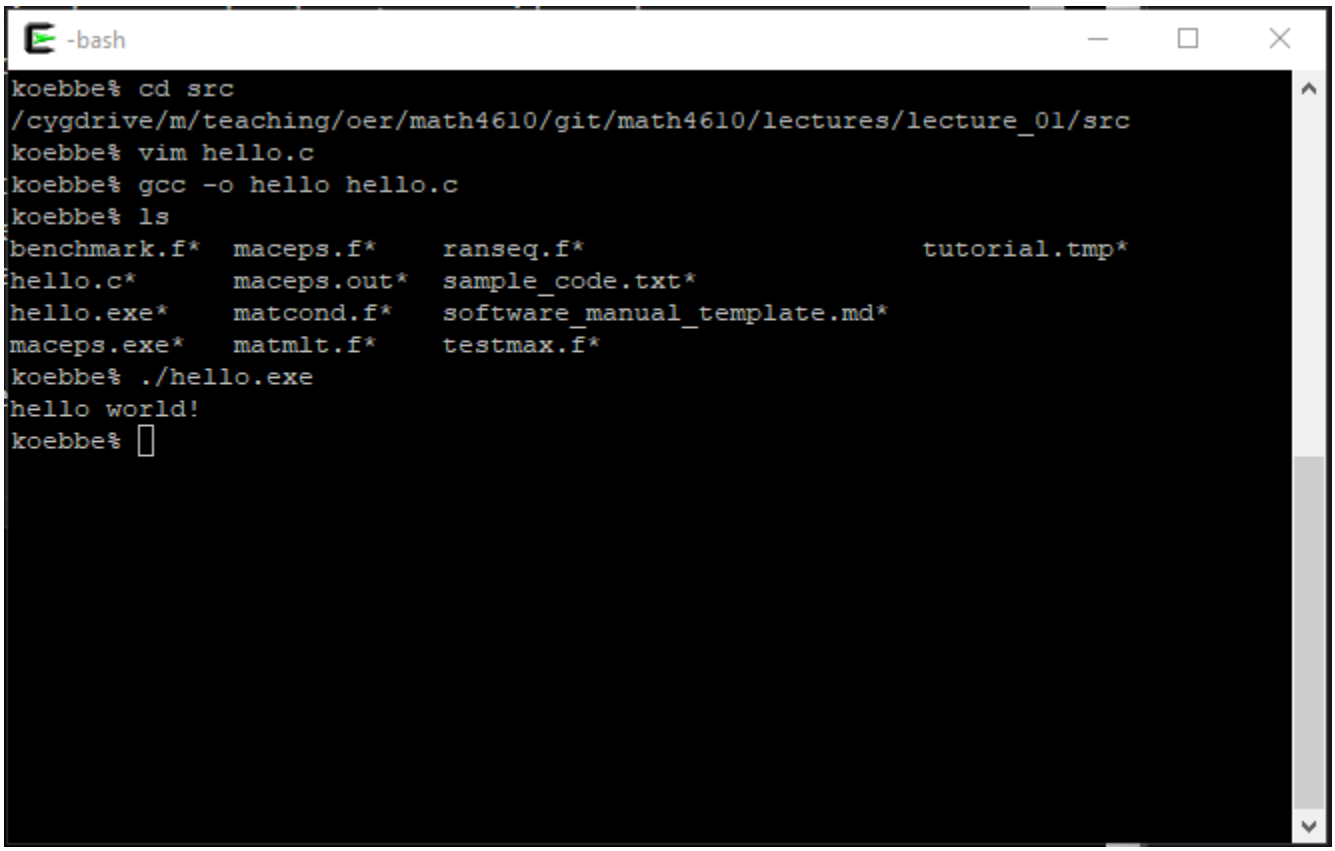

Figure 6: Screenshot taken using **Snip & Sketch**. This is an app on my Windows 10 box