CSCI-15 Lab #2, due 9/20/18

First, work out the answers to the following questions YOURSELF. Then get in groups of two or three to check your answers, and work out any disagreements. Try to reason out the answers to these BEFORE writing code to test them. Then write a test program to verify your group's conclusions. If the program shows you that your conclusions are wrong, work out why as a group. If you can't figure out why, ask me. Your program will not be able to actually test everything here, as some operations are illegal (do not compile), and some compile but do not work.

Consider these declarations:

```
char str[100] = "This is a simple C-string";
char *pstr = "This is a declaration of a pointer to a C-string";
char *qstr = pstr;
char *rstr = str;
```

Would the following be legal? Solve alone first, then discuss with your group and test using a compiler so that you fully understand what is going on. Write up your conclusions and submit them in an email with all the names of your group on it. Attach your test program and its output.

For each of the following questions, start over at the original declarations and values given above.

Can we change:
str[10] to a new value?
pstr[10] to a new value?
pstr to a different string?
str to a different string? // these last two questions are a bit tricky – think how you can interpret them

If so, how, and if not, why not?

If we change pstr to point to a different string :

```
pstr = "Hello";
```

what happens to qstr? Will qstr then point to the old string or the new string?

Can we assign str = "Goodbye";

Why or why not?

If we change rstr[5], what happens to str?
If we change str[10], what happens to rstr?

What happens if you print pstr, *pstr, or (void *)pstr?

Then (AFTER agreeing on your answers), using str-ptr.cpp as a guide, print out the addresses of the variables and the data they point to, and try these things in the program.

What conclusions can you draw from the results? Particularly, can you work out why things do not work? If you have any questions, show me your code and the conclusions you have drawn from it. If you have trouble, ask me after you have tried it in code.