



# COMP1511

## Tutorial 2

*variables | arithmetic | if/else*



# C Data Types

**int:** Stores the value of an integer

**double :** Stores the value of some fractional/decimal number

**char:** Stores an integer from 0 - 127, mostly used to represent ascii characters



# Variables

Variables store a certain *type* of value and can be changed

Variables must be declared before use

```
int number;           // Declaration
```

Variables must be initialised before their value is used

```
number = 42;          // Initialisation
```

```
char letter = 'A';    // Both on the same line
```



# Constants

Constants define a value that does not change during the program

```
#define SIZE 16
```

They should be used to prevent 'magic numbers' in your code



# What C operators have we seen so far?

**Arithmetic:**    +    -    \*    /    %

**Logic:**        &&    ||    !

**Comparison:**   <    >    <=    >=    !=    ==



# C Arithmetic quirks

What are the values of:

- A.  $(7 / 2)$
- B.  $(3.0 / 2) + 1$
- C.  $(3 / 2) + 1.0$
- D.  $'a' + 5$
- E.  $'F' - 'A' + 'a'$

# Programming Demo- Rollercoaster

