

Data Types

Variables are named areas of memory which can be used to store data.

There are various types of data which can be stored. The term **data type** refers to the general class of data the item belongs to.

Data Types

For example:

```
theAge <- 16 #data type whole number
```

```
theName <- "Doris" #data type 'word'
```

Different data types find it hard to mix.

It doesn't make sense to try to add theName to theAge - one is a word, the other is a number; you can't add them together really.

Data Types

There are 5 data types you need to know about:

- Integer
- Real number
- Character
- String
- Boolean

Data Types

Integer: whole numbers

```
theAge <- 15
```

```
theTemp <- -3 #minus numbers are OK
```

```
theScore <- 0 #0 is an integer
```

Sometimes referred to as `int`

Data Types

Real numbers: decimal numbers

```
theHeight <- 1.64
```

```
theTemp <- 25.4
```

```
theCake <- 3.142 #more of a pie
```

Any decimal number is a real number (even 42.0
- this is technically different from integer 42)

Data Types

Character: a **single** character from a keyboard

```
theFirstLetter <- "p"
```

```
theSymbol <- "%" 
```

You won't come across character data types very often. They build up to form strings (next slide).

Data Types

String: a sequence of characters

```
theName <- "Boris"
```

```
theTitle <- "Lady"
```

```
theCar <- "Porsche 911"
```

Anything within quotes is a string - so "7" is different from integer 7 (and from real 7.0)

Data Types

Boolean: True or False values

```
correctAnswer <- True
```

```
finished <- False
```

Boolean values can only ever be True or False.

NB: capital letter; no quotes - they are not strings but something different