

Tutorial 1: C Revision

Each tute will typically consist of six sections:

- General review questions/discussion
- New programming concepts
- A section on compilation
- A section on compiler/general programming errors
- A section on debugging
- Exercises

Review: Basics

What is the difference between a function declaration and definition?

What typically goes into a header and source file and why?

What is forward declaration?

New Programming Concepts: None (yet)

Compiling: Executables

What is a C executable?

How can you compile a C program to produce an executable that you can run on the linux servers?

How do you compile a c++ program on the linux servers provided?

What is the first step in the compilation of a program (ignoring the preprocessor)?

Errors: Syntax Errors

What is a syntax error?

What are some examples of common syntax errors?

Debugging: stderr

What is stderr?

How can stderr be used for debugging and how does it differ from stdout?

Exercises:

What is wrong with the following:

- (a) `if (a == 2); { return a; }`
- (b) `for (int i = 0, j = 2; i < 100 & j < 1024; l++, j *= 2) { printf("*"); }`

Write a program to calculate the nth fibonacci number, input from the command line.

What is the following code doing and what will the output be?

```
#include <stdlib.h>
#include <stdio.h>

int main(int argc, char **argv)
{
    int x = 10;
    while ( x --> 0) // x goes to 0
        fprintf(stdout, "%d ", x);
    return EXIT_SUCCESS;
}
```