Variables

Computer systems consist of hardware and software, working together to carry out the **information processing cycle**. **I** (input), **P** (processing), and **O** (output). In this section we'll to look at the objects (**variables**) that store information (**values**), and how you can create, modify and display them.

A **variable** is a **named** area in memory that stores a **value**. If you want a quick physical analogy, think of a box with a label on it. Here are the five things which you can do with a variable:

- **Declare**: associates a name with a type. (What kind of variable is it?)
- **Define**: allocate or reserve space for the variable. (Create the variable.)
- **Initialize**: provide a starting value when the variable is created.
- **Assign**: copy a new value into an existing variable.
- **Input**: read a value and use that to initialize or assign to a variable.

Declaration

Sometimes, a variable will be created in one part of your program, (or even outside of your program, by the operating system), and you want to use that variable in your code. To do so, you need to **declare** the variable. A declaration associates a variable name with a particular type, but **does not** create the variable.

```
extern string ASSIGNMENT;
```

Here is a **declaration** for a **global** variable which you can use in your homework, but **which is defined elsewhere**.