Variables and Declarations

Matlab is not strongly typed. One moment, a variable can contain a real number, the next, a string (array of characters).

C is not strongly typed. A string of characters "anything goes" can be treated as a bunch of double values or as anything else. If you know how values are stored in memory, you can do anything with them.

"whatever"

There are several definitions of *strong typing*. A later short essay defines the advantages and disadvantages of srong typing, as we use the term.

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Strong typing requires variable declarations

Basic form:

                           <type> <variable-name>

declaration	variable
int x	x `0` **int**
boolean isEven	isEven `false` **boolean**

1. Depending on where declaration is placed, there may be more syntax. But there is *always* a type and a variable name.

2. A declaration is *not* a statement and doesn't get executed. It simply declares that a variable is needed and gives its type.

Variable names

Contain letters, digits, _, and $

First character cannot be a digit

Java convention for variable names:

(1) Start with a non-capital

(2) Capitalize all words except the first

```
apple       numberOfChildren

isEven      bankAccount
```

Tension:

Short names can't give meaning of variable.

Long names produce clutter and an unwieldy looking program.

We look a this issue later.