C Programming Logbook
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Introduction to C Programming: Toolchain
https://secure.ecs.soton.ac.uk/notes/ellabs/1/c1/c1.pdf
https://en.wikibooks.org/wiki/C_Programming/Variables

	Listing 1	Listing 2	Listing 3
No error message	✓		
An error from the preprocessor		✓	
An error from the compiler			✓
An error from the linker			

Can declare multiple variables in one line as long as they are the same type.

```
int anumber, anothernumber, yetanothernumber;
```

Can assign it a value

```
int some_new_number = 4;
```

Can make multiple variables have the same value

```
anumber = anothernumber = yetanothernumber = 8;
```

A variable can be named anything as long as it is made of letters, numbers and underscores. It must begin with a letter.

int is an integer that can be stored as a signed 32 bit number.

char is a character in the ASCII character set. When defining a char it can be expressed as the character or its corresponding ASCII number.

float is an inexact representation of a real number, meaning it isn't always 100% accurate. It can store decimals, and numbers much greater and much smaller than an int can.

double is a double precision float, meaning it is a float that can store twice as much (floats on steroids!). It takes up more space than a float so is not preferable when space is at a minimum.

sizeof function will tell you how much memory is actually used by any variable.

```
size_t size;
int i;
size = sizeof(i);
```

const qualifier is used before a data type, for example const int. This is used at the start of your code to define a variable, it is then not allowed to change.

const int may be used to define a magic number, this is a variable that will stay the same within the code but may be needed to change between versions.

#define may also be used to define a magic number. #define is used within the preprocessor so if used incorrectly can cause more damage to the code than const int.