C programs:
- To run: `./hello.c`
- When you compile, you get an executable

GCC:
- Gcc is the C compiler
    - Similar to how Javac is the Java compiler
- To compile hello.c:
    - `gcc -o hello hello.c`
    - If you just do gcc hello.c, the output will be named a.out

Bash:
- Use up and down arrows to scroll through recent commands
- Use tab completion

Thoth:
- Thoth is a server set up to do work on
- Connect over the internet with SSH to run commands on it
- Use something like PuTTY or ssh <username>@pitt.edu then use Pitt password

Appearances can be deceiving:
- May look similar to Java, but doesn't behave in the same way
    - `int x = 5;`
    - `printf("The value of x is: " + x);`
        - This will print "alue of x is" when using C
        - Cannot concatenate strings with variables like in Java

C Versions:
- C89 (ANSI C)
    - Most portable
        - Works on almost every platform
- C11
    - Newest
    - New features not relevant to us here
- C99
    - Used for this course

OOP:
- Object-Oriented Programming
- Java is OOP
- C is not OOP
- Whether you should use OOP or not will depend on the situation

Exponents:
- ^ is not exponents in C
    - ^ is exclusive bitwise OR
- & is bitwise AND
- | is bitwise OR

Input and Output:
- Instead of concatenating strings with variables using + like in Java, C uses format string with format specifiers/placeholders
- Can use as many format specifiers in a single statement as you want, just list them in order
-

%p	pointer
%x	hex
%c	char
%s	string
%f	float
%d	decimal
%i	int

- printf("The value of x is: %d\n", x);

Escape Sequences:
-

\n	New line
\t	tab
\\	\
\a	bell/alarm

Variables in C:
- If a variable is not initialized, it can contain any value
    - You don't know what it will print
- Uninitialized variables in C can contain any value

GCC flags:
- -Wall turns on all the warnings
    - Does not prevent the program from being compiled
- -Werror turns all the warnings into errors
    - Cannot compile program without fixing errors

fgets()
- Used in C to get a line from a file

- File get string