



GST 45 – Properties and Characteristics

Formal Description

Once an entity has been identified, it may be described in terms of its properties or characteristics. These are features used to describe, distinguish or classify entities. In this course, the terms *property* and *characteristic* are used interchangeably. A property is regarded as a recurring feature that may be shared by many different entities and used to recognise similarities and differences between them.

Plain English Explanation

Recognising an entity is only the first step in understanding it. We usually wish to describe what the entity is like. We might describe a tree by its height, species, colour, age or shape. We might describe a person by their height, occupation or eye colour. These descriptive features are called properties or characteristics.

Many different entities can possess the same property. A stone, a tree and a building all possess mass. Different people may all have brown eyes. Different countries may all have large populations. The property itself is therefore more general than any particular entity that possesses it.

Properties are usually abstract rather than concrete. We cannot pick up "height" or "temperature" in the same way that we can pick up a stone or a book. Instead, we recognise these as recurring features that many entities possess. Although abstract, they are extremely useful because they allow us to describe, compare and classify the world around us.

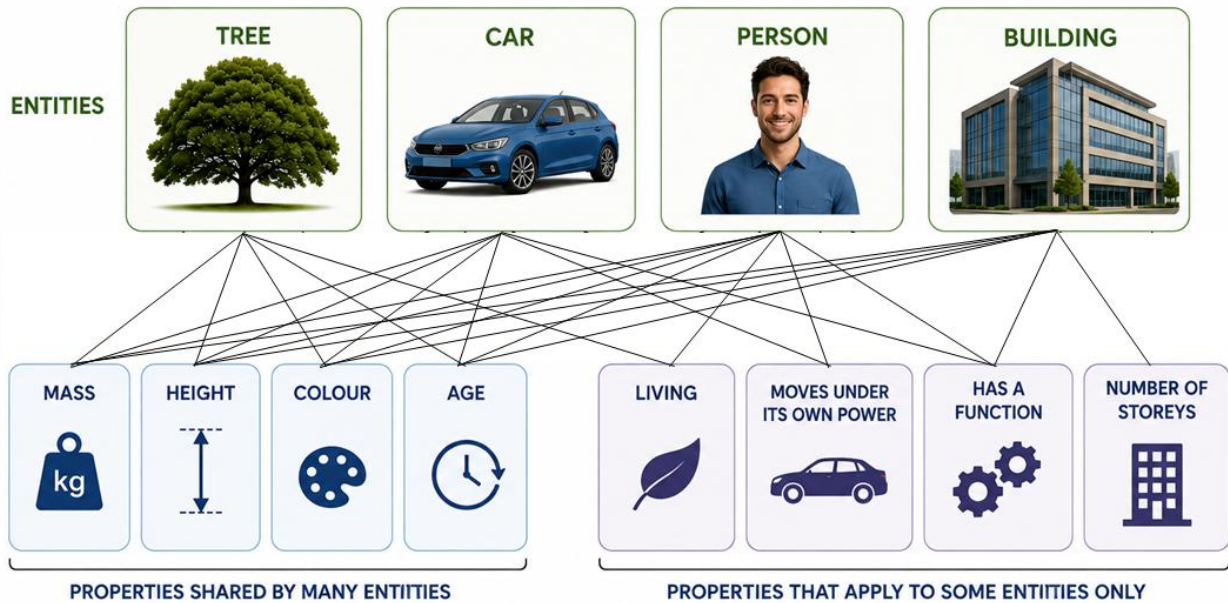
Properties also allow us to recognise similarities between entities that may otherwise appear very different. A steel bridge and a tree share very few obvious characteristics, yet both possess height, mass and age. Likewise, a business, a hospital and a football club may all possess properties such as size, resilience or effectiveness. Recognising shared properties allows General Systems Theory to compare many different kinds of systems using a common language.

In later modules we shall see that many properties can take different values. Before we can describe the state of an entity, however, we must first understand the properties that make such descriptions possible.



PROPERTIES AND CHARACTERISTICS

Properties are recurring features that may be possessed by many different entities.



KEY POINT

By possessing properties, entities can be compared, measured, described and classified. This enables us to recognise patterns and understand systems.

Examples

An oak tree and a pine tree differ in many respects, but both possess properties such as height, age and mass. These shared properties allow the two trees to be compared even though they belong to different species.

Similarly, two companies may manufacture completely different products yet both possess properties such as profitability, number of employees and organisational resilience. These common properties allow organisations in different industries to be analysed using similar concepts.

Provenance and Links

The idea that entities possess properties can be traced back to Aristotle's distinction between substances and their attributes. It has remained a central concept in philosophy, ontology and the natural sciences. Modern work in categorisation, particularly by Eleanor Rosch, has shown how recurring characteristics enable humans to recognise and classify entities. Within systems theory, properties provide the basis for describing entities, comparing systems and, later, defining variables, states and behaviour.



Practical Exercise

Choose three different entities from your everyday surroundings. For each entity, identify at least five properties or characteristics that could be used to describe it.

Now compare your three lists. Which properties are shared by more than one entity? Which are unique? Finally, explain how recognising shared properties helps us compare entities that may otherwise appear very different.