

CIS 130 - Intro to Programming - Fall 2005
Homework Assignment #1

Homework #1 DUE: **BEGINNING** of class, Wednesday, September 7, 2005

- * **Remember: as announced in class, there will be NO CIS 130 LAB on Friday, Sept. 2nd/Monday Sept. 5th due to the Monday Labor Day Holiday.** (HSU does have classes on Friday Sept. 2nd! Just the CIS 130 Friday lab is being cancelled, to keep the two labs "even".)

HOMEWORK #1

1. Follow these steps to obtain and set up a copy of **expr_play** in your directory:

- a. Use ssh to connect to cs-server, and log on to your cs-server account (remember to use your NHW 244 password).
- b. While in your home directory (where you are when you first log in), do the following commands, all at the cs-server prompt (explanation is in Times New Roman font, commands you are to type are in Courier New):

Try to create a directory named **bin** --- if this fails, you probably simply already have one:

```
mkdir bin
```

Copy **expr_play** from my account into your **bin** directory:

```
cp ~st10/bin/expr_play bin
```

Make your new copy of **expr_play** executable:

```
chmod 700 bin/expr_play
```

- c. This is the only tricky part: making a slight change to one of the "invisible" files so that **expr_play** can be found in any directory that you might be working in. **.bashrc** is a file of UNIX shell commands that is run every time you open up a new shell.

Type the following command at the cs-server prompt (while still in your home directory) to open this particular invisible file, **.bashrc** (Be careful to type the period as the first character.)

```
pico .bashrc
```

You are now within pico. Use the down-arrow to go to the bottom of the file **.bashrc**. You do not want to remove anything that is already there --- you simply want to add a line to the bottom.

At the bottom of **.bashrc**, you want to add the line:

```
PATH=$PATH:~/bin
```

Be sure to type the above line EXACTLY. This line says, in addition to everywhere else

that the system looks to find a typed-in command, to also look in your bin directory.

Now, save the change (^O in pico, remember), and exit (^X) pico. You should now be back at the cs-server prompt.

You've changed this file, but it now needs to be run! **.bashrc** is run automatically every time you log into cs-server, but if you do not feel like logging off and on again, the following will also force it to run now (when typed at the cs-server prompt):

```
source .bashrc
```

- d. Now try typing **expr_play** at the cs-server prompt, followed by typing the enter key. If you see the tool's greeting, then you are set!

Remember to answer **n** (for no) when asked if you have any local functions you'd like to use, enter an expression of your choice when prompted, and see its result. Then, you can type **q** to exit this initial foray into **expr_play**.

2. Now, create a file named **130hw01.txt** wherever you would like in your cs-server account --- for example, by typing:

```
pico 130hw01.txt
```

Within this file (while in pico or the text editor of your choice), type the following:

your name on one line,

"QUESTION 2" on the next line, and then

the answers to each of the following, each PRECEDED by the letter of that part:

- a. Write an expression that C++ would consider to be the integer value seventeen.
- b. Write an expression that C++ would consider to be the floating point value seventeen.
- c. Write a C++ expression that would compute the product of the integers seventeen and twelve.
- d. Write a C++ expression that would compute 170 minus (5.0 raised to the 12th power)
- e. Write a C++ expression that would compute the product of 5 and 6 and 7 and 8.
- f. Write a C++ expression that would compute the sum of:
the product of 5 and 6
added to:
87 minus 46.
- g. Write a C++ expression that would compute the result of dividing the integer five by the integer two. On the next line, type what you think the result will be in C++.
- h. Write a C++ expression that would compute the result of dividing the floating point value five by the floating point value two. On the next line, type what you think the result will be in C++.

- i. Write a C++ expression that would compute the result of dividing the floating point value five by the integer two. On the next line, type what you think the result will be in C++.
- j. Write a C++ expression that would compute the square root of the floating point value seventy-five.
- k. Write a C++ expression that would compute the square root of the result of dividing the floating point value twenty-three by the integer eleven.

Be sure to save your file (^O in pico) before exiting (^X in pico)!

Now --- test all of your expressions in **expr_play**. In parts **g**, **h**, and **i**, did you guess the same result that C++ actually gave? (You are allowed and encouraged to correct your answers in **130hw01.txt** if you discover any problems with your expressions when you test them in **expr_play**.)

- 3. Consider **Exercise 2.1.1** in the CIS 130 Reading Packet, in Section 2, subsection 2.1, p. 6. If you do indeed find any of those functions provided in **cmath**, practice calling them in an expression within **expr_play** at least once each.

(**note**: if you are sure you have the right function name but are getting error messages, try your expression using a floating point argument instead of an integer...)

- 4. Consider **Exercise 2.1.2** in the CIS 130 Reading Packet, in Section 2, subsection 2.1, p. 6. Do what it asks, and if you do indeed find the function it requests at the end, practice calling it at least once within **expr_play**, also.

When you are done, use **~st10/130submit** to submit your final version of **130hw01.txt**:

- * make sure that you are in the directory where your **130hw01.txt** is (use **cd** to get there, if necessary)
- * once in that directory, type:
 ~st10/130submit
 ...and follow the directions to submit your **130hw01.txt**

expr_play will submit your work for the required **expr_play** practice described above.