

**The**  
**Simple Ontology**  
**Confidential**

**First Level Word Categories**

In the **Simple Ontology**, each **class**, and **relationship** type is derived from the **keyword** based **definitions** in the **Simple Dictionary**. The result is an **implicit, inheritance-based hierarchical ontology** comprised of **Types, Contexts** and **Relations** in which no manual (or arbitrary) classification is required, since all classifications and relations are derived from the definitions of the words themselves.

**Types** include: **Acts, Animals, Descriptions and Measures, Events, Objects, Organizations, Places, Roles** and **Substances**. Within these nine classes, or categories, all words in English can be classified.

**Acts**

**Examples: say, write**

**SAY** = Use words to give **INFORMATION**

**Announce** = **SAY** something **publicly**

**State** = **SAY** something **definitely**

**Imply** = **SAY** something **indirectly**

**Accuse** = **SAY** someone has done something **wrong**

**Admit** = **SAY** something is **true**

**Note: Say** shares its principal keyword with **write**:

**WRITE** = Put words in a document to give **INFORMATION**;

Accordingly, all of the children of **say** (*announce, state, imply, accuse, and admit*) are related to all of the children of **write** (*compose, draft, scribble, sign*) since all are used to give **information**, a context.

**Animals**

**Examples:** amphibians, birds, fish, **mammals** (**cats, dogs, people**), reptiles

**Mammal**=an **ANIMAL** with a backbone and usually fur

**Dog** = a larger **MAMMAL** with four legs that lives with people

**Cat** = a smaller **MAMMAL** with four legs that lives with people

## Descriptions and Measures

**Behavioural:** curious, friendly, patient  
**Emotional:** angry, sad, excited  
**Color:** red, white, blue  
**Size:** large, small, enormous  
**Weight:** heavy, light, obese  
**Position:** in, on, out,  
**Amount:** some, a lot, many, volume  
**Distance:** near, far, height, width, depth  
**Sequence:** before, after  
**Time:** now, then, future, past, age (young, old, elderly), soon  
**Speed:** fast, slow, rapid  
**Desirability:** good, bad, great, satisfactory  
Etc...

## Events

**Examples:** accident, birth, death, graduation, marriage

**Graduation** = An event in which you get a document that says you have **STUDIED** and **LEARNED about** one or more subjects

Accordingly, the word **graduate** is implicitly grouped with the word **school** (a place you study and learn new information), because both share the keywords **study** and **learn**.

## Objects

**Examples:** clothing, furniture, plants, **vehicles**

**Vehicle** group (sample):

**Type-Subtype Relation: Vehicle-Auto-Car-Sport-Electric**

## Organizations

**Examples** (by type/context): business, education, government, **sports**

**Sports** group (sample)

Sports-University-Baseball-Team

Sports-Professional-Baseball-Team

## Places

**Examples:** (by type/context): business, education, geography, government, sports, space

**Geography:** continents, countries, states, cities, boroughs, neighbourhoods

**Space** group: galaxies, solar systems, planets

## Roles

**Examples** (by context): **School** (principal, teacher, student), legal (attorney, defendant, judge), sports (coach, player, referee)

**School** group (sample):

Teacher-University-Professor-Math-Geometry

## Substances

**Examples:** beverages (alcohol, soda, juice, milk), chemical (oxygen, hydrogen, air, water), **plant** (seeds, grass, vegetables)

**Plant** group (sample):

Plant – Vegetable – Fruit – Apple – Granny Smith

## First Level Word Relations

**Is**

**Has**

**Does**

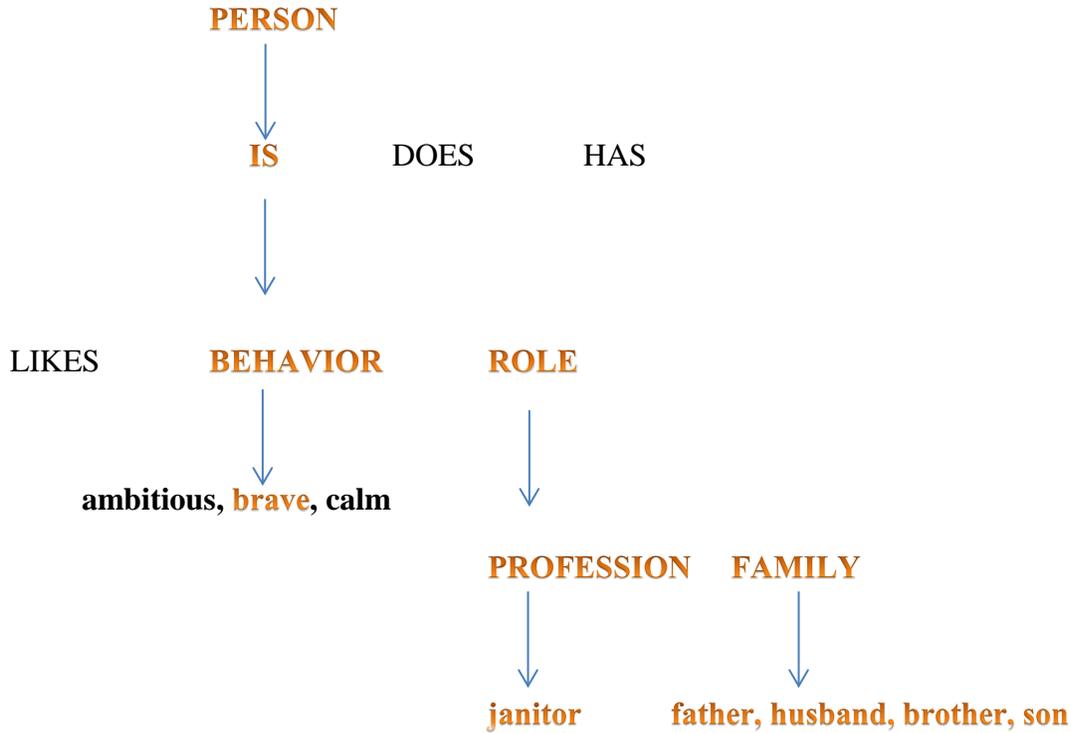
A car **is** a type of vehicle, **has** wheels, an engine or motor and seats, and **takes** people places.

The terms **is**, **has** and **does** point toward a large number of different of relationships, each a form of one of these three principal types. In order to understand this, it is easiest to view it in a tree.

## Tree Based Example of Word Relations

There are a number of words that describe people's **behaviour**. These include **ambitious**, **brave**, **calm**, among others.

This is shown as follows:

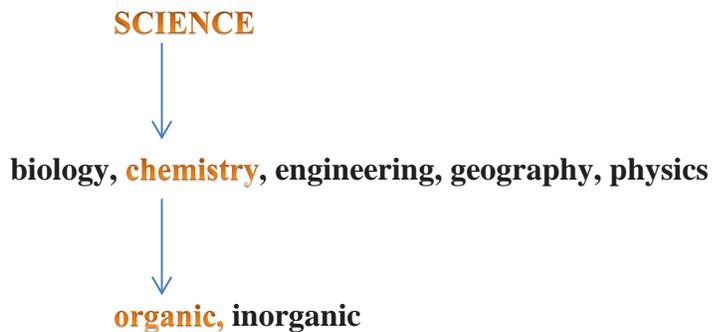


### Contexts

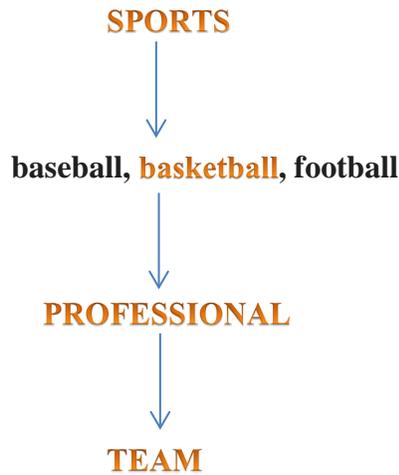
In the Simple Ontology, the **keywords** used to define the words in the dictionary are the types and the contexts and the **defining vocabulary**.

Returning to the **say** example on page one, both **say** and **write**, as well as the words **communicate**, **phone**, and **email** are all classified in the context of **INFORMATION** because each is used to give and get **INFORMATION**.

Sample contexts include:



Note that each *child* of science is defined by the keyword **SCIENCE** as in the case of physics = the branch of **SCIENCE** that studies matter and energy)



### Contextual Relations

All relations in Simple are **uniform**. In the context of **Health** for example, we see that the following terms are implicitly related by the **keywords** in their definitions:

Doctor – patient - nurse (**roles**) - hospital (**place**) - operation (**event**) - prescription (**activity**)  
 - medicine (**substance**), etc.

Doctor=a person who helps sick people get healthy, sometimes by giving them medicine

Patient=a person who goes to see a doctor

Nurse=a person who works with and helps a doctor

Hospital=a place doctors work to make sick people healthy

Operation=an event in which a doctor makes a sick or injured person's body healthy

Medicine=a substance that makes sick people healthy

### Adding Context

When the term **police** for example, is added to an object like a **car**, we not only produce a new object - **police car**, but the object (car in this case), inherits all of the contextual relations that go with **police** (an organization) in the ontology. These include the objects **uniform, siren, handcuffs, nightstick, gun, badge**; the events **arrest, charge** and **bail**; the roles **policeman, victim, criminal**; and the places **jail** and **station**.

This example shows how **objects, substances, places, people, and animals** (all the concrete nouns in English) can combine (ie have valences) with **roles, organizations, activities, actions, events, and qualities** (all the abstract concepts and activities), and in doing so **add context** and **knowledge** to the system.