

# Objects

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In this chapter you will be introduced to objects. Objects form the very basics of object-oriented modelling. We will describe what objects are and how they are defined by properties and how properties have values. Some simple examples are graphically represented.

## What are Objects?



**Objects** are the physical and conceptual things we find in the world around us. In its most basic form an object can be described using so-called **properties** or **attributes** which describe the characteristics of a thing. Anything can be described (**modelled**) as an object: a person, a car, a pen, a city or even a process. It does not matter how small or big, how simple or complex the object is. Objects, physical and conceptual, have properties which are **characteristics** unique to individual objects.

For example, let's look at our **Sloopy family**, our cartoon family which will be used throughout these lessons to demonstrate different concepts. The entire family can be seen as an object, each Sloopy can be treated as an object or any part of their body or piece of clothing can also be seen as an object. Take Sloopy hair as an object. Hair has a colour, a certain length, a style and sometimes extras such as highlights, beads or pins. These are the properties or attributes of the object. Each property (colour, length, style, extras) has a certain **value**, something that describes it (for example, green, medium, smooth, highlights). Note that the properties are shared for the hair shown in Figure 1 below but the values are different. They both have a colour property but one is green and the other blue (values).

<b>.Sloopy hair</b>	<b>Properties</b>	<b>Values</b>
	Colour Length Style Extras	green medium smooth highlights
	Colour Length Style Extras	blue short spikey none

**Figure 1:** Object, its properties and their values

Now let's look at another example: a piece of clothing the Sloopies are wearing. A jumper (object) can be described by a range of properties such as colour, size and age.

<b>.Sloopy jumper</b>	<b>Properties</b>	<b>Values</b>
	Colour Size Age	red XL new
	Colour Size Age	yellow S 2 years

**Figure 2:** More object, properties and values

The range of properties that is chosen depends on what has to be represented (modelled). For example:

1. When jumpers are modelled in a fashion context, properties / attributes such as material, collar style and sleeves are relevant,
2. Whereas in a retail context, properties such as price, washing details and shelf life are important.

The values of the properties are also seen in the table.

## Summary

**Objects** form the basic element of **object-oriented modelling** and are at the core of most concepts that will be introduced during the course. At this stage, **objects** are very basic and new parts will be added to them later in the course.



Individual objects have been introduced. Objects have properties and properties have values. Objects are always grouped in classes which are dealt with in the next section.