More Object-Oriented Concepts

Method Parameters

Some methods require additional information. The method receives this as one or more <u>parameters</u>. Details about any required parameters can be found in the <u>signature</u> of the method.

```
void moveHorizontal(int distance)
```

Methods can have any number of parameters, including zero (in which case, the *parentheses* are empty).

Data Types

All programming languages use different types of data. It is important to provide data that is compatible with the specified data type. Otherwise an error will be generated.

int stands for integer, a positive or negative whole number (including zero)

String data includes any character that can be input via a keyboard. A String is enclosed by double-quotation marks (e.g., "red").

boolean data is either `true` or `false`.

Methods Affect a Single Instance

From a single *class*, it is possible to create multiple *instances* of an object.

Each instance will have the same methods available, but *invoking* a method will only affect the selected (instance of the) object. All other instances will be unaffected.

State of an Object

Each object (instance) has certain properties associated with it. For example, an object might have position (x- and y-coordinates), size, or colour.

The combination of *all* attributes for a particular object is called the <u>state</u> of the object.

Some methods may change the state of the object, but there are also many useful methods that leave the state of the object unchanged.

Fields (of the Class)

The *state of an object* refers to the values stored in various named <u>fields</u>, such as xPosition, yPosition, or colour. Each object has its own state values.

The fields, however, are the same for all objects with the same class. Thus, the fields are defined in the class, and for each object, there are state values assigned to each field.

Class Exercises

Working alone or in pairs:

- get a copy of the text

- read through sections 1.6 through 1.10

- try the additional exercises, up to Exercise 1.16