# **ITCatalog**

IRI:

https://evilscript.altervista.org/productCatalog.owl

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#### **Current version:**

1.1 - Revised and annotated for ODP submission by Aldo Gangemi 1.0 - Created by Valentina Presutti and Sara Bernardini

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#### Other visualisation:

Ontology source

# **Abstract**

The collection entity pattern. It is extracted from DOLCE-UltraLite by partial clone of elements.

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# Introduction

The "Simple IT Product Catalog" is a product management/catalog ontology to demonstrate a fairly simple product catalog and how a reasoner should work with Company nodes and devices. It could also be applied as a model for other companies product catalogs

# Classes

CasualUser Collection Company Computer Cover Currency Device

EarPlugs Engineering Factory HardCover headphones

housing (engineering) item ITEngineering laptop Laptop list list item
loudspeaker Manufacturer NotPortableDevice personal computer

PortableDevice power cable PowerUser Price Product

product (business) product high product low product medium

ProductCatalog SellingCatalog smartphone Smartphone smartwatch

Smartwatch SoftCover Stereo StockCatalog Tablet tablet computer

User

```
(collections) Bag<sup>c</sup>
```

back to <u>ToC</u> or <u>Class ToC</u>

IRI: http://www.ontologydesignpatterns.org/cp/owl/bag.owl#Bag

Bag - Collection that can have a number of copies of each object

#### has super-classes

**Collection**<sup>C</sup>

ProductCatalog<sup>c</sup>

catalog<sup>c</sup>

#### has sub-classes

list<sup>c</sup>

is in domain of

has itemop

#### is in range of

item of op

## has members

<u>AppleAccessories<sup>ni</sup></u>, <u>AppleMobile<sup>ni</sup></u>, <u>ApplePC<sup>ni</sup></u>, <u>AsusPC<sup>ni</sup></u>, <u>BeatsEarPlugs<sup>ni</sup></u>, SamsungAccessories<sup>ni</sup>, SamsungGalaxy<sup>ni</sup>

#### is disjoint with

item<sup>c</sup>, list item<sup>c</sup>, headphones<sup>c</sup>, laptop<sup>c</sup>, loudspeaker<sup>c</sup>, personal computer<sup>c</sup>, power cable<sup>c</sup>, smartphone<sup>c</sup>, smartwatch<sup>c</sup>, tablet computer<sup>c</sup>, 2 in 1 p c<sup>c</sup>, housing (engineering)<sup>c</sup>, product (business)<sup>c</sup>, Accessory<sup>c</sup>, cable<sup>c</sup>, Computer<sup>c</sup>, Cover<sup>c</sup>, Device<sup>c</sup>, EarPlugs<sup>c</sup>, HardCover<sup>c</sup>, Laptop<sup>c</sup>, NotPortableDevice<sup>c</sup>, PortableDevice<sup>c</sup>, product high<sup>c</sup>, product low<sup>c</sup>, product medium<sup>c</sup>, Smartphone<sup>c</sup>, Smartwatch<sup>c</sup>, SoftCover<sup>c</sup>, Stereo<sup>c</sup>, Tablet<sup>c</sup>, 2in1<sup>c</sup>

# 2 in 1 p c<sup>c</sup>

back to ToC or Class ToC

IRI: http://www.productontology.org/id/2-in-1 PC

#### is equivalent to

2in1<sup>c</sup>

# has super-classes

Portable Device<sup>c</sup>

#### has members

ZenBookFlip S UX371<sup>ni</sup>

# is disjoint with

(collections) Bag<sup>c</sup>, Collection<sup>c</sup>, list<sup>c</sup>, headphones<sup>c</sup>, loudspeaker<sup>c</sup>, personal computer<sup>c</sup>, power cable<sup>c</sup>, smartphone<sup>c</sup>, smartwatch<sup>c</sup>, housing (engineering)<sup>c</sup>, Accessory<sup>c</sup>, cable<sup>c</sup>, Computer<sup>c</sup>, Cover<sup>c</sup>, EarPlugs<sup>c</sup>, HardCover<sup>c</sup>, NotPortableDevice<sup>c</sup>, ProductCatalog<sup>c</sup>, SellingCatalog<sup>c</sup>, Smartphone<sup>c</sup>, Smartwatch<sup>c</sup>, SoftCover<sup>c</sup>, Stereo<sup>c</sup>, StockCatalog<sup>c</sup>, catalog<sup>c</sup>

# 2in1<sup>c</sup>

back to ToC or Class ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#2in1

A portable computer that has features of both tablets and laptops

### has super-classes

PortableDevice<sup>c</sup>

#### has members

ZenBookFlip S UX371ni

# is disjoint with

(collections) Bag<sup>c</sup>, Collection<sup>c</sup>, list<sup>c</sup>, headphones<sup>c</sup>, loudspeaker<sup>c</sup>, personal computer<sup>c</sup>, power cable<sup>c</sup>, smartphone<sup>c</sup>, smartwatch<sup>c</sup>, housing (engineering)<sup>c</sup>, Accessory<sup>c</sup>, cable<sup>c</sup>, Computer<sup>c</sup>, Cover<sup>c</sup>, EarPlugs<sup>c</sup>, HardCover<sup>c</sup>, NotPortableDevice<sup>c</sup>, ProductCatalog<sup>c</sup>, SellingCatalog<sup>c</sup>, Smartphone<sup>c</sup>, Smartwatch<sup>c</sup>, SoftCover<sup>c</sup>, Stereo<sup>c</sup>, StockCatalog<sup>c</sup>, catalog<sup>c</sup>

# back to ToC or Class ToC Accessory<sup>c</sup> IRI: https://evilscript.altervista.org/productCatalog.owl#Accessory A product used with or within the device use has super-classes product (business)<sup>c</sup> Product<sup>c</sup> has sub-classes Cover<sup>c</sup>, EarPlugs<sup>c</sup>, cable<sup>c</sup>, headphones<sup>c</sup>, housing (engineering)<sup>c</sup>, power cable<sup>c</sup> is in domain of inBoxOf<sup>op</sup> is in range of containsInBoxop, putInBoxesop has members AirPods wirelessChargeni, Beats cuffieni, Lightning cableni, USBC cableni is disjoint with (collections) Bag<sup>c</sup>, Collection<sup>c</sup>, list<sup>c</sup>, laptop<sup>c</sup>, loudspeaker<sup>c</sup>, personal computer<sup>c</sup>, smartphone<sup>c</sup>, smartwatch<sup>c</sup>, tablet computer<sup>c</sup>, 2 in 1 p c<sup>c</sup>, Computer<sup>c</sup>, Device<sup>c</sup>, Laptop<sup>c</sup>, NotPortableDevice<sup>c</sup>, PortableDevice<sup>c</sup> ProductCatalog<sup>c</sup>, SellingCatalog<sup>c</sup>, Smartphone<sup>c</sup>, Smartwatch<sup>c</sup>, Stereo<sup>c</sup>, StockCatalog<sup>c</sup>, Tablet<sup>c</sup>, 2in1<sup>c</sup>, catalog<sup>c</sup>

# BigEngineering<sup>c</sup>

back to <u>ToC</u> or <u>Class ToC</u>

IRI: https://evilscript.altervista.org/productCatalog.owl#BigEngineering

A part of the engineering process that is eventually bigger than the normal one

#### is equivalent to

designs<sup>op</sup> min 3 Product<sup>c</sup>

has super-classes

**Engineering**<sup>C</sup>

has members

Foxconn<sup>ni</sup>

is disjoint with

Factory

# cable<sup>c</sup>

back to ToC or Class ToC

**IRI:** https://evilscript.altervista.org/productCatalog.owl#Cable

#### has super-classes

Accessory

has members

Lightning cable<sup>ni</sup>, USBC cable<sup>ni</sup>

# is disjoint with

(collections) Bag<sup>c</sup>, Collection<sup>c</sup>, list<sup>c</sup>, headphones<sup>c</sup>, laptop<sup>c</sup>, loudspeaker<sup>c</sup>, personal computer<sup>c</sup>, smartphone<sup>c</sup>, smartwatch<sup>c</sup>, tablet computer<sup>c</sup>, 2 in 1 p c<sup>c</sup>, housing (engineering)<sup>c</sup>, Computer<sup>c</sup>, Cover<sup>c</sup>, Device<sup>c</sup>, EarPlugs<sup>c</sup>, HardCover<sup>c</sup>, Laptop<sup>c</sup>, NotPortableDevice<sup>c</sup>, PortableDevice<sup>c</sup>, ProductCatalog<sup>c</sup>, SellingCatalog<sup>c</sup>, Smartphone<sup>c</sup>, Smartwatch<sup>c</sup>, SoftCover<sup>c</sup>, Stereo<sup>c</sup>, StockCatalog<sup>c</sup>, Tablet<sup>c</sup>, 2in1<sup>c</sup>, catalog<sup>c</sup>

# CasualUser<sup>c</sup>

back to <u>ToC</u> or <u>Class ToC</u>

IRI: https://evilscript.altervista.org/productCatalog.owl#CasualUser

An individual using a product which is not used to technology

#### has super-classes

**User<sup>c</sup>** 

# is disjoint with

PowerUser<sup>c</sup>

# Collection<sup>c</sup>

back to <u>ToC</u> or <u>Class ToC</u>

**IRI:** http://www.ontologydesignpatterns.org/cp/owl/collectionentity.owl#Collection

# is defined by

http://www.ontologydesignpatterns.org/cp/owl/collectionentity.owl

Any container for entities that share one or more common properties. E.g. "stone objects", "the nurses", "the Louvre Aegyptian collection". A collection is not a logical class: a collection is a first-order entity, while a class is a second-order one.

#### is equivalent to

ProductCatalog<sup>c</sup>

#### has sub-classes

(collections) Bag<sup>c</sup>, SellingCatalog<sup>c</sup>, StockCatalog<sup>c</sup>

#### is in domain of

has member<sup>op</sup>, size<sup>dp</sup>

# is in range of

is member of op

#### has members

<u>AppleAccessories</u><sup>ni</sup>, <u>AppleCatalog</u><sup>ni</sup>, <u>AppleMobile</u><sup>ni</sup>, <u>ApplePC</u><sup>ni</sup>, <u>AsusCatalog</u><sup>ni</sup>, <u>AsusPC</u><sup>ni</sup>, <u>BeatsEarPlugs</u><sup>ni</sup>, <u>SamsungAccessories</u><sup>ni</sup>, <u>SamsungCatalog</u><sup>ni</sup>, SamsungGalaxy<sup>ni</sup>

#### is disjoint with

item<sup>c</sup>, list item<sup>c</sup>, headphones<sup>c</sup>, laptop<sup>c</sup>, loudspeaker<sup>c</sup>, personal computer<sup>c</sup>, power cable<sup>c</sup>, smartphone<sup>c</sup>, smartwatch<sup>c</sup>, tablet computer<sup>c</sup>, 2 in 1 p c<sup>c</sup>, housing (engineering)<sup>c</sup>, product (business)<sup>c</sup>, Accessory<sup>c</sup>, cable<sup>c</sup>, Computer<sup>c</sup>, Cover<sup>c</sup>, Device<sup>c</sup>, EarPlugs<sup>c</sup>, HardCover<sup>c</sup>, Laptop<sup>c</sup>, NotPortableDevice<sup>c</sup>,

<u>PortableDevice</u><sup>c</sup>, <u>Product</u><sup>c</sup>, <u>product high</u><sup>c</sup>, <u>product low</u><sup>c</sup>, <u>product medium</u><sup>c</sup>, <u>Smartphone</u><sup>c</sup>, <u>Smartwatch</u><sup>c</sup>, <u>SoftCover</u><sup>c</sup>, <u>Stereo</u><sup>c</sup>, <u>Tablet</u><sup>c</sup>, <u>2in1</u><sup>c</sup>

# Company<sup>c</sup>

back to <u>ToC</u> or <u>Class ToC</u>

**IRI:** https://evilscript.altervista.org/productCatalog.owl#Company

The company that has the project, the engineering process and the manifacturing to produce the product

### has super-classes

organization<sup>c</sup>

#### has sub-classes

Manufacturer<sup>c</sup>

#### is in domain of

<u>brandContainedIn</u><sup>op</sup>, <u>collabsWith</u><sup>op</sup>, <u>hasCatalog</u><sup>op</sup>, <u>isBrandOf</u><sup>op</sup>, <u>manufacturersTo</u><sup>op</sup>, <u>putInBoxes</u><sup>op</sup>, <u>sells</u><sup>op</sup>

# is in range of

<u>collabsWith</u><sup>op</sup>, <u>containsBrand</u><sup>op</sup>, <u>hasBrand</u><sup>op</sup>, <u>inCollabWith</u><sup>op</sup>, isManufacturerOf<sup>op</sup>, soldBy<sup>op</sup>

#### has members

<u>Apple<sup>ni</sup>, Asus<sup>ni</sup>, BeatsAudio<sup>ni</sup>, Foxconn<sup>ni</sup>, Huáshuò<sup>ni</sup>, Nike<sup>ni</sup>, Qualcomm<sup>ni</sup>, Samsung<sup>ni</sup>, ShortEngineer<sup>ni</sup>, ShortFactory<sup>ni</sup></u>

# Computer<sup>c</sup>

back to ToC or Class ToC

**IRI:** https://evilscript.altervista.org/productCatalog.owl#Computer

Just a computer

#### has super-classes

NotPortableDevice<sup>c</sup>

#### has members

iMac 27 RetinaDisplay 5k 256<sup>nl</sup>

# is disjoint with

(collections) Bag<sup>c</sup>, Collection<sup>c</sup>, list<sup>c</sup>, headphones<sup>c</sup>, laptop<sup>c</sup>, loudspeaker<sup>c</sup>, power cable<sup>c</sup>, smartphone<sup>c</sup>, smartwatch<sup>c</sup>, tablet computer<sup>c</sup>, 2 in 1 p c<sup>c</sup>, housing (engineering)<sup>c</sup>, Accessory<sup>c</sup>, cable<sup>c</sup>, Cover<sup>c</sup>, EarPlugs<sup>c</sup>, HardCover<sup>c</sup>, Laptop<sup>c</sup>, PortableDevice<sup>c</sup>, ProductCatalog<sup>c</sup>, SellingCatalog<sup>c</sup>, Smartphone<sup>c</sup>, Smartwatch<sup>c</sup>, SoftCover<sup>c</sup>, Stereo<sup>c</sup>, StockCatalog<sup>c</sup>, Tablet<sup>c</sup>, 2in1<sup>c</sup>, catalog<sup>c</sup>

# Cover<sup>c</sup>

back to ToC or Class ToC

**IRI:** https://evilscript.altervista.org/productCatalog.owl#Cover

A product made for protecting a device from accidental falls

# has super-classes Accessory has sub-classes HardCover<sup>c</sup>, SoftCover<sup>c</sup> is in domain of fitForop is disjoint with (collections) Bag<sup>c</sup>, Collection<sup>c</sup>, list<sup>c</sup>, headphones<sup>c</sup>, laptop<sup>c</sup>, loudspeaker<sup>c</sup>, personal computer<sup>c</sup>, power cable<sup>c</sup>, smartphone<sup>c</sup>, smartwatch<sup>c</sup>, tablet computer<sup>c</sup>, 2 in 1 p c<sup>c</sup>, cable<sup>c</sup>, Computer<sup>c</sup>, Device<sup>c</sup>, EarPlugs<sup>c</sup>, Laptop<sup>c</sup>, NotPortableDevice<sup>c</sup>, PortableDevice<sup>c</sup>, ProductCatalog<sup>c</sup>, SellingCatalog<sup>c</sup>, Smartphone<sup>c</sup>, Smartwatch<sup>c</sup>, Stereo<sup>c</sup>, StockCatalog<sup>c</sup>, Tablet<sup>c</sup>, 2in1<sup>c</sup>, catalog<sup>c</sup> back to <u>ToC</u> or <u>Class ToC</u> Currency<sup>c</sup> **IRI:** http://www.ontologydesignpatterns.org/cp/owl/price.owl#Currency is defined by http://www.ontologydesignpatterns.org/cp/owl/price.owl A system of money in general use in a particular country. is in range of has currency<sup>op</sup> has members Euroni is disjoint with Price<sup>C</sup> back to ToC or Class ToC Device<sup>c</sup> IRI: https://evilscript.altervista.org/productCatalog.owl#Device An electronic product has super-classes product (business)<sup>c</sup> Product<sup>c</sup> has sub-classes NotPortableDevice<sup>c</sup>, PortableDevice<sup>c</sup> is in range of compatibleWithop has members MacBookAir M1<sup>ni</sup>, AppleWatchSeries6 40mm GPS Cellular<sup>ni</sup>, SamsungGalaxyS20 5G globalni, SamsungGalaxyS10 global<sup>ni</sup>, ZenBookFlip S UX371<sup>ni</sup>, iMac 27 RetinaDisplay 5k 256<sup>ni</sup>, iPadAir 2020<sup>ni</sup>, iPhone11 64<sup>ni</sup>, iPhone12 64<sup>ni</sup>, iPhoneX 64<sup>ni</sup>

# is disjoint with

(collections) Bag<sup>c</sup>, Collection<sup>c</sup>, list<sup>c</sup>, headphones<sup>c</sup>, power cable<sup>c</sup>, housing (engineering)<sup>c</sup>, Accessory<sup>c</sup>, cable<sup>c</sup>, Cover<sup>c</sup>, EarPlugs<sup>c</sup>, HardCover<sup>c</sup>, ProductCatalog<sup>c</sup>, SellingCatalog<sup>c</sup>, SoftCover<sup>c</sup>, StockCatalog<sup>c</sup>, catalog<sup>c</sup>

# EarPlugs<sup>c</sup>

back to ToC or Class ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#EarPlugs

A small accessory device made for listening to music

#### has super-classes

**Accessory**<sup>C</sup>

#### has members

AirPods wirelessChargeni, Beats cuffieni

# is disjoint with

(collections) Bag<sup>c</sup>, Collection<sup>c</sup>, list<sup>c</sup>, laptop<sup>c</sup>, loudspeaker<sup>c</sup>, personal computer<sup>c</sup>, power cable<sup>c</sup>, smartphone<sup>c</sup>, smartwatch<sup>c</sup>, tablet computer<sup>c</sup>, 2 in 1 p c<sup>c</sup>, housing (engineering)<sup>c</sup>, cable<sup>c</sup>, Computer<sup>c</sup>, Cover<sup>c</sup>, Device<sup>c</sup>, HardCover<sup>c</sup>, Laptop<sup>c</sup>, NotPortableDevice<sup>c</sup>, PortableDevice<sup>c</sup>, ProductCatalog<sup>c</sup>, SellingCatalog<sup>c</sup>, Smartphone<sup>c</sup>, Smartwatch<sup>c</sup>, SoftCover<sup>c</sup>, Stereo<sup>c</sup>, StockCatalog<sup>c</sup>, Tablet<sup>c</sup>, 2in1<sup>c</sup>, catalog<sup>c</sup>

# Engineering<sup>c</sup>

back to ToC or Class ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#Engineering

The part of the Manufacturer process that creates the design of the product

#### is equivalent to

designs<sup>op</sup> some Product<sup>c</sup>

#### has super-classes

Manufacturer<sup>c</sup>

#### has sub-classes

BigEngineering<sup>c</sup>, ITEngineering<sup>c</sup>

#### is in domain of

designsop, hasProducerop

### is in range of

designedByop

#### has members

Asus<sup>ni</sup>, BeatsAudio<sup>ni</sup>, Foxconn<sup>ni</sup>, ShortEngineer<sup>ni</sup>

### is disjoint with

Factory<sup>c</sup>

# Factory<sup>c</sup>

back to ToC or Class ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#Factory The part of the Manufactorer process that phisically produces the product is equivalent to produces<sup>op</sup> some Product<sup>c</sup> has super-classes Manufacturer<sup>c</sup> is in domain of producesop is in range of hasProducerop, producedByop has members Huáshuò<sup>ni</sup>, Qualcomm<sup>ni</sup>, ShortFactory<sup>ni</sup> is disjoint with BigEngineering<sup>c</sup>, Engineering<sup>c</sup>, ITEngineering<sup>c</sup> back to ToC or Class ToC HardCover<sup>c</sup> IRI: https://evilscript.altervista.org/productCatalog.owl#HardCover An hard cover has super-classes housing (engineering)<sup>c</sup> Cover<sup>c</sup> is disjoint with (collections) Bag<sup>c</sup>, Collection<sup>c</sup>, list<sup>c</sup>, headphones<sup>c</sup>, laptop<sup>c</sup>, loudspeaker<sup>c</sup>, personal computer<sup>c</sup>, power cable<sup>c</sup>, smartphone<sup>c</sup>, smartwatch<sup>c</sup>, tablet

computer<sup>c</sup>, 2 in 1 p c<sup>c</sup>, cable<sup>c</sup>, Computer<sup>c</sup>, Device<sup>c</sup>, EarPlugs<sup>c</sup>, Laptop<sup>c</sup>, NotPortableDevice<sup>c</sup>, PortableDevice<sup>c</sup>, ProductCatalog<sup>c</sup>, SellingCatalog<sup>c</sup>, Smartphone<sup>c</sup>, Smartwatch<sup>c</sup>, SoftCover<sup>c</sup>, Stereo<sup>c</sup>, StockCatalog<sup>c</sup>, Tablet<sup>c</sup>, 2in1c, catalogc

back to ToC or Class ToC

# IRI: http://www.productontology.org/id/Headphones

is equivalent to EarPlugs<sup>c</sup> has super-classes Accessory

has members

headphones<sup>c</sup>

AirPods wirelessChargeni, Beats cuffieni

is disjoint with

(collections) Bag<sup>c</sup>, Collection<sup>c</sup>, list<sup>c</sup>, laptop<sup>c</sup>, loudspeaker<sup>c</sup>, personal computer<sup>c</sup>, power cable<sup>c</sup>, smartphone<sup>c</sup>, smartwatch<sup>c</sup>, tablet computer<sup>c</sup>, 2 in 1 p

```
cc, housing (engineering)c, cablec, Computerc, Coverc, Devicec, HardCoverc, Laptopc, NotPortableDevicec, PortableDevicec, ProductCatalogc, SellingCatalogc, Smartphonec, Smartwatchc, SoftCoverc, Stereoc, StockCatalogc, Tabletc, 2in1c, catalogc
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housing (engineering)<sup>c</sup>
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**IRI:** http://www.productontology.org/id/Housing\_(engineering)

#### is equivalent to

Cover<sup>c</sup>

# has super-classes

**Accessory**<sup>C</sup>

# has sub-classes

HardCover<sup>c</sup>, SoftCover<sup>c</sup>

# is disjoint with

(collections) Bag<sup>c</sup>, Collection<sup>c</sup>, list<sup>c</sup>, headphones<sup>c</sup>, laptop<sup>c</sup>, loudspeaker<sup>c</sup>, personal computer<sup>c</sup>, power cable<sup>c</sup>, smartphone<sup>c</sup>, smartwatch<sup>c</sup>, tablet computer<sup>c</sup>, 2 in 1 p c<sup>c</sup>, cable<sup>c</sup>, Computer<sup>c</sup>, Device<sup>c</sup>, EarPlugs<sup>c</sup>, Laptop<sup>c</sup>, NotPortableDevice<sup>c</sup>, PortableDevice<sup>c</sup>, ProductCatalog<sup>c</sup>, SellingCatalog<sup>c</sup>, Smartphone<sup>c</sup>, Smartwatch<sup>c</sup>, Stereo<sup>c</sup>, StockCatalog<sup>c</sup>, Tablet<sup>c</sup>, 2in1<sup>c</sup>, catalog<sup>c</sup>

# item<sup>c</sup>

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IRI: http://www.ontologydesignpatterns.org/cp/owl/bag.owl#ltem

Item - Element belonging to a Bag

#### has super-classes

thingc

item content<sup>op</sup> exactly 1

#### has sub-classes

list item<sup>c</sup>

#### is in domain of

item contentop, item ofop

# is in range of

has itemop

#### has members

AirPods wirelessCharge<sup>ni</sup>, AppleWatchSeries6 40mm GPS Cellular<sup>ni</sup>, Beats cuffie<sup>ni</sup>, Lightning cable<sup>ni</sup>, MacBookAir M1<sup>ni</sup>, SamsungGalaxyS10 global<sup>ni</sup>, SamsungGalaxyS20 5G global<sup>ni</sup>, USBC cable<sup>ni</sup>, ZenBookFlip S UX371<sup>ni</sup>, iMac 27 RetinaDisplay 5k 256<sup>ni</sup>, iPadAir 2020<sup>ni</sup>, iPhone11 64<sup>ni</sup>, iPhone12 64<sup>ni</sup>, iPhoneX 64<sup>ni</sup>

#### is disjoint with

(collections) Bag<sup>c</sup>, Collection<sup>c</sup>, list<sup>c</sup>, ProductCatalog<sup>c</sup>, SellingCatalog<sup>c</sup>, StockCatalog<sup>c</sup>, catalog<sup>c</sup>

# ITEngineering<sup>c</sup>

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IRI: https://evilscript.altervista.org/productCatalog.owl#ITEngineering

An Engineering part of the Manufacturer process that specifically contributes to making machines and IT devices

#### is equivalent to

designs<sup>op</sup> min 1 Device<sup>c</sup>

### has super-classes

**Engineering**<sup>C</sup>

#### has members

Asus<sup>ni</sup>, Foxconn<sup>ni</sup>, ShortEngineer<sup>ni</sup>

# is disjoint with

**Factory**<sup>c</sup>

# laptop<sup>c</sup>

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**IRI:** http://www.productontology.org/id/Laptop

# is equivalent to

Laptop<sup>c</sup>

# has super-classes

PortableDevice<sup>c</sup>

#### has members

MacBookAir M1ni

#### is disjoint with

(collections) Bag<sup>c</sup>, Collection<sup>c</sup>, list<sup>c</sup>, headphones<sup>c</sup>, loudspeaker<sup>c</sup>, personal computer<sup>c</sup>, power cable<sup>c</sup>, smartphone<sup>c</sup>, smartwatch<sup>c</sup>, housing (engineering)<sup>c</sup>, Accessory<sup>c</sup>, cable<sup>c</sup>, Computer<sup>c</sup>, Cover<sup>c</sup>, EarPlugs<sup>c</sup>, HardCover<sup>c</sup>, NotPortableDevice<sup>c</sup>, ProductCatalog<sup>c</sup>, SellingCatalog<sup>c</sup>, Smartphone<sup>c</sup>, Smartwatch<sup>c</sup>, SoftCover<sup>c</sup>, Stereo<sup>c</sup>, StockCatalog<sup>c</sup>, catalog<sup>c</sup>

# Laptop<sup>c</sup>

back to ToC or Class ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#Laptop

A small portable personal computer

#### has super-classes

Portable Device<sup>c</sup>

# has members

MacBookAir M1<sup>ni</sup>

#### is disjoint with

(collections) Bag<sup>c</sup>, Collection<sup>c</sup>, list<sup>c</sup>, headphones<sup>c</sup>, loudspeaker<sup>c</sup>, personal computer<sup>c</sup>, power cable<sup>c</sup>, smartphone<sup>c</sup>, smartwatch<sup>c</sup>, housing (engineering)<sup>c</sup>,

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<u>Accessory</u><sup>c</sup>, <u>cable</u><sup>c</sup>, <u>Computer</u><sup>c</sup>, <u>Cover</u><sup>c</sup>, <u>EarPlugs</u><sup>c</sup>, <u>HardCover</u><sup>c</sup>, <u>NotPortableDevice</u><sup>c</sup>, <u>ProductCatalog</u><sup>c</sup>, <u>SellingCatalog</u><sup>c</sup>, <u>Smartphone</u><sup>c</sup>, <u>Smartwatch</u><sup>c</sup>, <u>SoftCover</u><sup>c</sup>, <u>Stereo</u><sup>c</sup>, <u>StockCatalog</u><sup>c</sup>, <u>catalog</u><sup>c</sup>
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```
list<sup>c</sup>
```

back to ToC or Class ToC

IRI: http://www.ontologydesignpatterns.org/cp/owl/list.owl#List

List - An ordered array of items, that can be present in multiple copies

#### has super-classes

(collections) Bag<sup>c</sup>

#### is in domain of

has first itemop, has last itemop

### is in range of

first item of<sup>op</sup>, last item of<sup>op</sup>

#### has members

<u>AppleAccessories<sup>ni</sup></u>, <u>AppleMobile<sup>ni</sup></u>, <u>ApplePC<sup>ni</sup></u>, <u>AsusPC<sup>ni</sup></u>, <u>BeatsEarPlugs<sup>ni</sup></u>, <u>SamsungAccessories<sup>ni</sup>, SamsungGalaxy<sup>ni</sup></u>

# is disjoint with

item<sup>c</sup>, list item<sup>c</sup>, headphones<sup>c</sup>, laptop<sup>c</sup>, loudspeaker<sup>c</sup>, personal computer<sup>c</sup>, power cable<sup>c</sup>, smartphone<sup>c</sup>, smartwatch<sup>c</sup>, tablet computer<sup>c</sup>, 2 in 1 p c<sup>c</sup>, housing (engineering)<sup>c</sup>, product (business)<sup>c</sup>, Accessory<sup>c</sup>, cable<sup>c</sup>, Computer<sup>c</sup>, Cover<sup>c</sup>, Device<sup>c</sup>, EarPlugs<sup>c</sup>, HardCover<sup>c</sup>, Laptop<sup>c</sup>, NotPortableDevice<sup>c</sup>, PortableDevice<sup>c</sup>, product high<sup>c</sup>, product low<sup>c</sup>, product medium<sup>c</sup>, Smartphone<sup>c</sup>, Smartwatch<sup>c</sup>, SoftCover<sup>c</sup>, Stereo<sup>c</sup>, Tablet<sup>c</sup>, 2in1<sup>c</sup>

# list item<sup>c</sup>

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**IRI:** http://www.ontologydesignpatterns.org/cp/owl/list.owl#ListItem

ListItem - Element belonging to a list

#### has super-classes

item<sup>c</sup>

#### has sub-classes

Product<sup>c</sup>, product (business)<sup>c</sup>

#### is in domain of

first item of op, last item of op, next item op, previous item op

#### is in range of

has first item<sup>op</sup>, has last item<sup>op</sup>, next item<sup>op</sup>, previous item<sup>op</sup>

#### has members

AirPods wirelessCharge<sup>ni</sup>, AppleWatchSeries6 40mm GPS Cellular<sup>ni</sup>,

Beats cuffie<sup>ni</sup>, Lightning cable<sup>ni</sup>, MacBookAir M1<sup>ni</sup>,

SamsungGalaxyS10 global<sup>ni</sup>, SamsungGalaxyS20 5G global<sup>ni</sup>,

USBC cable<sup>ni</sup>, ZenBookFlip S UX371<sup>ni</sup>, iMac 27 RetinaDisplay 5k 256<sup>ni</sup>,

iPadAir 2020<sup>ni</sup>, iPhone11 64<sup>ni</sup>, iPhone12 64<sup>ni</sup>, iPhoneX 64<sup>ni</sup>

#### is disjoint with

<u>(collections)</u> Bag<sup>c</sup>, <u>Collection</u><sup>c</sup>, <u>list</u><sup>c</sup>, <u>ProductCatalog</u><sup>c</sup>, <u>SellingCatalog</u><sup>c</sup>, <u>StockCatalog</u><sup>c</sup>, <u>catalog</u><sup>c</sup>

# loudspeaker<sup>c</sup>

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IRI: http://www.productontology.org/id/Loudspeaker

### is equivalent to

Stereo<sup>c</sup>

### has super-classes

NotPortableDevice<sup>c</sup>

## is disjoint with

(collections) Bag<sup>c</sup>, Collection<sup>c</sup>, list<sup>c</sup>, headphones<sup>c</sup>, laptop<sup>c</sup>, personal computer<sup>c</sup>, power cable<sup>c</sup>, smartphone<sup>c</sup>, smartwatch<sup>c</sup>, tablet computer<sup>c</sup>, 2 in 1 pc<sup>c</sup>, housing (engineering)<sup>c</sup>, Accessory<sup>c</sup>, cable<sup>c</sup>, Computer<sup>c</sup>, Cover<sup>c</sup>, EarPlugs<sup>c</sup>, HardCover<sup>c</sup>, Laptop<sup>c</sup>, PortableDevice<sup>c</sup>, ProductCatalog<sup>c</sup>, SellingCatalog<sup>c</sup>, Smartphone<sup>c</sup>, Smartwatch<sup>c</sup>, SoftCover<sup>c</sup>, StockCatalog<sup>c</sup>, Tablet<sup>c</sup>, 2in1<sup>c</sup>, catalog<sup>c</sup>

# Manufacturer<sup>c</sup>

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IRI: https://evilscript.altervista.org/productCatalog.owl#Manufacturer

The part of the company specifically addressed to engineer and produce the X product

#### is equivalent to

{ <u>Apple</u>, <u>Asus</u>, <u>BeatsAudio</u>, <u>Foxconn</u>, <u>Huáshuò</u>, <u>Qualcomm</u>, <u>Samsung</u>, <u>ShortEngineer</u>}

# has super-classes

Company<sup>c</sup>

#### has sub-classes

Engineering<sup>c</sup>, Factory<sup>c</sup>

# is in domain of

isManufacturerOf<sup>op</sup>

#### is in range of

manufacturersTo<sup>op</sup>

#### has members

<u>Apple<sup>ni</sup>, Asus<sup>ni</sup>, BeatsAudio<sup>ni</sup>, Foxconn<sup>ni</sup>, Huáshuò<sup>ni</sup>, Qualcomm<sup>ni</sup>, Samsung<sup>ni</sup>, ShortEngineer<sup>ni</sup>, ShortFactory<sup>ni</sup></u>

#### NotPortableDevice<sup>C</sup>

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IRI: https://evilscript.altervista.org/productCatalog.owl#NotPortableDevice

A device that is not made to be moved from the initial position

#### has super-classes

Device<sup>c</sup>

#### has sub-classes

Computer<sup>c</sup>, Stereo<sup>c</sup>, loudspeaker<sup>c</sup>, personal computer<sup>c</sup>

#### has members

iMac 27 RetinaDisplay 5k 256ni

#### is disjoint with

(collections) Bag<sup>c</sup>, Collection<sup>c</sup>, list<sup>c</sup>, headphones<sup>c</sup>, laptop<sup>c</sup>, power cable<sup>c</sup>, smartphone<sup>c</sup>, smartwatch<sup>c</sup>, tablet computer<sup>c</sup>, 2 in 1 p c<sup>c</sup>, housing (engineering)<sup>c</sup>, Accessory<sup>c</sup>, cable<sup>c</sup>, Cover<sup>c</sup>, EarPlugs<sup>c</sup>, HardCover<sup>c</sup>, Laptop<sup>c</sup>, PortableDevice<sup>c</sup>, ProductCatalog<sup>c</sup>, SellingCatalog<sup>c</sup>, Smartphone<sup>c</sup>, Smartwatch<sup>c</sup>, SoftCover<sup>c</sup>, StockCatalog<sup>c</sup>, Tablet<sup>c</sup>, 2in1<sup>c</sup>, catalog<sup>c</sup>

# personal computer<sup>c</sup>

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**IRI:** http://www.productontology.org/id/Personal\_computer

# is equivalent to

Computer<sup>c</sup>

### has super-classes

NotPortableDevice<sup>c</sup>

#### has members

iMac 27 RetinaDisplay 5k 256ni

### is disjoint with

(collections) Bag<sup>c</sup>, Collection<sup>c</sup>, list<sup>c</sup>, headphones<sup>c</sup>, laptop<sup>c</sup>, loudspeaker<sup>c</sup>, power cable<sup>c</sup>, smartphone<sup>c</sup>, smartwatch<sup>c</sup>, tablet computer<sup>c</sup>, 2 in 1 p c<sup>c</sup>, housing (engineering)<sup>c</sup>, Accessory<sup>c</sup>, cable<sup>c</sup>, Cover<sup>c</sup>, EarPlugs<sup>c</sup>, HardCover<sup>c</sup>, Laptop<sup>c</sup>, PortableDevice<sup>c</sup>, ProductCatalog<sup>c</sup>, SellingCatalog<sup>c</sup>, Smartphone<sup>c</sup>, Smartwatch<sup>c</sup>, SoftCover<sup>c</sup>, Stereo<sup>c</sup>, StockCatalog<sup>c</sup>, Tablet<sup>c</sup>, 2in1<sup>c</sup>, catalog<sup>c</sup>

### Portable Device<sup>C</sup>

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**IRI:** https://evilscript.altervista.org/productCatalog.owl#PortableDevice

A device made for everyday life

#### has super-classes

Device<sup>c</sup>

#### has sub-classes

<u>2 in 1 p c<sup>c</sup></u>, <u>2in1<sup>c</sup></u>, <u>Laptop<sup>c</sup></u>, <u>Smartphone<sup>c</sup></u>, <u>Smartwatch<sup>c</sup></u>, <u>Tablet<sup>c</sup></u>, <u>Iaptop<sup>c</sup></u>, <u>smartphone<sup>c</sup></u>, <u>smartwatch<sup>c</sup></u>, <u>tablet computer<sup>c</sup></u>

#### is in range of

fitForop

#### has members

<u>AppleWatchSeries6\_40mm\_GPS\_Cellular</u><sup>ni</sup>, <u>MacBookAir\_M1</u><sup>ni</sup>, <u>SamsungGalaxyS10\_global</u><sup>ni</sup>, <u>SamsungGalaxyS20\_5G\_global</u><sup>ni</sup>,

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ZenBookFlip S UX371<sup>ni</sup>, iPadAir 2020<sup>ni</sup>, iPhone11 64<sup>ni</sup>, iPhone12 64<sup>ni</sup>, iPhoneX 64<sup>ni</sup>
```

# is disjoint with

(collections) Bag<sup>c</sup>, Collection<sup>c</sup>, list<sup>c</sup>, headphones<sup>c</sup>, loudspeaker<sup>c</sup>, personal computer<sup>c</sup>, power cable<sup>c</sup>, housing (engineering)<sup>c</sup>, Accessory<sup>c</sup>, cable<sup>c</sup>, Computer<sup>c</sup>, Cover<sup>c</sup>, EarPlugs<sup>c</sup>, HardCover<sup>c</sup>, NotPortableDevice<sup>c</sup>, ProductCatalog<sup>c</sup>, SellingCatalog<sup>c</sup>, SoftCover<sup>c</sup>, Stereo<sup>c</sup>, StockCatalog<sup>c</sup>, catalog<sup>c</sup>

# power cable<sup>c</sup>

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IRI: http://www.productontology.org/id/Power\_cable

# is equivalent to

<u>cable</u><sup>c</sup>

# has super-classes

**Accessory**<sup>C</sup>

# has members

<u>Lightning cable<sup>ni</sup></u>, <u>USBC cable<sup>ni</sup></u>

# is disjoint with

(collections) Bag<sup>c</sup>, Collection<sup>c</sup>, list<sup>c</sup>, headphones<sup>c</sup>, laptop<sup>c</sup>, loudspeaker<sup>c</sup>, personal computer<sup>c</sup>, smartphone<sup>c</sup>, smartwatch<sup>c</sup>, tablet computer<sup>c</sup>, 2 in 1 p c<sup>c</sup>, housing (engineering)<sup>c</sup>, Computer<sup>c</sup>, Cover<sup>c</sup>, Device<sup>c</sup>, EarPlugs<sup>c</sup>, HardCover<sup>c</sup>, Laptop<sup>c</sup>, NotPortableDevice<sup>c</sup>, PortableDevice<sup>c</sup>, ProductCatalog<sup>c</sup>, SellingCatalog<sup>c</sup>, Smartphone<sup>c</sup>, Smartwatch<sup>c</sup>, SoftCover<sup>c</sup>, Stereo<sup>c</sup>, StockCatalog<sup>c</sup>, Tablet<sup>c</sup>, 2in1<sup>c</sup>, catalog<sup>c</sup>

# PowerUser<sup>c</sup>

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**IRI:** https://evilscript.altervista.org/productCatalog.owl#PowerUser

An expert individual using a product

#### is equivalent to

buysProduct<sup>op</sup> some product high<sup>c</sup>

### has super-classes

User<sup>c</sup>

#### has members

Giovanni<sup>ni</sup>

# is disjoint with

CasualUser<sup>c</sup>

#### Price<sup>C</sup>

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IRI: http://www.ontologydesignpatterns.org/cp/owl/price.owl#Price

is defined by

# The amount of money expected, required, or given in payment for something. has super-classes has currency op exactly 1 has value<sup>dp</sup> min 1 is in domain of has currencyop, has valuedp, is price ofop is in range of has price<sup>op</sup> has members 1000Euro<sup>ni</sup>, 10Euro<sup>ni</sup>, 1800Euro<sup>ni</sup>, 200Euro<sup>ni</sup>, 500Euro<sup>ni</sup>, 600Euro<sup>ni</sup>, 800Euro<sup>ni</sup> is disjoint with Currency<sup>c</sup> back to ToC or Class ToC Product<sup>c</sup> **IRI:** https://evilscript.altervista.org/productCatalog.owl#Product Something that is produced and used is equivalent to list item<sup>c</sup> and (isContainedIn<sup>op</sup> some ProductCatalog<sup>c</sup>) has super-classes physical object<sup>c</sup> list item<sup>c</sup> has sub-classes Accessory<sup>c</sup>, Device<sup>c</sup>, product high<sup>c</sup>, product low<sup>c</sup>, product medium<sup>c</sup> is in domain of Color<sup>dp</sup>, Customer's range the product is made to<sup>dp</sup>, Depth<sup>dp</sup>, EAN<sup>dp</sup>, Height<sup>dp</sup>, Price<sup>dp</sup>, ProductName<sup>dp</sup>, RollOutDate<sup>dp</sup>, Weight<sup>dp</sup>, Width<sup>dp</sup>, containsInBox<sup>op</sup>, designedBy<sup>op</sup>, hasBrand<sup>op</sup>, inCollabWith<sup>op</sup>, isContainedIn<sup>op</sup>, predecessorOf<sup>op</sup>, producedBy<sup>op</sup>, soldBy<sup>op</sup>, successorOf<sup>op</sup> is in range of buysProduct<sup>op</sup>, contains<sup>op</sup>, inBoxOf<sup>op</sup>, isBrandOf<sup>op</sup>. designs<sup>op</sup>, predecessorOf<sup>op</sup>, produces<sup>op</sup>, sells<sup>op</sup>, successorOf<sup>op</sup> has members AppleWatchSeries6 40mm GPS Cellularni, AirPods wirelessCharge<sup>ni</sup>. Lightning cable<sup>ni</sup>, MacBookAir M1<sup>ni</sup>, Beats cuffieni, SamsungGalaxyS20 5G globalni SamsungGalaxyS10 globalni, <u>USBC cable<sup>ni</sup></u>, <u>ZenBookFlip S UX371<sup>ni</sup></u>, <u>iMac 27 RetinaDisplay 5k 256<sup>ni</sup></u>, iPadAir 2020<sup>ni</sup>, iPhone11 64<sup>ni</sup>, iPhone12 64<sup>ni</sup>, iPhoneX 64<sup>ni</sup> is disjoint with (collections) Bag<sup>c</sup>, Collection<sup>c</sup>, list<sup>c</sup>, ProductCatalog<sup>c</sup>, SellingCatalog<sup>c</sup>, StockCatalog<sup>c</sup>, catalog<sup>c</sup>

http://www.ontologydesignpatterns.org/cp/owl/price.owl

```
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product (business)<sup>c</sup>
IRI: http://www.productontology.org/id/Product_(business)
is equivalent to
       Product<sup>c</sup>
has super-classes
       physical object<sup>c</sup>
       list item<sup>c</sup>
has sub-classes
       Accessory<sup>c</sup>, Device<sup>c</sup>, product high<sup>c</sup>, product low<sup>c</sup>, product medium<sup>c</sup>
has members
       AirPods wirelessCharge<sup>ni</sup>,
                                                   AppleWatchSeries6 40mm GPS Cellularni,
       Beats cuffie<sup>ni</sup>,
                                            Lightning cable<sup>ni</sup>,
                                                                                     MacBookAir M1<sup>ni</sup>,
       SamsungGalaxyS10 global<sup>ni</sup>,
                                                                 SamsungGalaxyS20 5G global<sup>ni</sup>,
       USBC cableni, ZenBookFlip S UX371ni, iMac 27 RetinaDisplay 5k 256ni,
       iPadAir 2020<sup>ni</sup>, iPhone11 64<sup>ni</sup>, iPhone12 64<sup>ni</sup>, iPhoneX 64<sup>ni</sup>
is disjoint with
       (collections) Bag<sup>c</sup>, Collection<sup>c</sup>, list<sup>c</sup>, ProductCatalog<sup>c</sup>, SellingCatalog<sup>c</sup>,
       StockCatalog<sup>c</sup>, catalog<sup>c</sup>
                                                                                 back to <u>ToC</u> or <u>Class ToC</u>
product high<sup>c</sup>
IRI: https://evilscript.altervista.org/productCatalog.owl#ProductHigh
is equivalent to
       Product<sup>c</sup> and (Customer's range the product is made to<sup>dp</sup> value High)
has super-classes
       product (business)<sup>c</sup>
       Product<sup>c</sup>
has members
       AppleWatchSeries6 40mm GPS Cellular<sup>nI</sup>,
       SamsungGalaxyS20_5G_global<sup>ni</sup>,
                                                                iMac 27 RetinaDisplay 5k 256<sup>ni</sup>,
       iPhone12 64<sup>ni</sup>
is disjoint with
       (collections) Bag<sup>c</sup>, Collection<sup>c</sup>, list<sup>c</sup>, ProductCatalog<sup>c</sup>, SellingCatalog<sup>c</sup>,
       StockCatalog<sup>c</sup>, catalog<sup>c</sup>
                                                                                 back to ToC or Class ToC
product low<sup>c</sup>
IRI: https://evilscript.altervista.org/productCatalog.owl#ProductLow
is equivalent to
       Product<sup>c</sup> and (Customer's range the product is made to<sup>dp</sup> value Low)
has super-classes
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product (business)<sup>c</sup>
       Product<sup>c</sup>
is disjoint with
       (collections) Bag<sup>c</sup>, Collection<sup>c</sup>, list<sup>c</sup>, ProductCatalog<sup>c</sup>, SellingCatalog<sup>c</sup>,
        StockCatalog<sup>c</sup>, catalog<sup>c</sup>
                                                                                      back to ToC or Class ToC
product medium<sup>c</sup>
IRI: https://evilscript.altervista.org/productCatalog.owl#ProductMedium
is equivalent to
       Product<sup>c</sup> and (Customer's range the product is made to<sup>dp</sup> value Medium)
has super-classes
       product (business)<sup>c</sup>
       Product<sup>c</sup>
has members
       MacBookAir M1<sup>ni</sup>,
                                           SamsungGalaxyS10 global<sup>ni</sup>,
                                                                                              iPadAir 2020<sup>ni</sup>,
       iPhone11 64<sup>ni</sup>
is disjoint with
       (collections) Bag<sup>c</sup>, Collection<sup>c</sup>, list<sup>c</sup>, ProductCatalog<sup>c</sup>, SellingCatalog<sup>c</sup>,
       StockCatalog<sup>c</sup>, catalog<sup>c</sup>
                                                                                      back to ToC or Class ToC
ProductCatalog<sup>c</sup>
IRI: https://evilscript.altervista.org/productCatalog.owl#ProductCatalog
A catalog of products
is equivalent to
       catalog
       contains op some Product c
has super-classes
       thing<sup>c</sup>
has sub-classes
       (collections) Bag<sup>c</sup>, SellingCatalog<sup>c</sup>, StockCatalog<sup>c</sup>
is in domain of
       containsop
is in range of
       hasCatalog<sup>op</sup>, isContainedIn<sup>op</sup>
has members
       AppleAccessories<sup>ni</sup>, AppleCatalog<sup>ni</sup>, AppleMobile<sup>ni</sup>, ApplePC<sup>ni</sup>, AsusCatalog<sup>ni</sup>,
                         BeatsEarPlugs<sup>ni</sup>, SamsungAccessories<sup>ni</sup>, SamsungCatalog<sup>ni</sup>,
       AsusPCni,
       SamsungGalaxy<sup>ni</sup>
is disjoint with
       item<sup>c</sup>, list item<sup>c</sup>, headphones<sup>c</sup>, laptop<sup>c</sup>, loudspeaker<sup>c</sup>, personal computer<sup>c</sup>,
        <u>power cable<sup>c</sup>, smartphone<sup>c</sup>, smartwatch<sup>c</sup>, tablet computer<sup>c</sup>, 2 in 1</u>
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housing (engineering)<sup>c</sup>, product (business)<sup>c</sup>, Accessory<sup>c</sup>, cable<sup>c</sup>, Computer<sup>c</sup>, Cover<sup>c</sup>, Device<sup>c</sup>, EarPlugs<sup>c</sup>, HardCover<sup>c</sup>, Laptop<sup>c</sup>, NotPortableDevice<sup>c</sup>, PortableDevice<sup>c</sup>, product high<sup>c</sup>, product low<sup>c</sup>, product medium<sup>c</sup>, Smartphone<sup>c</sup>, Smartwatch<sup>c</sup>, SoftCover<sup>c</sup>, Stereo<sup>c</sup>, Tablet<sup>c</sup>, 2in1<sup>c</sup>
```

# SellingCatalog<sup>c</sup>

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IRI: https://evilscript.altervista.org/productCatalog.owl#SellingCatalog

A catalog of products made to be sold

#### has super-classes

Collection<sup>c</sup>

**ProductCatalog**<sup>c</sup>

catalog<sup>c</sup>

#### is in domain of

<u>containsBrandop</u>

# is in range of

brandContainedInop, buysFromop

#### has members

AppleCatalogni, AsusCatalogni, SamsungCatalogni

# is disjoint with

item<sup>c</sup>, list item<sup>c</sup>, headphones<sup>c</sup>, laptop<sup>c</sup>, loudspeaker<sup>c</sup>, personal computer<sup>c</sup>, power cable<sup>c</sup>, smartphone<sup>c</sup>, smartwatch<sup>c</sup>, tablet computer<sup>c</sup>, 2 in 1 p c<sup>c</sup>, housing (engineering)<sup>c</sup>, product (business)<sup>c</sup>, Accessory<sup>c</sup>, cable<sup>c</sup>, Computer<sup>c</sup>, Cover<sup>c</sup>, Device<sup>c</sup>, EarPlugs<sup>c</sup>, HardCover<sup>c</sup>, Laptop<sup>c</sup>, NotPortableDevice<sup>c</sup>, PortableDevice<sup>c</sup>, product high<sup>c</sup>, product low<sup>c</sup>, product medium<sup>c</sup>, Smartphone<sup>c</sup>, Smartwatch<sup>c</sup>, SoftCover<sup>c</sup>, Stereo<sup>c</sup>, StockCatalog<sup>c</sup>, Tablet<sup>c</sup>, 2in1<sup>c</sup>

# smartphone<sup>c</sup>

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IRI: http://www.productontology.org/id/Smartphone

#### is equivalent to

**Smartphone**<sup>C</sup>

#### has super-classes

PortableDevice<sup>c</sup>

#### has members

SamsungGalaxyS10\_global<sup>ni</sup>, SamsungGalaxyS20\_5G\_global<sup>ni</sup>, iPhone11\_64<sup>ni</sup>, iPhone12\_64<sup>ni</sup>, iPhoneX\_64<sup>ni</sup>

# is disjoint with

(collections) Bag<sup>c</sup>, Collection<sup>c</sup>, list<sup>c</sup>, headphones<sup>c</sup>, laptop<sup>c</sup>, loudspeaker<sup>c</sup>, personal computer<sup>c</sup>, power cable<sup>c</sup>, smartwatch<sup>c</sup>, tablet computer<sup>c</sup>, 2 in 1 p c<sup>c</sup>, housing (engineering)<sup>c</sup>, Accessory<sup>c</sup>, cable<sup>c</sup>, Computer<sup>c</sup>, Cover<sup>c</sup>, EarPlugs<sup>c</sup>, HardCover<sup>c</sup>, Laptop<sup>c</sup>, NotPortableDevice<sup>c</sup>, ProductCatalog<sup>c</sup>, SellingCatalog<sup>c</sup>, Smartwatch<sup>c</sup>, SoftCover<sup>c</sup>, Stereo<sup>c</sup>, StockCatalog<sup>c</sup>, Tablet<sup>c</sup>, 2in1<sup>c</sup>, catalog<sup>c</sup>

# Smartphone<sup>c</sup>

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IRI: https://evilscript.altervista.org/productCatalog.owl#Smartphone

Mobile device that combines cellular and mobile computing functions into one unit

#### has super-classes

PortableDevice<sup>c</sup>

#### is in range of

needsConnectionWith<sup>op</sup>

#### has members

<u>SamsungGalaxyS10\_global<sup>ni</sup></u>, <u>SamsungGalaxyS20\_5G\_global<sup>ni</sup></u>, <u>iPhone11\_64<sup>ni</sup></u>, <u>iPhone12\_64<sup>ni</sup></u>, <u>iPhoneX\_64<sup>ni</sup></u>

# is disjoint with

(collections) Bag<sup>c</sup>, Collection<sup>c</sup>, list<sup>c</sup>, headphones<sup>c</sup>, laptop<sup>c</sup>, loudspeaker<sup>c</sup>, personal computer<sup>c</sup>, power cable<sup>c</sup>, smartwatch<sup>c</sup>, tablet computer<sup>c</sup>, 2 in 1 p c<sup>c</sup>, housing (engineering)<sup>c</sup>, Accessory<sup>c</sup>, cable<sup>c</sup>, Computer<sup>c</sup>, Cover<sup>c</sup>, EarPlugs<sup>c</sup>, HardCover<sup>c</sup>, Laptop<sup>c</sup>, NotPortableDevice<sup>c</sup>, ProductCatalog<sup>c</sup>, SellingCatalog<sup>c</sup>, Smartwatch<sup>c</sup>, SoftCover<sup>c</sup>, Stereo<sup>c</sup>, StockCatalog<sup>c</sup>, Tablet<sup>c</sup>, 2in1<sup>c</sup>, catalog<sup>c</sup>

#### smartwatch<sup>C</sup>

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IRI: http://www.productontology.org/id/Smartwatch

#### is equivalent to

Smartwatch<sup>c</sup>

#### has super-classes

Portable Device<sup>c</sup>

#### has members

AppleWatchSeries6 40mm GPS Cellularni

#### is disjoint with

(collections) Bag<sup>c</sup>, Collection<sup>c</sup>, list<sup>c</sup>, headphones<sup>c</sup>, laptop<sup>c</sup>, loudspeaker<sup>c</sup>, personal computer<sup>c</sup>, power cable<sup>c</sup>, smartphone<sup>c</sup>, tablet computer<sup>c</sup>, 2 in 1 p c<sup>c</sup>, housing (engineering)<sup>c</sup>, Accessory<sup>c</sup>, cable<sup>c</sup>, Computer<sup>c</sup>, Cover<sup>c</sup>, EarPlugs<sup>c</sup>, HardCover<sup>c</sup>, Laptop<sup>c</sup>, NotPortableDevice<sup>c</sup>, ProductCatalog<sup>c</sup>, SellingCatalog<sup>c</sup>, Smartphone<sup>c</sup>, SoftCover<sup>c</sup>, Stereo<sup>c</sup>, StockCatalog<sup>c</sup>, Tablet<sup>c</sup>, 2in1<sup>c</sup>, catalog<sup>c</sup>

#### Smartwatch<sup>c</sup>

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IRI: https://evilscript.altervista.org/productCatalog.owl#Smartwatch

Wearable computer in the form of a watch

#### has super-classes

PortableDevice<sup>C</sup>

is in domain of

# needsConnectionWith<sup>op</sup>

#### has members

AppleWatchSeries6 40mm GPS Cellularni

# is disjoint with

(collections) Bag<sup>c</sup>, Collection<sup>c</sup>, list<sup>c</sup>, headphones<sup>c</sup>, laptop<sup>c</sup>, loudspeaker<sup>c</sup>, personal computer<sup>c</sup>, power cable<sup>c</sup>, smartphone<sup>c</sup>, tablet computer<sup>c</sup>, 2 in 1 p c<sup>c</sup>, housing (engineering)<sup>c</sup>, Accessory<sup>c</sup>, cable<sup>c</sup>, Computer<sup>c</sup>, Cover<sup>c</sup>, EarPlugs<sup>c</sup>, HardCover<sup>c</sup>, Laptop<sup>c</sup>, NotPortableDevice<sup>c</sup>, ProductCatalog<sup>c</sup>, SellingCatalog<sup>c</sup>, Smartphone<sup>c</sup>, SoftCover<sup>c</sup>, Stereo<sup>c</sup>, StockCatalog<sup>c</sup>, Tablet<sup>c</sup>, 2in1<sup>c</sup>, catalog<sup>c</sup>

# SoftCover<sup>c</sup>

back to <u>ToC</u> or <u>Class ToC</u>

IRI: https://evilscript.altervista.org/productCatalog.owl#SoftCover

A soft cover

#### has super-classes

housing (engineering)<sup>c</sup> Cover<sup>c</sup>

# is disjoint with

(collections) Bag<sup>c</sup>, Collection<sup>c</sup>, list<sup>c</sup>, headphones<sup>c</sup>, laptop<sup>c</sup>, loudspeaker<sup>c</sup>, personal computer<sup>c</sup>, power cable<sup>c</sup>, smartphone<sup>c</sup>, smartwatch<sup>c</sup>, tablet computer<sup>c</sup>, 2 in 1 p c<sup>c</sup>, cable<sup>c</sup>, Computer<sup>c</sup>, Device<sup>c</sup>, EarPlugs<sup>c</sup>, HardCover<sup>c</sup>, Laptop<sup>c</sup>, NotPortableDevice<sup>c</sup>, PortableDevice<sup>c</sup>, ProductCatalog<sup>c</sup>, SellingCatalog<sup>c</sup>, Smartphone<sup>c</sup>, Smartwatch<sup>c</sup>, Stereo<sup>c</sup>, StockCatalog<sup>c</sup>, Tablet<sup>c</sup>, 2in1<sup>c</sup>, catalog<sup>c</sup>

# Stereo<sup>c</sup>

back to <u>ToC</u> or <u>Class ToC</u>

IRI: https://evilscript.altervista.org/productCatalog.owl#Stereo

A big device made for listening to music

#### has super-classes

NotPortableDevice<sup>c</sup>

# is disjoint with

(collections) Bag<sup>c</sup>, Collection<sup>c</sup>, list<sup>c</sup>, headphones<sup>c</sup>, laptop<sup>c</sup>, personal computer<sup>c</sup>, power cable<sup>c</sup>, smartphone<sup>c</sup>, smartwatch<sup>c</sup>, tablet computer<sup>c</sup>, 2 in 1 p c<sup>c</sup>, housing (engineering)<sup>c</sup>, Accessory<sup>c</sup>, cable<sup>c</sup>, Computer<sup>c</sup>, Cover<sup>c</sup>, EarPlugs<sup>c</sup>, HardCover<sup>c</sup>, Laptop<sup>c</sup>, PortableDevice<sup>c</sup>, ProductCatalog<sup>c</sup>, SellingCatalog<sup>c</sup>, Smartphone<sup>c</sup>, Smartwatch<sup>c</sup>, SoftCover<sup>c</sup>, StockCatalog<sup>c</sup>, Tablet<sup>c</sup>, 2in1<sup>c</sup>, catalog<sup>c</sup>

# StockCatalog<sup>c</sup>

back to ToC or Class ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#StockCatalog

```
A catalog of products made to keep track of stock coverage
```

# has super-classes

Collection<sup>c</sup>
ProductCatalog<sup>c</sup>
catalog<sup>c</sup>

# is disjoint with

item<sup>c</sup>, list item<sup>c</sup>, headphones<sup>c</sup>, laptop<sup>c</sup>, loudspeaker<sup>c</sup>, personal computer<sup>c</sup>, power cable<sup>c</sup>, smartphone<sup>c</sup>, smartwatch<sup>c</sup>, tablet computer<sup>c</sup>, 2 in 1 p c<sup>c</sup>, housing (engineering)<sup>c</sup>, product (business)<sup>c</sup>, Accessory<sup>c</sup>, cable<sup>c</sup>, Computer<sup>c</sup>, Cover<sup>c</sup>, Device<sup>c</sup>, EarPlugs<sup>c</sup>, HardCover<sup>c</sup>, Laptop<sup>c</sup>, NotPortableDevice<sup>c</sup>, PortableDevice<sup>c</sup>, Product<sup>c</sup>, product high<sup>c</sup>, product low<sup>c</sup>, product medium<sup>c</sup>, SellingCatalog<sup>c</sup>, Smartphone<sup>c</sup>, Smartwatch<sup>c</sup>, SoftCover<sup>c</sup>, Stereo<sup>c</sup>, Tablet<sup>c</sup>, 2in1<sup>c</sup>

# Tablet<sup>c</sup>

back to ToC or Class ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#Tablet

Mobile device, typically with a mobile operating system and touchscreen display processing circuitry, and a rechargeable battery in a single, thin and flat package

# has super-classes

PortableDevice<sup>c</sup>

#### has members

iPadAir 2020ni

#### is disjoint with

(collections) Bag<sup>c</sup>, Collection<sup>c</sup>, list<sup>c</sup>, headphones<sup>c</sup>, loudspeaker<sup>c</sup>, personal computer<sup>c</sup>, power cable<sup>c</sup>, smartphone<sup>c</sup>, smartwatch<sup>c</sup>, housing (engineering)<sup>c</sup>, Accessory<sup>c</sup>, cable<sup>c</sup>, Computer<sup>c</sup>, Cover<sup>c</sup>, EarPlugs<sup>c</sup>, HardCover<sup>c</sup>, NotPortableDevice<sup>c</sup>, ProductCatalog<sup>c</sup>, SellingCatalog<sup>c</sup>, Smartphone<sup>c</sup>, Smartwatch<sup>c</sup>, SoftCover<sup>c</sup>, Stereo<sup>c</sup>, StockCatalog<sup>c</sup>, catalog<sup>c</sup>

# tablet computer<sup>c</sup>

back to ToC or Class ToC

IRI: http://www.productontology.org/id/Tablet computer

#### is equivalent to

Tablet<sup>c</sup>

#### has super-classes

PortableDevice<sup>c</sup>

#### has members

iPadAir 2020<sup>ni</sup>

#### is disjoint with

(collections) Bag<sup>c</sup>, Collection<sup>c</sup>, list<sup>c</sup>, headphones<sup>c</sup>, loudspeaker<sup>c</sup>, personal computer<sup>c</sup>, power cable<sup>c</sup>, smartphone<sup>c</sup>, smartwatch<sup>c</sup>, housing (engineering)<sup>c</sup>, Accessory<sup>c</sup>, cable<sup>c</sup>, Computer<sup>c</sup>, Cover<sup>c</sup>, EarPlugs<sup>c</sup>, HardCover<sup>c</sup>,

NotPortableDevice<sup>c</sup>, <u>ProductCatalog</u><sup>c</sup>, <u>SellingCatalog</u><sup>c</sup>, <u>Smartphone</u><sup>c</sup>, Smartwatch<sup>c</sup>, <u>SoftCover</u><sup>c</sup>, <u>Stereo</u><sup>c</sup>, <u>StockCatalog</u><sup>c</sup>, catalog<sup>c</sup>

User<sup>c</sup>

back to ToC or Class ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#User

An individual using a product

has super-classes

person<sup>c</sup>

has sub-classes

CasualUser<sup>c</sup>, PowerUser<sup>c</sup>

is in domain of

buysFromop, buysProductop

has members

Giovannini, Michelani

# **Object Properties**

brandContainedIn buysFrom buysProduct collabsWith compatibleWith contains containsBrand containsInBox designedBy designs directly follows directly precedes first item of fitFor follows has currency has first item has item has last item has member has price hasBrand hasCatalog hasProducer inBoxOf inCollabWith is member of is price of isBrandOf isContainedIn isManufacturerOf item content item of last item of manufacturersTo needsConnectionWith next item precedes predecessorOf previous item producedBy produces putInBoxes sells soldBy successorOf

### brandContainedInop

back to ToC or Object Property ToC

**IRI:** https://evilscript.altervista.org/productCatalog.owl#brandContainedIn

Shows if a company is listed on a Selling Catalog

has characteristics: transitive

has super-properties

top object property

has domain

Company<sup>c</sup>

has range

SellingCatalog<sup>c</sup>

is inverse of

containsBrand<sup>op</sup>

# buysFromop

back to ToC or Object Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#buysFrom

Shows what user is buying from the X selling catalog

# has super-properties

top object property

has domain

User<sup>c</sup>

has range

SellingCatalog<sup>c</sup>

has sub-property chains

buysProductop o isContainedInop

# buysProduct<sup>op</sup>

back to ToC or Object Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#buysProduct

Shows what product is the user buying

#### has super-properties

top object property

has domain

User<sup>c</sup>

has range

Product<sup>c</sup>

# collabsWithop

back to ToC or Object Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#collabsWith

Shows company collaborations to create a certain product

has characteristics: symmetric

#### has super-properties

top object property

has domain

Company

has range

**Company**<sup>c</sup>

is inverse of

collabsWithop, collabsWithop

has sub-property chains

sells<sup>op</sup> o inCollabWith<sup>op</sup>

# compatibleWithop

back to ToC or Object Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#compatibleWith

Checking the compatibility between accessories and devices

has super-properties

top object property

has domain

Accessory<sup>c</sup> or Device<sup>c</sup>

has range

<u>Device</u><sup>c</sup>

# containsop

back to ToC or Object Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#contains

Availability of a product in a product catalog

has characteristics: asymmetric, transitive, irreflexive

has super-properties

top object property

has domain

ProductCatalog<sup>c</sup>

has range

Product<sup>c</sup>

is inverse of

isContainedIn<sup>op</sup>

has sub-property chains

has memberop o has itemop

# containsBrand<sup>op</sup>

back to ToC or Object Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#containsBrand

Company that sells products in SellingCatalog

has characteristics: transitive

has super-properties

top object property

has domain

<u>SellingCatalog</u><sup>c</sup>

has range

Company

is inverse of

# brandContainedInop

### has sub-property chains

containsop o hasBrandop

# containsInBox<sup>op</sup>

back to ToC or Object Property ToC

**IRI:** https://evilscript.altervista.org/productCatalog.owl#containsInBox

Shows the items inside a product box

has characteristics: transitive

has super-properties

top object property

has domain

Product<sup>c</sup>

has range

<u>Accessory</u><sup>c</sup>

is inverse of

inBoxOfop

# designedByop

back to ToC or Object Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#designedBy

Who made the design of a product

has characteristics: functional

has super-properties

top object property

has domain

**Product<sup>c</sup>** 

has range

Engineering<sup>c</sup>

is inverse of

designsop

# designsop

back to ToC or Object Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#designs

Who made the design of a product

# has super-properties

top object property

has domain

Engineering<sup>c</sup>

has range

Product<sup>c</sup>

is inverse of

designedBy<sup>op</sup>

# directly followsop

back to <u>ToC</u> or <u>Object Property ToC</u>

IRI: http://www.ontologydesignpatterns.org/cp/owl/sequence.owl#directlyFollows

# is defined by

http://www.ontologydesignpatterns.org/cp/owl/sequence.owl

The intransitive follows relation. For example, Wednesday directly precedes Thursday. Directness of precedence depends on the designer conceptualization.

has super-properties

followsop

has sub-properties

next itemop

has domain

thingc

has range

thing<sup>c</sup>

is inverse of

directly precedes<sup>op</sup>

# directly precedes<sup>op</sup>

back to ToC or Object Property ToC

IRI: http://www.ontologydesignpatterns.org/cp/owl/sequence.owl#directlyPrecedes

# is defined by

http://www.ontologydesignpatterns.org/cp/owl/sequence.owl

The intransitive precedes relation. For example, Monday directly precedes Tuesday. Directness of precedence depends on the designer conceptualization.

### has super-properties

precedesop

has sub-properties

previous itemop

has domain

thing<sup>c</sup>

has range

thingc

is inverse of

directly follows<sup>op</sup>

# first item of op

back to ToC or Object Property ToC

IRI: http://www.ontologydesignpatterns.org/cp/owl/list.owl#firstItemOf

# has super-properties

item of op

has domain

list item<sup>c</sup>

has range

list<sup>C</sup>

is inverse of

has first itemop

# fitForop

back to ToC or Object Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#fitFor

Checking the compatibility between a cover and its device

# has super-properties

top object property

has domain

Cover<sup>c</sup>

has range

PortableDevice<sup>c</sup>

# followsop

back to ToC or Object Property ToC

IRI: http://www.ontologydesignpatterns.org/cp/owl/sequence.owl#follows

### is defined by

http://www.ontologydesignpatterns.org/cp/owl/sequence.owl

A relation between entities, expressing a 'sequence' schema. E.g. 'year 2000 follows 1999', 'preparing coffee' follows 'deciding what coffee to use', 'II World War follows I World War', etc. It can be used between tasks, processes or time intervals, and subproperties would fit best in order to distinguish the different uses.

has characteristics: transitive

has sub-properties

directly follows op

has domain

thing<sup>c</sup>

has range

thingc

is inverse of

precedesop

# has currency<sup>op</sup>

back to <u>ToC</u> or <u>Object Property ToC</u>

IRI: http://www.ontologydesignpatterns.org/cp/owl/price.owl#hasCurrency

## is defined by

http://www.ontologydesignpatterns.org/cp/owl/price.owl

has domain

Price<sup>c</sup>

has range

**Currency**<sup>C</sup>

# has first itemop

back to ToC or Object Property ToC

**IRI:** http://www.ontologydesignpatterns.org/cp/owl/list.owl#hasFirstItem

first item - The link to the first item of the list

has characteristics: functional

has super-properties

has itemop

has domain

list<sup>c</sup>

has range

list item<sup>c</sup>

is inverse of

first item of op

# has itemop

back to ToC or Object Property ToC

IRI: http://www.ontologydesignpatterns.org/cp/owl/bag.owl#hasItem

has item - The link to every item of the Bag

has super-properties

has member<sup>op</sup>

has sub-properties

has first itemop, has last itemop

has domain

(collections) Bag<sup>c</sup>

has range

item<sup>c</sup>

is inverse of

item of op

### has last itemop

back to ToC or Object Property ToC

IRI: http://www.ontologydesignpatterns.org/cp/owl/list.owl#hasLastItem

last item - The link to the last item of the list

has characteristics: functional

has super-properties

has itemop

has domain

list<sup>C</sup>

has range

list item<sup>c</sup>

is inverse of

last item of op

# has member<sup>op</sup>

back to <u>ToC</u> or <u>Object Property ToC</u>

IRI: http://www.ontologydesignpatterns.org/cp/owl/collectionentity.owl#hasMember

# is defined by

http://www.ontologydesignpatterns.org/cp/owl/collectionentity.owl

A relation between collections and entities, e.g. 'my collection of saxophones includes an old Adolphe Sax original alto' (i.e. my collection has member an Adolphe Sax alto).

# has sub-properties

has itemop

has domain

Collection<sup>c</sup>

has range

thingc

is inverse of

is member of op

# has priceop

back to ToC or Object Property ToC

IRI: http://www.ontologydesignpatterns.org/cp/owl/price.owl#hasPrice

#### is defined by

http://www.ontologydesignpatterns.org/cp/owl/price.owl

has domain

thing<sup>c</sup>

has range

Price<sup>c</sup>

#### is inverse of

is price of op

# hasBrand<sup>op</sup>

back to ToC or Object Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#hasBrand

Shows the brand of the product

has characteristics: functional

# has super-properties

top object property

has domain

**Product<sup>C</sup>** 

has range

**Company<sup>c</sup>** 

is inverse of

isBrandOf<sup>op</sup>

# hasCatalogop

back to ToC or Object Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#hasCatalog

Shows what catalog X Company has available

#### has super-properties

top object property

has domain

Company

has range

**ProductCatalog**<sup>c</sup>

### hasProducer<sup>op</sup>

back to ToC or Object Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#hasProducer

Checking what engineering produced the design to be produced in a factory

# has super-properties

top object property

has domain

**Engineering**<sup>C</sup>

has range

Factory

inBoxOf<sup>op</sup>

back to ToC or Object Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#inBoxOf

What products has a device's box in

has characteristics: transitive

has super-properties

top object property

has domain

Accessory

has range

**Product<sup>c</sup>** 

is inverse of

containsInBox<sup>op</sup>

# inCollabWith<sup>op</sup>

back to ToC or Object Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#inCollabWith

Shows company collaborations to create a certain product

has super-properties

top object property

has domain

**Product<sup>c</sup>** 

has range

Company

# is member of op

back to ToC or Object Property ToC

IRI: http://www.ontologydesignpatterns.org/cp/owl/collectionentity.owl#isMemberOf

is defined by

http://www.ontologydesignpatterns.org/cp/owl/collectionentity.owl

has sub-properties

item of op

has domain

thingc

has range

Collection<sup>c</sup>

is inverse of

has member<sup>op</sup>

# is price of op

back to ToC or Object Property ToC

IRI: http://www.ontologydesignpatterns.org/cp/owl/price.owl#isPriceOf

# is defined by

http://www.ontologydesignpatterns.org/cp/owl/price.owl

#### has domain

Price<sup>c</sup>

#### has range

thing<sup>c</sup>

#### is inverse of

has priceop

# isBrandOf<sup>op</sup>

back to <u>ToC</u> or <u>Object Property ToC</u>

IRI: https://evilscript.altervista.org/productCatalog.owl#isBrandOf

Shows the products of the brand

has characteristics: inverse functional

# has super-properties

top object property

#### has domain

**Company**<sup>c</sup>

# has range

**Product<sup>c</sup>** 

#### is inverse of

hasBrandop

#### isContainedIn<sup>op</sup>

back to ToC or Object Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#isContainedIn

Availability of a product in a product catalog

has characteristics: asymmetric, transitive, irreflexive

#### has super-properties

top object property

#### has domain

Product<sup>c</sup>

#### has range

**ProductCatalog**<sup>c</sup>

# is inverse of

containsop

# isManufacturerOf<sup>op</sup>

back to ToC or Object Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#isManifacturerOf

Keeps track of who is manifacturing this company for

## has super-properties

top object property

#### has domain

Manufacturer<sup>c</sup>

# has range

**Company**<sup>C</sup>

#### is inverse of

manufacturersTo<sup>op</sup>

# item contentop

back to ToC or Object Property ToC

IRI: http://www.ontologydesignpatterns.org/cp/owl/bag.owl#itemContent

itemContent - The link to the actual resource to which the item refers.

#### has domain

item<sup>c</sup>

#### has range

not (item<sup>c</sup>)

# item of op

back to ToC or Object Property ToC

IRI: http://www.ontologydesignpatterns.org/cp/owl/bag.owl#itemOf

item of - The link from an item to the Bag where it is contained

#### has super-properties

is member of op

### has sub-properties

first item of<sup>op</sup>, last item of<sup>op</sup>

#### has domain

item<sup>c</sup>

#### has range

(collections) Bag<sup>c</sup>

#### is inverse of

has itemop

# last item of op

back to ToC or Object Property ToC

IRI: http://www.ontologydesignpatterns.org/cp/owl/list.owl#lastItemOf

# has super-properties

item of op

# has domain

list item<sup>c</sup>

# has range

list<sup>c</sup>

#### is inverse of

has last itemop

# manufacturersTo<sup>op</sup>

back to ToC or Object Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#manufacturesTo

Keeps track of who is manifacturing this company for

#### has super-properties

top object property

has domain

**Company<sup>c</sup>** 

has range

Manufacturer<sup>c</sup>

is inverse of

<u>isManufacturerOf</u>op

# has sub-property chains

sells<sup>op</sup> o designedBy<sup>op</sup>

sells<sup>op</sup> o producedBy<sup>op</sup>

# needsConnectionWithop

back to ToC or Object Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#needsConnectionWith

Checking the wireless compatibility between a smarwatch and a smartphone

#### has super-properties

top object property

has domain

Smartwatch<sup>c</sup>

has range

**Smartphone**<sup>C</sup>

### next itemop

back to ToC or Object Property ToC

IRI: http://www.ontologydesignpatterns.org/cp/owl/list.owl#nextItem

next item - The link to the next item in a list (ordered collection)

has characteristics: functional

has super-properties

directly followsop

has domain

list item<sup>c</sup>

has range

list item<sup>c</sup>

is inverse of

previous itemop

# precedesop

back to <u>ToC</u> or <u>Object Property ToC</u>

IRI: http://www.ontologydesignpatterns.org/cp/owl/sequence.owl#precedes

#### is defined by

http://www.ontologydesignpatterns.org/cp/owl/sequence.owl

A relation between entities, expressing a 'sequence' schema. E.g. 'year 1999 precedes 2000', 'deciding what coffee to use' precedes 'preparing coffee', 'World War II follows World War I', 'in the Milan to Rome autoroute, Bologna precedes Florence', etc. It can then be used between tasks, processes, time intervals, spatially locate objects, situations, etc. Subproperties can be defined in order to distinguish the different uses.

has characteristics: transitive

has sub-properties

directly precedes<sup>op</sup>

has domain

thingc

has range

thingc

is inverse of

followsop

# predecessorOfop

back to ToC or Object Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#predecessorOf

Previous device version

has characteristics: inverse functional

has super-properties

top object property

has domain

Product<sup>c</sup>

has range

Product<sup>c</sup>

is inverse of

successorOfop

# previous itemop

back to ToC or Object Property ToC

IRI: http://www.ontologydesignpatterns.org/cp/owl/list.owl#previousItem

previous item - The link to the previous item in a list (ordered collection)

has characteristics: functional

has super-properties

directly precedes op

has domain

list item<sup>c</sup>

has range

list item<sup>c</sup>

is inverse of

next itemop

# producedByop

back to <u>ToC</u> or <u>Object Property ToC</u>

IRI: https://evilscript.altervista.org/productCatalog.owl#producedBy

Checking what factory produced the X device

## has super-properties

top object property

has domain

**Product<sup>c</sup>** 

has range

Factory

is inverse of

producesop

# producesop

back to ToC or Object Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#produces

Checking what factory produced the X device

## has super-properties

top object property

has domain

Factory

has range

**Product<sup>c</sup>** 

is inverse of

<u>producedBy</u>op

# putInBoxesop

back to ToC or Object Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#putInBoxes

Shows what items are put in a product's box

### has super-properties

top object property

has domain

**Company**<sup>c</sup>

has range

**Accessory**<sup>C</sup>

## has sub-property chains

sells<sup>op</sup> o containsInBox<sup>op</sup>

# sellsop

back to ToC or Object Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#sells

Product is sold by X company

#### has super-properties

top object property

has domain

**Company**<sup>c</sup>

has range

Product<sup>c</sup>

is inverse of

<u>soldBy</u><sup>op</sup>

## has sub-property chains

hasCatalog<sup>op</sup> o has member<sup>op</sup> o has item<sup>op</sup>

## soldByop

back to ToC or Object Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#soldBy

Product is sold by X company

## has super-properties

top object property

has domain

Product<sup>c</sup>

has range

**Company<sup>c</sup>** 

is inverse of

sellsop

successorOfop

back to ToC or Object Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#successorOf

Next device version

has characteristics: functional

has super-properties

top object property

has domain

Product<sup>c</sup>

has range

Product<sup>c</sup>

is inverse of

<u>predecessorOf</u>op

# **Data Properties**

<u>CameraMegaPixels</u> <u>ChargingPortType</u> <u>Color</u> <u>CpuType</u>
<u>Customer's range the product is made to</u> <u>Depth</u> <u>EAN</u> <u>has value</u> <u>Height isTouchScreen</u> <u>MemorySize</u> <u>OperatingSystem</u> <u>Price</u> <u>ProductName</u>
RamSize RamType RollOutDate ScreenSize size Weight Width

# Camera Mega Pixels dp

back to ToC or Data Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#CameraMP

Number of megapixels in a camera's device

has super-properties

top data property

has domain

Computer<sup>c</sup> or PortableDevice<sup>c</sup>

has range

# ChargingPortType<sup>dp</sup>

back to ToC or Data Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#ChargingPortType

Charging port type

has super-properties

top data property

has domain

EarPlugs<sup>c</sup> or PortableDevice<sup>c</sup>

```
has range
      { "Lightning", "MicroUSB", "Proprietary", "USB-C" }
Colordp
                                                            back to ToC or Data Property ToC
IRI: https://evilscript.altervista.org/productCatalog.owl#Color
Color of the product
has super-properties
     top data property
has domain
      Product<sup>c</sup>
has range
      string
                                                            back to ToC or Data Property ToC
CpuType<sup>dp</sup>
IRI: https://evilscript.altervista.org/productCatalog.owl#CpuType
Cpu name
has super-properties
      top data property
has domain
      Device<sup>c</sup> or EarPlugs<sup>c</sup>
has range
      string
                                                            back to ToC or Data Property ToC
Customer's range the product is made to<sup>dp</sup>
IRI: https://evilscript.altervista.org/productCatalog.owl#isInRange
has super-properties
     top data property
has domain
      Product<sup>c</sup>
has range
      { "High" , "Low" , "Medium" }
                                                            back to ToC or Data Property ToC
Depth<sup>dp</sup>
IRI: https://evilscript.altervista.org/productCatalog.owl#Depth
Depth in mm of a product
has super-properties
      top data property
```

#### has domain

Product<sup>c</sup>

has range

## **EAN**dp

back to ToC or Data Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#EAN

Unique product code of a device

#### has super-properties

top data property

has domain

**Product<sup>C</sup>** 

has range

string

# has value<sup>dp</sup>

back to ToC or Data Property ToC

IRI: http://www.ontologydesignpatterns.org/cp/owl/price.owl#hasValue

## is defined by

http://www.ontologydesignpatterns.org/cp/owl/price.owl

has domain

Price<sup>c</sup>

has range

float

# Height<sup>dp</sup>

back to ToC or Data Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#Height

Height of the product

#### has super-properties

top data property

has domain

Product<sup>c</sup>

has range

# isTouchScreen<sup>dp</sup>

back to ToC or Data Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#isTouchScreen

Checking if a device is touch screen

has characteristics: functional

## has super-properties

top data property

#### has domain

Computer<sup>c</sup> or PortableDevice<sup>c</sup>

## has range

boolean

# MemorySize<sup>dp</sup>

back to ToC or Data Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#MemorySize

Total "Hard Disk" size

## has super-properties

top data property

#### has domain

Computer<sup>c</sup> or PortableDevice<sup>c</sup>

## has range

non negative integer

# OperatingSystem<sup>dp</sup>

back to ToC or Data Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#OperativeSystem

Operating System installed in a product

#### has super-properties

top data property

#### has domain

Computer<sup>c</sup> or PortableDevice<sup>c</sup>

## has range

string

## **Price**<sup>dp</sup>

back to ToC or Data Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#Price

Price in euros of a product

## has super-properties

top data property

## has domain

Product<sup>c</sup>

has range

## ProductName<sup>dp</sup>

back to ToC or Data Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#ProductName

Shared name of the product

## has super-properties

top data property

has domain

Product<sup>c</sup>

has range

string

## RamSize<sup>dp</sup>

back to <u>ToC</u> or <u>Data Property ToC</u>

IRI: https://evilscript.altervista.org/productCatalog.owl#RamSize

Size in GB of the RAM

## has super-properties

top data property

has domain

Computer<sup>c</sup> or PortableDevice<sup>c</sup>

has range

non negative integer

# RamType<sup>dp</sup>

back to ToC or Data Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#RamType

Generic labeling of Ram Type

#### has super-properties

top data property

has domain

Computer<sup>c</sup> or Laptop<sup>c</sup> or 2in1<sup>c</sup>

has range

string

## RollOutDate<sup>dp</sup>

back to ToC or Data Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#RollOutDate

First date of the roll out

#### has super-properties

top data property

has domain

**Product<sup>c</sup>** 

has range

date time

# ScreenSize<sup>dp</sup>

back to ToC or Data Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#ScreenSize

Screen size in inches

## has super-properties

top data property

#### has domain

Computer<sup>c</sup> or PortableDevice<sup>c</sup>

has range

## sizedp

back to ToC or Data Property ToC

IRI: http://www.ontologydesignpatterns.org/cp/owl/bag.owl#size

size - The number of items belonging to a collection

#### has domain

**Collection**<sup>C</sup>

#### has range

integer

# Weightdp

back to ToC or Data Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#Weight

Weight in grams of a product

## has super-properties

top data property

#### has domain

Product<sup>c</sup>

has range

## Width<sup>dp</sup>

back to ToC or Data Property ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#Width

Witdh in mm of a product

#### has super-properties

top data property

#### has domain

Product<sup>c</sup>

has range

## Named Individuals

1000Euro 10Euro 1800Euro 200Euro 500Euro 600Euro 800Euro AirPods wirelessCharge Apple AppleAccessories AppleCatalog AppleMobile ApplePC AppleWatchSeries6 40mm GPS Cellular Asus AsusCatalog AsusPC Beats cuffie BeatsAudio BeatsEarPlugs Euro Foxconn Giovanni Huáshuò iMac 27 RetinaDisplay 5k 256 iPadAir 2020 iPhone11 64 iPhone12 64 iPhoneX 64 Lightning cable MacBookAir M1 Michela Nike Qualcomm Samsung SamsungAccessories SamsungCatalog SamsungGalaxy SamsungGalaxyS10 global SamsungGalaxyS20 5G global ShortEngineer ShortFactory USBC cable ZenBookFlip S UX371

## 1000Euroni

back to ToC or Named Individual ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#1000Euro

1000 Euro

#### belongs to

**Price**<sup>c</sup>

#### has facts

has currency<sup>op</sup> Euro is price of<sup>op</sup> MacBookAir M1 has value<sup>dp</sup> "1000.0"^^float

## 10Euro<sup>ni</sup>

back to ToC or Named Individual ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#10Euro

10 Euro

#### belongs to

Price<sup>c</sup>

#### has facts

has currency<sup>op</sup> Euro is price of<sup>op</sup> Lightning cable has value<sup>dp</sup> "10.0"^^float

#### 1800Euro<sup>ni</sup>

back to ToC or Named Individual ToC

belongs to

IRI: https://evilscript.altervista.org/productCatalog.owl#1800Euro 1800 Euro belongs to **Price**<sup>c</sup> has facts <u>has currency</u><sup>op</sup> <u>Euro</u> is price of op ZenBookFlip S UX371 is price of op iMac 27 RetinaDisplay 5k 256 has value<sup>dp</sup> "1800.0"^^float back to ToC or Named Individual ToC 200Euroni IRI: https://evilscript.altervista.org/productCatalog.owl#200Euro 200 Euro belongs to Price<sup>c</sup> has facts has currency<sup>op</sup> Euro is price of op AirPods wirelessCharge is price of Deats cuffie has value<sup>dp</sup> "200.0"^^float back to ToC or Named Individual ToC 500Euroni IRI: https://evilscript.altervista.org/productCatalog.owl#500Euro 500 Euro belongs to Price<sup>c</sup> has facts has currency<sup>op</sup> Euro is price of Oph AppleWatchSeries 6\_40mm\_GPS\_Cellular is price of Op Samsung Galaxy S10 global is price of op iPhoneX 64 has value<sup>dp</sup> "500.0"^^float back to ToC or Named Individual ToC 600Euroni IRI: https://evilscript.altervista.org/productCatalog.owl#600Euro 600 Euro

```
Price<sup>C</sup>
has facts
has currency<sup>op</sup> Euro
is price of<sup>op</sup> iPadAir 2020
is price of<sup>op</sup> iPhone11 64
has value<sup>dp</sup> "600.0"^^float
```

```
BOOEuroni back to ToC or Named Individual ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#800Euro

800 Euro

belongs to
    Pricec
has facts
    has currency op Euro
    is price of op SamsungGalaxyS20 5G global
    is price of op iPhone12 64
```

## AirPods wirelessChargeni

has valuedp "800.0"^^float

back to ToC or Named Individual ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#AirPods\_wirelessCharge

EarPlugs with wireless charge case made by Apple

```
belongs to
```

physical object<sup>c</sup>

item<sup>c</sup>
list item<sup>c</sup>
headphones<sup>c</sup>
product (business)<sup>c</sup>
Accessory<sup>c</sup>
EarPlugs<sup>c</sup>
Product<sup>c</sup>

#### has facts

item of AppleAccessories
is member of AppleAccessories
next item AppleWatchSeries 40mm GPS Cellular
previous item Lightning cable
has price Description 200Euro
directly follows AppleWatchSeries 40mm GPS Cellular
directly precedes Lightning cable
follows AppleWatchSeries 40mm GPS Cellular
precedes AppleWatchSeries 40mm GPS Cellular
precedes Lightning cable
containsInBox Lightning cable

```
designedBy<sup>op</sup> Foxconn
hasBrand<sup>op</sup> Apple
isContainedInop AppleCatalog
producedByop Qualcomm
soldBy<sup>op</sup> Apple
ChargingPortType<sup>dp</sup> "Lightning"^^string
Color<sup>dp</sup> "White"^^string
CpuType<sup>dp</sup> "Chip H1"^^string
Depth<sup>dp</sup> "21.3"^^double
EANdp "A1938"^\string
Height<sup>dp</sup> "53.5"^^double
Pricedp "229.0"^^double
ProductNamedp "AirPods Wireless Charge Case" ** String
RollOutDatedp "2019-03-20T00:00:00"^^date time
Weight<sup>dp</sup> "40.0"^^double
Width<sup>dp</sup> "44.3"^^double
```

# Apple<sup>ni</sup>

back to ToC or Named Individual ToC

**IRI:** https://evilscript.altervista.org/productCatalog.owl#Apple

Famous company that design and sell electronic devices

## belongs to

organization<sup>c</sup>

Company<sup>c</sup>

Manufacturer<sup>c</sup>

#### has facts

collabsWithop Nike

hasCatalogop AppleCatalog

isBrandOf<sup>op</sup> AirPods wirelessCharge

isBrandOf<sup>op</sup> AppleWatchSeries6 40mm GPS Cellular

isBrandOf<sup>op</sup> iPadAir 2020

isBrandOf<sup>op</sup> iPhone11 64

isBrandOfop Lightning cable

isBrandOf<sup>op</sup> MacBookAir M1

isBrandOfop iMac 27 RetinaDisplay 5k 256

isBrandOfop iPhone12 64

isBrandOf<sup>op</sup> iPhoneX\_64

manufacturersTo<sup>op</sup> BeatsAudio

manufacturersTo<sup>op</sup> Foxconn

manufacturersTo<sup>op</sup> Qualcomm

manufacturersTo<sup>op</sup> ShortFactory

putInBoxes<sup>op</sup> Lightning cable

putInBoxes<sup>op</sup> USBC cable

sells<sup>op</sup> AirPods wirelessCharge

sells<sup>op</sup> AppleWatchSeries6 40mm GPS Cellular

```
sells<sup>op</sup> Beats cuffie
sells<sup>op</sup> iPadAir 2020
sells<sup>op</sup> iPhone11 64
sells<sup>op</sup> Lightning cable
sells<sup>op</sup> MacBookAir M1
sells<sup>op</sup> iMac 27 RetinaDisplay 5k 256
sells<sup>op</sup> iPhone12 64
sells<sup>op</sup> iPhoneX 64
```

## AppleAccessories<sup>ni</sup>

back to <u>ToC</u> or <u>Named Individual ToC</u>

IRI: https://evilscript.altervista.org/productCatalog.owl#AppleAccessories

Section of the Apple Product List that covers Accessories

## belongs to

(collections) Bag<sup>c</sup>
Collection<sup>c</sup>
list<sup>c</sup>
ProductCatalog<sup>c</sup>
catalog<sup>c</sup>

#### has facts

<u>has item<sup>op</sup> AirPods\_wirelessCharge</u> <u>has item<sup>op</sup> AppleWatchSeries6\_40mm\_GPS\_Cellular</u>

has item<sup>op</sup> Lightning cable

has member op Air Pods wireless Charge

has member op AppleWatchSeries 40mm GPS Cellular

has member op Lightning cable

is member of op AppleCatalog

has first item op Lightning cable

has last item op AppleWatchSeries6 40mm GPS Cellular

# AppleCatalog<sup>ni</sup>

back to ToC or Named Individual ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#AppleCatalog

Apple web site catalog

#### belongs to

Collection<sup>c</sup>
ProductCatalog<sup>c</sup>
SellingCatalog<sup>c</sup>
catalog<sup>c</sup>

#### has facts

has member<sup>op</sup> AppleAccessories
has member<sup>op</sup> AppleMobile
has member<sup>op</sup> ApplePC

```
has member<sup>op</sup> BeatsEarPlugs
contains op Air Pods wireless Charge
contains op AppleWatchSeries 6 40mm GPS Cellular
contains<sup>op</sup> Beats cuffie
contains<sup>op</sup> iPadAir_2020
contains op iPhone11 64
contains op Lightning cable
contains<sup>op</sup> MacBookAir M1
contains op iMac 27 Retina Display 5k 256
contains<sup>op</sup> iPhone12_64
contains op iPhoneX 64
containsBrand<sup>op</sup> Apple
containsBrand<sup>op</sup> BeatsAudio
```

# AppleMobile<sup>ni</sup>

back to ToC or Named Individual ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#AppleMobile

Section of the Apple Product List that covers Mobile Phones

## belongs to

(collections) Bag<sup>c</sup> Collection<sup>c</sup> list<sup>C</sup> **ProductCatalog**<sup>c</sup> catalog<sup>c</sup>

#### has facts

has itemop iPadAir 2020 has item<sup>op</sup> iPhone11 64 has item<sup>op</sup> iPhone12 64 has item<sup>op</sup> iPhoneX 64 has member<sup>op</sup> iPadAir 2020 has member op iPhone 11 64 has member<sup>op</sup> iPhone12 64 has member op iPhoneX 64 is member of op AppleCatalog has first itemop iPhoneX 64

has last itemop iPadAir 2020

# ApplePCni

back to <u>ToC</u> or <u>Named Individual ToC</u>

IRI: https://evilscript.altervista.org/productCatalog.owl#ApplePC

Section of the Apple Product List that covers PCs

## belongs to

(collections) Bag<sup>c</sup>

```
Collection<sup>c</sup>
      list<sup>c</sup>
      ProductCatalog<sup>c</sup>
      catalog<sup>c</sup>
has facts
      has item<sup>op</sup> MacBookAir M1
      has itemop iMac 27 RetinaDisplay 5k 256
      has member<sup>op</sup> MacBookAir M1
      has member<sup>op</sup> iMac 27 RetinaDisplay 5k 256
      is member of op AppleCatalog
      has first itemop iMac 27 RetinaDisplay 5k 256
      has last itemop MacBookAir M1
AppleWatchSeries6_40mm GPS Cellularni back to ToC or Named Individual ToC
IRI:
                                                                https://evilscript.altervista.org
/productCatalog.owl#AppleWatchSeries6 40mm GPS Cellular Nike
Top 2020 smartwatch made by Apple
belongs to
      physical object<sup>c</sup>
      item<sup>c</sup>
      list item<sup>c</sup>
      smartwatch<sup>c</sup>
      product (business)<sup>c</sup>
      Device<sup>c</sup>
      PortableDevice<sup>c</sup>
      Product<sup>c</sup>
      product high<sup>c</sup>
      Smartwatch<sup>c</sup>
has facts
      item of AppleAccessories
      is member of AppleAccessories
      last item of Op AppleAccessories
      previous itemop AirPods wirelessCharge
      has price<sup>op</sup> 500Euro
      directly precedes<sup>op</sup> AirPods wirelessCharge
      precedes<sup>op</sup> AirPods wirelessCharge
      precedes<sup>op</sup> Lightning cable
      compatibleWithop iPhone11 64
      compatibleWithop iPhone12 64
      compatibleWithop iPhoneX 64
      designedBy<sup>op</sup> Foxconn
      hasBrand<sup>op</sup> Apple
      inCollabWithop Nike
      isContainedIn<sup>op</sup> AppleCatalog
```

```
needsConnectionWithop iPhone11 64
needsConnectionWithop iPhone12 64
needsConnectionWith<sup>op</sup> iPhoneX 64
producedBy<sup>op</sup> Qualcomm
soldBy<sup>op</sup> Apple
Color "Silver, Graphite (DLC), Gold (PVD)"^^string
CpuType<sup>dp</sup> "Dual-core"^^string
Depth<sup>dp</sup> "10.4"^^double
EANdp "A2293"^^string
Height<sup>dp</sup> "40.0"^^double
MemorySize<sup>dp</sup> "32"^^non negative integer
OperatingSystem<sup>dp</sup> "watchOS 7.0"^^string
Pricedp "539.0"^^double
ProductNamedp "Apple Watch 6 Nike 40mm GPS+Cellular" ^^string
RamSize<sup>dp</sup> "1"^^non negative integer
RollOutDatedp "2020-09-19T00:00:00"^^date time
ScreenSizedp "1.57"^^double
Weight<sup>dp</sup> "39.7"^^double
Width<sup>dp</sup> "34.0"^^double
Customer's range the product is made todp "High" * string
isTouchScreendp "true"^^boolean
```

## Asus<sup>ni</sup>

back to ToC or Named Individual ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#Asus

AsusTek is a Taiwanese multinational computer and phone hardware and electronics company headquartered in Beitou District, Taipei, Taiwan.

### belongs to

organization<sup>c</sup>

**Company**<sup>c</sup>

Engineering<sup>c</sup>

ITEngineering<sup>c</sup>

Manufacturer<sup>c</sup>

## has facts

designs<sup>op</sup> ZenBookFlip S UX371

hasCatalog<sup>op</sup> AsusCatalog

isBrandOf<sup>op</sup> ZenBookFlip S UX371

manufacturersTo<sup>op</sup> Asus

manufacturersTo<sup>op</sup> Huáshuò

sells<sup>op</sup> ZenBookFlip S UX371

# AsusCatalog<sup>ni</sup>

back to <u>ToC</u> or <u>Named Individual ToC</u>

IRI: https://evilscript.altervista.org/productCatalog.owl#AsusCatalog

```
Asus web site catalog

belongs to

Collection<sup>c</sup>
ProductCatalog<sup>c</sup>
SellingCatalog<sup>c</sup>
catalog<sup>c</sup>
has facts
has member<sup>op</sup> AsusPC
contains<sup>op</sup> ZenBookFlip S UX371
containsBrand<sup>op</sup> Asus
```

## AsusPC<sup>ni</sup>

back to ToC or Named Individual ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#AsusPC

Section of the Asus Product List that covers PCs

#### belongs to

(collections) Bag<sup>c</sup>
Collection<sup>c</sup>
list<sup>c</sup>
ProductCatalog<sup>c</sup>
catalog<sup>c</sup>

#### has facts

has item<sup>op</sup> ZenBookFlip S UX371
has member<sup>op</sup> ZenBookFlip S UX371
is member of<sup>op</sup> AsusCatalog
has first item<sup>op</sup> ZenBookFlip S UX371
has last item<sup>op</sup> ZenBookFlip S UX371

# Beats cuffieni

back to ToC or Named Individual ToC

**IRI:** https://evilscript.altervista.org/productCatalog.owl#Beats\_cuffie

Over ear made by BeatsAudio

## belongs to

physical object<sup>c</sup>

item<sup>c</sup>
list item<sup>c</sup>
headphones<sup>c</sup>
product (business)<sup>c</sup>
Accessory<sup>c</sup>
EarPlugs<sup>c</sup>
Product<sup>c</sup>

has facts

```
item of DeatsEarPlugs
is member of DeatsEarPlugs
first item of DeatsEarPlugs
last item of DeatsEarPlugs
has price DeatsEarPlugs
has price DeatsEarPlugs
designed By Deats Audio
has Brand Deats Audio
is Contained In Deats Audio
produced By Deats Audio
sold By Deats Audio
sold By Deats Audio
sold By Deats Audio
```

## BeatsAudio<sup>ni</sup>

back to ToC or Named Individual ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#BeatsAudio

Company that sells audio products

## belongs to

organization<sup>c</sup>

**Company<sup>c</sup>** 

**Engineering**<sup>C</sup>

Manufacturer<sup>c</sup>

### has facts

<u>designs</u><sup>op</sup> <u>Beats\_cuffie</u> isBrandOf<sup>op</sup> Beats\_cuffie

# BeatsEarPlugs<sup>ni</sup>

back to ToC or Named Individual ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#BeatsEarPlugs

Section of the Beats Product List that covers Earplugs

#### belongs to

(collections) Bag<sup>c</sup>

Collection<sup>c</sup>

list<sup>c</sup>

ProductCatalog<sup>c</sup>

catalog<sup>c</sup>

#### has facts

has itemop Beats cuffie

has member<sup>op</sup> Beats cuffie

is member of op AppleCatalog

has first itemop Beats cuffie

has last itemop Beats cuffie

# Euroni

back to ToC or Named Individual ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#Euro

European Currency

belongs to

Currency<sup>c</sup>

## Foxconn<sup>ni</sup>

back to ToC or Named Individual ToC

**IRI:** https://evilscript.altervista.org/productCatalog.owl#Foxconn

ITengineering company that designs CPUs for Apple

## belongs to

organization<sup>c</sup>

**BigEngineering**<sup>C</sup>

Company<sup>c</sup>

**Engineering**<sup>C</sup>

<u>ITEngineering</u><sup>c</sup>

Manufacturer<sup>c</sup>

#### has facts

designs op Air Pods wireless Charge

designs op AppleWatchSeries 6 40mm GPS Cellular

designs<sup>op</sup> iPadAir 2020

designs<sup>op</sup> iPhone11 64

designs<sup>op</sup> MacBookAir M1

designs<sup>op</sup> iMac 27 RetinaDisplay 5k 256

designs<sup>op</sup> iPhone12 64

## Giovanni<sup>ni</sup>

back to ToC or Named Individual ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#Giovanni PowerUser

#### belongs to

person<sup>c</sup>

PowerUser<sup>c</sup>

User<sup>c</sup>

#### has facts

buysProductop MacBookAir M1

buysProductop iPhone12\_64

## Huáshuò<sup>ni</sup>

back to ToC or Named Individual ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#Huáshuò

Huáshuò is a company under the favor of Samsung that produces many products

#### belongs to

```
organization<sup>C</sup>
Company<sup>C</sup>
Factory<sup>C</sup>
Manufacturer<sup>C</sup>

has facts
isManufacturerOf<sup>op</sup> Samsung
produces<sup>op</sup> SamsungGalaxyS10 global
produces<sup>op</sup> SamsungGalaxyS20 5G global
produces<sup>op</sup> ZenBookFlip S UX371
```

```
back to ToC or Named Individual ToC
iMac 27 RetinaDisplay 5k 256<sup>ni</sup>
IRI:
                                                                     https://evilscript.altervista.org
/productCatalog.owl#iMac 27 RetinaDisplay 5k 256
All-in-one computer made by Apple
belongs to
       physical object<sup>c</sup>
       item<sup>c</sup>
       list item<sup>c</sup>
       personal computer<sup>c</sup>
       product (business)<sup>c</sup>
       Computer<sup>c</sup>
       Device<sup>c</sup>
       NotPortableDevice<sup>c</sup>
       Product<sup>c</sup>
       product high<sup>c</sup>
has facts
       item of OP ApplePC
       is member of ApplePC
       first item of Op ApplePC
       next itemop MacBookAir M1
       previous item<sup>op</sup> iPhone11 64
       has price<sup>op</sup> 1800Euro
       directly follows<sup>op</sup> MacBookAir M1
       directly precedes<sup>op</sup> iPhone11 64
       follows<sup>op</sup> MacBookAir M1
       precedes<sup>op</sup> iPhone11 64
       precedes<sup>op</sup> iPhoneX 64
       designedBy<sup>op</sup> Foxconn
       hasBrand<sup>op</sup> Apple
       isContainedIn<sup>op</sup> AppleCatalog
       producedBy<sup>op</sup> Qualcomm
       soldBy<sup>op</sup> Apple
       Color<sup>dp</sup> "Silver"^^string
       CpuTypedp "Intel Core i5 6-core 10gen 3.1GHz (Turbo Boost 4.5GHz)"^^string
```

```
Depth<sup>dp</sup> "203.0"^^double
EAN<sup>dp</sup> "MXWT2LL/A"^^string
Height<sup>dp</sup> "516.0"^^double
MemorySize<sup>dp</sup> "256"^^non negative integer
OperatingSystem<sup>dp</sup> "macOS Big Sur"^^string
Price<sup>dp</sup> "1349.0"^^double
ProductName<sup>dp</sup> "iMac 27 5K 256GB"^^string
RamSize<sup>dp</sup> "8"^^non negative integer
RamType<sup>dp</sup> "DDR4"^^string
RollOutDate<sup>dp</sup> "2020-08-04T00:00:00"^^date time
ScreenSize<sup>dp</sup> "27.0"^^double
Weight<sup>dp</sup> "8920.0"^^double
Width<sup>dp</sup> "650.0"^^double
Customer's range the product is made to "High"^^string
isTouchScreen<sup>dp</sup> "false"^^boolean
```

## iPadAir 2020<sup>ni</sup>

back to ToC or Named Individual ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#lpadAir\_2020

Tablet made by Apple

#### belongs to

physical object<sup>c</sup>

<u>item</u><sup>c</sup>

list item<sup>c</sup>

tablet computer<sup>c</sup>

product (business)<sup>c</sup>

Device<sup>c</sup>

Portable Device<sup>c</sup>

Product<sup>c</sup>

product medium<sup>c</sup>

<u>Tablet</u><sup>c</sup>

#### has facts

item of Op Apple Mobile

is member of Apple Mobile

last item of Op Apple Mobile

previous item<sup>op</sup> iPhone12 64

has price<sup>op</sup> 600Euro

directly precedes op iPhone 12 64

precedes<sup>op</sup> iPhone12 64

containsInBoxop USBC cable

designedBy<sup>op</sup> Foxconn

hasBrand<sup>op</sup> Apple

isContainedIn<sup>op</sup> AppleCatalog

<u>producedBy</u><sup>op</sup> <u>Qualcomm</u>

soldBy<sup>op</sup> Apple

```
CameraMegaPixels<sup>dp</sup> "12.0"^^double
ChargingPortType<sup>dp</sup> "USB-C"^^string
Colordp "Space Gray, Silver, Rose Gold, Green, Sky Blue" Astring
CpuType<sup>dp</sup> "Apple A14 Bionic (5 nm)"^^string
Depth<sup>dp</sup> "6.1"^^double
Height<sup>dp</sup> "247.6"^^double
MemorySize<sup>dp</sup> "64"^^non negative integer
OperatingSystem<sup>dp</sup> "iPadOS 14.1"^^string
Pricedp "640.0"^^double
ProductNamedp "Apple iPad Air (2020)"^^string
RamSize<sup>dp</sup> "3"^^non negative integer
RollOutDatedp "2020-09-15T00:00:00"^^date time
ScreenSizedp "10.9"^^double
Weight<sup>dp</sup> "458.0"^^double
Width<sup>dp</sup> "178.5"^^double
Customer's range the product is made to dp "Medium" ^^string
isTouchScreen<sup>dp</sup> "true"^^boolean
```

# iPhone11 64<sup>ni</sup>

back to ToC or Named Individual ToC

**IRI:** https://evilscript.altervista.org/productCatalog.owl#lphone11\_64

Top 2019 smartphone made by Apple

#### belongs to

physical object<sup>c</sup>

item<sup>c</sup>

list item<sup>c</sup>

smartphone<sup>c</sup>

product (business)<sup>c</sup>

Device<sup>c</sup>

PortableDevice<sup>c</sup>

Product<sup>c</sup>

product medium<sup>c</sup>

Smartphone<sup>C</sup>

#### has facts

item of op Apple Mobile

is member of op Apple Mobile

next item<sup>op</sup> iMac 27\_RetinaDisplay 5k 256

previous itemop iPhoneX 64

has price<sup>op</sup> 600Euro

directly follows<sup>op</sup> iMac 27 RetinaDisplay 5k 256

directly precedes<sup>op</sup> iPhoneX 64

follows<sup>op</sup> MacBookAir M1

follows<sup>op</sup> iMac 27 RetinaDisplay 5k 256

precedes<sup>op</sup> iPhoneX 64

containsInBoxop Lightning cable

```
designedBy<sup>op</sup> Foxconn
hasBrand<sup>op</sup> Apple
isContainedIn<sup>op</sup> AppleCatalog
predecessorOfop iPhone12 64
producedBy<sup>op</sup> Qualcomm
soldBy<sup>op</sup> Apple
successorOfop iPhoneX 64
CameraMegaPixels<sup>dp</sup> "12.0"^^double
ChargingPortType<sup>dp</sup> "Lightning"^^string
Color Black, Green, Yellow, Purple, Red, White "^^string"
CpuType<sup>dp</sup> "Apple A13 Bionic"^^string
Depthdp "8.3"^^double
EANdp "A2221"^^string
Height<sup>dp</sup> "150.9"^^double
MemorySize<sup>dp</sup> "64"^^integer
MemorySize<sup>dp</sup> "64"^^non negative integer
OperatingSystem<sup>dp</sup> "iOS 13"^^string
Pricedp "719.0"^^double
ProductNamedp "Iphone 11 64GB"^^string
RamSize<sup>dp</sup> "4"^^non negative integer
RollOutDatedp "2019-09-20T00:00:00"^^date time
ScreenSizedp "6.1"^^double
Weight<sup>dp</sup> "194.0"^^double
Width<sup>dp</sup> "75.7"^^double
Customer's range the product is made to "Medium" \^string
isTouchScreen<sup>dp</sup> "true"^^boolean
```

## iPhone12 64<sup>ni</sup>

back to ToC or Named Individual ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#iPhone12\_64

Top 2020 smarphone made by Apple

#### belongs to

physical object<sup>c</sup>
item<sup>c</sup>
list item<sup>c</sup>
smartphone<sup>c</sup>
product (business)<sup>c</sup>
Device<sup>c</sup>
PortableDevice<sup>c</sup>
Product<sup>c</sup>
product high<sup>c</sup>

Smartphone<sup>c</sup>

## has facts

<u>item of op AppleMobile</u> <u>is member of op AppleMobile</u>

```
next item<sup>op</sup> iPadAir 2020
has price<sup>op</sup> 800Euro
directly followsop iPadAir 2020
follows<sup>op</sup> iPadAir 2020
containsInBoxop Lightning cable
designedBy<sup>op</sup> Foxconn
hasBrand<sup>op</sup> Apple
isContainedIn op AppleCatalog
producedByop Qualcomm
soldBy<sup>op</sup> Apple
successorOfop iPhone11 64
CameraMegaPixelsdp "12.0"^^double
ChargingPortType<sup>dp</sup> "Lightning"^^string
Colordp "Black, White, Red, Green, Blue" *\^string
CpuType<sup>dp</sup> "A14 Bionic"^^string
Depth<sup>dp</sup> "7.4"^^double
EANdp "A2172"^^string
Height<sup>dp</sup> "146.7"^^double
MemorySize<sup>dp</sup> "64"^^integer
MemorySize<sup>dp</sup> "64"^^non negative integer
OperatingSystem<sup>dp</sup> "iOS 14"^^string
Pricedp "939.0"^^double
ProductNamedp "Iphone12 64 GB"^^string
RamSize<sup>dp</sup> "4"^^non negative integer
RollOutDate<sup>dp</sup> "2020-10-23T00:00:00"^^date time
ScreenSizedp "6.1"^^double
Weight<sup>dp</sup> "162.0"^^double
Width<sup>dp</sup> "71.5"^^double
Customer's range the product is made to "High" ** string
isTouchScreen<sup>dp</sup> "true"^^boolean
                                                      back to ToC or Named Individual ToC
```

# iPhoneX 64<sup>ni</sup>

IRI: https://evilscript.altervista.org/productCatalog.owl#iPhoneX 64

iPhone X, 64GB edition

#### belongs to

physical object<sup>c</sup> <u>item</u><sup>c</sup> list item<sup>c</sup> smartphone<sup>c</sup> product (business)<sup>c</sup> Device<sup>c</sup> PortableDevice<sup>c</sup> Product<sup>c</sup> Smartphone<sup>c</sup>

```
has facts
      item of Apple Mobile
      is member of op Apple Mobile
      first item of Op Apple Mobile
      next itemop iPhone11 64
      has price op 500Euro
      directly follows op iPhone 11 64
      follows<sup>op</sup> iPhone11 64
      follows<sup>op</sup> MacBookAir M1
      follows<sup>op</sup> iMac 27 RetinaDisplay 5k 256
      containsInBoxop Lightning cable
      hasBrand<sup>op</sup> Apple
      isContainedIn<sup>op</sup> AppleCatalog
      predecessorOfop iPhone11 64
      soldBy<sup>op</sup> Apple
      ProductNamedp "iPhone X 64GB"^^string
```

```
back to ToC or Named Individual ToC
Lightning cable<sup>ni</sup>
IRI: https://evilscript.altervista.org/productCatalog.owl#Lightning cable
The standard cable for iPhones
belongs to
       physical object<sup>c</sup>
       item<sup>c</sup>
       list item<sup>c</sup>
       power cable<sup>c</sup>
       product (business)<sup>c</sup>
       Accessory<sup>c</sup>
       cable<sup>c</sup>
       Product<sup>c</sup>
has facts
       item of Op AppleAccessories
       is member of op AppleAccessories
       first item of AppleAccessories
       next itemop AirPods wirelessCharge
       has price<sup>op</sup> 10Euro
       directly follows op AirPods wireless Charge
       follows<sup>op</sup> AirPods wirelessCharge
       follows<sup>op</sup> AppleWatchSeries6 40mm GPS Cellular
       hasBrand<sup>op</sup> Apple
       inBoxOf<sup>op</sup> AirPods wirelessCharge
       inBoxOf<sup>op</sup> iPhone11 64
       inBoxOfop iPhone12 64
       inBoxOf<sup>op</sup> iPhoneX 64
       isContainedInop AppleCatalog
```

```
soldBy<sup>op</sup> Apple
```

```
back to ToC or Named Individual ToC
MacBookAir M1<sup>ni</sup>
IRI: https://evilscript.altervista.org/productCatalog.owl#MacBookAir M1
Laptop with M1 Chip made by Apple
belongs to
       physical object<sup>c</sup>
       item<sup>c</sup>
       list item<sup>c</sup>
       laptop<sup>c</sup>
       product (business)<sup>c</sup>
       Device<sup>c</sup>
       Laptop<sup>c</sup>
       PortableDevice<sup>c</sup>
       Product<sup>c</sup>
       product medium<sup>c</sup>
has facts
       item of op Apple PC
       is member of op ApplePC
       last item of op ApplePC
       previous item<sup>op</sup> iMac 27 RetinaDisplay 5k 256
       has price<sup>op</sup> 1000Euro
       directly precedes<sup>op</sup> iMac 27 RetinaDisplay 5k 256
       precedes<sup>op</sup> iPhone11 64
       precedes<sup>op</sup> iMac 27 RetinaDisplay 5k 256
       precedes<sup>op</sup> iPhoneX 64
       designedBy<sup>op</sup> Foxconn
       hasBrand<sup>op</sup> Apple
       isContainedInop AppleCatalog
       producedBy<sup>op</sup> Qualcomm
       soldBy<sup>op</sup> Apple
       ChargingPortType<sup>dp</sup> "USB-C"^^string
       Color<sup>dp</sup> "Gold, Silver, Space Gray"^^string
       CpuTypedp "Apple M1 chip"^^string
       Depth<sup>dp</sup> "212.4"^^double
       Height<sup>dp</sup> "16.1"^^double
       MemorySize<sup>dp</sup> "256"^^non negative integer
       OperatingSystem<sup>dp</sup> "macOS Big Sur"^^string
       Pricedp "1159.0"^^double
       ProductNamedp "MacBook Air (M1, 2020)"^^string
       RamSize<sup>dp</sup> "8"^^non negative integer
       RamType<sup>dp</sup> "DDR4"^^string
```

RollOutDatedp "2020-11-17T00:00:00"^^date time

ScreenSizedp "13.3"^^double

```
Weight<sup>dp</sup> "1.29"^^double
Width<sup>dp</sup> "304.1"^^double
Customer's range the product is made to "Medium"^^string
isTouchScreen<sup>dp</sup> "false"^^boolean
```

## Michela<sup>ni</sup>

back to ToC or Named Individual ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#Michela\_CasualUser

## belongs to

person<sup>c</sup>

User<sup>c</sup>

## has facts

buysFrom<sup>op</sup> SamsungCatalog

buysProduct<sup>op</sup> SamsungGalaxyS10 global

## Nike<sup>ni</sup>

back to ToC or Named Individual ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#Nike

A company that sells sports products

## belongs to

organization<sup>c</sup>

Company

# Qualcomm<sup>ni</sup>

back to ToC or Named Individual ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#Qualcomm

Factory company that produces CPUs for Apple

## belongs to

organization<sup>c</sup>

<u>Company</u><sup>c</sup>

Factory<sup>c</sup>

Manufacturer<sup>c</sup>

#### has facts

produces<sup>op</sup> AirPods wirelessCharge

produces op AppleWatchSeries 6 40mm GPS Cellular

produces<sup>op</sup> iPadAir 2020

produces<sup>op</sup> iPhone11 64

produces op MacBookAir M1

produces<sup>op</sup> iMac 27 RetinaDisplay 5k 256

produces<sup>op</sup> iPhone12\_64

# Samsung<sup>ni</sup>

back to ToC or Named Individual ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#Samsung

Samsung is a South Korean multinational electronics company headquartered in the Yeongtong District of Suwon

## belongs to

organization<sup>c</sup> Company<sup>c</sup>

Manufacturer<sup>c</sup>

#### has facts

brandContainedInop SamsungCatalog

hasCatalog<sup>op</sup> SamsungCatalog

isBrandOf<sup>op</sup> SamsungGalaxyS10 global

isBrandOf<sup>op</sup> SamsungGalaxyS20 5G global

isBrandOfop USBC cable

manufacturersToop Huáshuò

manufacturersTo<sup>op</sup> ShortEngineer

putInBoxes<sup>op</sup> USBC cable

sells<sup>op</sup> SamsungGalaxyS10 global

sells<sup>op</sup> SamsungGalaxyS20\_5G\_global

sells<sup>op</sup> USBC cable

# SamsungAccessories<sup>ni</sup>

back to ToC or Named Individual ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#SamsungAccessories

Section of the Samsung Product List that covers Accessories

#### belongs to

(collections) Bag<sup>c</sup>

Collection<sup>c</sup>

list<sup>c</sup>

ProductCatalog<sup>c</sup>

catalogc

#### has facts

has item<sup>op</sup> USBC cable

has member<sup>op</sup> USBC cable

is member of op Samsung Catalog

has first itemop USBC cable

has last itemoop USBC cable

# SamsungCatalog<sup>ni</sup>

back to ToC or Named Individual ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#SamsungCatalag

```
Samsung web site catalog
belongs to
      Collection<sup>c</sup>
      ProductCatalog<sup>c</sup>
      SellingCatalog<sup>c</sup>
      catalogc
has facts
      has member op Samsung Accessories
      has member<sup>op</sup> SamsungGalaxy
      contains op Samsung Galaxy S10 global
      contains op Samsung Galaxy S20 5G global
      contains<sup>op</sup> USBC cable
      containsBrandop Samsung
                                                             back to <u>ToC</u> or <u>Named</u> Individual ToC
SamsungGalaxy<sup>ni</sup>
IRI: https://evilscript.altervista.org/productCatalog.owl#SamsungGalaxy
Section of the Samsung Product List that covers Phones
belongs to
      (collections) Bag<sup>c</sup>
      Collection<sup>c</sup>
      list<sup>c</sup>
      ProductCatalog<sup>c</sup>
      catalog<sup>c</sup>
has facts
      has item op Samsung Galaxy S10 global
      has itemop SamsungGalaxyS20 5G global
      has member<sup>op</sup> SamsungGalaxyS10 global
      has member<sup>op</sup> SamsungGalaxyS20 5G global
      is member of op Samsung Catalog
      has first item op Samsung Galaxy S10 global
      has last item op SamsungGalaxyS20 5G global
                                                             back to ToC or Named Individual ToC
SamsungGalaxyS10_global<sup>ni</sup>
IRI: https://evilscript.altervista.org/productCatalog.owl#SamsungGalaxyS10 global
belongs to
      physical object<sup>c</sup>
      item<sup>c</sup>
      list item<sup>c</sup>
      smartphone<sup>c</sup>
      product (business)<sup>c</sup>
```

Device<sup>c</sup>

**Product<sup>c</sup>** product medium<sup>c</sup> Smartphone<sup>c</sup> has facts item of op Samsung Galaxy is member of op Samsung Galaxy first item of op Samsung Galaxy next itemop SamsungGalaxyS20 5G global has price<sup>op</sup> 500Euro directly follows<sup>op</sup> SamsungGalaxyS20 5G global follows<sup>op</sup> SamsungGalaxyS20 5G global containsInBoxop USBC cable designedBy<sup>op</sup> ShortEngineer hasBrandop Samsung isContainedIn<sup>op</sup> SamsungCatalog predecessorOfop SamsungGalaxyS20 5G global producedByop Huáshuò soldBy<sup>op</sup> Samsung CameraMegaPixels<sup>dp</sup> "16.0"^^double ChargingPortTypedp "USB-C"^^string Colordp "Prism White, Prism Black, Prism Green, Prism Blue, Canary Yellow, Flamingo Pink, Cardinal Red, Smoke Blue" Astring CpuTypedp "Exynos 9820 (8 nm)"^^string Depth<sup>dp</sup> "7.8"^^double EANdp "SM-G973F/DS"^\string Height<sup>dp</sup> "149.9"^^double MemorySize<sup>dp</sup> "128"^^non negative integer OperatingSystem<sup>dp</sup> "Android9"^^string Pricedp "549.0"^^double ProductName<sup>dp</sup> "Samsung Galaxy S10 128"^^string RamSize<sup>dp</sup> "8"^^non negative integer RollOutDatedp "2019-03-09T00:00:00"^^date time ScreenSizedp "6.1"^^double Weight<sup>dp</sup> "157.0"^^double Width<sup>dp</sup> "70.4"^^double Customer's range the product is made to dp "Medium"^^string isTouchScreendp "true"^^boolean back to ToC or Named Individual ToC SamsungGalaxyS20 5G global<sup>ni</sup>

IRI:

https://evilscript.altervista.org

/productCatalog.owl#SamsungGalaxyS20 5G global

Smarphone made by Samsung

PortableDevice<sup>c</sup>

belongs to

physical object<sup>c</sup>

```
item<sup>c</sup>
      list item<sup>c</sup>
      <u>smartphone</u><sup>C</sup>
      product (business)<sup>c</sup>
      Device<sup>c</sup>
      Portable Device<sup>C</sup>
      Product<sup>c</sup>
      product high<sup>c</sup>
      Smartphone<sup>c</sup>
has facts
      item of Samsung Galaxy
      is member of op Samsung Galaxy
      last item of op Samsung Galaxy
      previous item<sup>op</sup> SamsungGalaxyS10_global
      has price op 800Euro
      directly precedes<sup>op</sup> SamsungGalaxyS10 global
      precedes<sup>op</sup> SamsungGalaxyS10 global
      containsInBoxop USBC cable
      designedBy<sup>op</sup> ShortEngineer
      hasBrand<sup>op</sup> Samsung
      isContainedInop SamsungCatalog
      producedByop Huáshuò
      soldByop Samsung
      successorOfop SamsungGalaxyS10 global
      CameraMegaPixels<sup>dp</sup> "64.0"^^double
      ChargingPortType<sup>dp</sup> "USB-C"^^string
      Color Cosmic Grey, Cloud Blue, Cloud Pink, Cloud White, Aura
      Red"^^string
      CpuTypedp "Exynos 990 (7 nm+)"^^string
      Depth<sup>dp</sup> "7.9"^^double
      EANdp "SM-G981F"^^string
      Height<sup>dp</sup> "15.7"^^double
      MemorySize<sup>dp</sup> "128"^^non negative integer
      OperatingSystem<sup>dp</sup> "Android10"^^string
      Pricedp "1029.0"^^double
      ProductNamedp "Samsung Galaxy S20 5G 128" \^string
      RamSize<sup>dp</sup> "8"^^non negative integer
      RollOutDatedp "2020-03-06T00:00:00"^^date time
      ScreenSizedp "6.2"^^double
      Weight<sup>dp</sup> "163.0"^^double
      Widthdp "69.1"^^double
      Customer's range the product is made to "High" *\^string
      isTouchScreen<sup>dp</sup> "true"^^boolean
```

## ShortEngineer<sup>ni</sup>

back to ToC or Named Individual ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#ShortEngineer

```
A company that does not exist
belongs to
      organization<sup>c</sup>
      Company<sup>c</sup>
      Engineering<sup>C</sup>
      ITEngineering<sup>c</sup>
      Manufacturer<sup>c</sup>
has facts
      designs<sup>op</sup> SamsungGalaxyS10 global
      designs<sup>op</sup> SamsungGalaxyS20_5G_global
      isManufacturerOfop Samsung
                                                               back to ToC or Named Individual ToC
ShortFactory<sup>ni</sup>
IRI: https://evilscript.altervista.org/productCatalog.owl#ShortFactory
A small product factory that only produces Beats!
belongs to
      organization<sup>c</sup>
      Company
      Factory
      Manufacturer<sup>c</sup>
has facts
      produces<sup>op</sup> Beats cuffie
                                                               back to ToC or Named Individual ToC
USBC_cable<sup>ni</sup>
IRI: https://evilscript.altervista.org/productCatalog.owl#USBC cable
The new world standard for USB communication
belongs to
      physical object<sup>c</sup>
      item<sup>c</sup>
      list item<sup>c</sup>
      power cable<sup>c</sup>
      product (business)<sup>c</sup>
      Accessory<sup>c</sup>
      cablec
      Product<sup>c</sup>
has facts
      item of op Samsung Accessories
      is member of op Samsung Accessories
      first item of op Samsung Accessories
      last item of op Samsung Accessories
```

```
hasBrand<sup>op</sup> Samsung
inBoxOf<sup>op</sup> iPadAir 2020
inBoxOf<sup>op</sup> SamsungGalaxyS10 global
inBoxOf<sup>op</sup> SamsungGalaxyS20 5G global
isContainedIn<sup>op</sup> SamsungCatalog
soldBy<sup>op</sup> Samsung
ProductName<sup>dp</sup> "USB-C Cable"^^string
```

```
ZenBookFlip_S_UX371<sup>ni</sup>
```

back to ToC or Named Individual ToC

IRI: https://evilscript.altervista.org/productCatalog.owl#ZenBookFlip\_S\_UX371

2-in-1 made by Asus

```
belongs to
```

physical object<sup>c</sup>

item<sup>c</sup>

list item<sup>c</sup>

2 in 1 p c<sup>c</sup>

product (business)<sup>c</sup>

**Device**<sup>C</sup>

PortableDevice<sup>c</sup>

Product<sup>c</sup>

2in1<sup>c</sup>

#### has facts

item of Op Asus PC

is member of op AsusPC

first item of op AsusPC

last item of op AsusPC

has price<sup>op</sup> 1800Euro

designedByop Asus

hasBrand<sup>op</sup> Asus

isContainedInop AsusCatalog

producedByop Huáshuò

soldBy<sup>op</sup> Asus

CameraMegaPixels<sup>dp</sup> "1.2"^^double

ChargingPortTypedp "USB-C"^^string

Color<sup>dp</sup> "Nero jada"^^string

CpuTypedp "Intel Core i7-1165G7"^^string

Depth<sup>dp</sup> "1.19"^^double

EAN<sup>dp</sup> "UX371EA"^^string

Height<sup>dp</sup> "21.1"^^double

Height<sup>dp</sup> "30.5"^^double

MemorySize<sup>dp</sup> "1000"^^non negative integer

OperatingSystem<sup>dp</sup> "Windows 10 Home"^^string

Pricedp "1599.0"^^double

ProductName<sup>dp</sup> "ZenBook Flip S UX371"^^string

RamSize<sup>dp</sup> "16"^^non negative integer

RamTypedp "LPDDR4X on-board"^^string

RollOutDate<sup>dp</sup> "2020-08-21T00:00:00"^^date time

ScreenSizedp "13.3"^^double

Weight<sup>dp</sup> "1200.0"^^double

isTouchScreendp "true"^boolean

# **Annotation Properties**

<u>covers requirements</u> <u>creator</u> <u>date</u> <u>description</u> <u>extracted from</u>

<u>has author</u> <u>has component</u> <u>has consequences</u> <u>has intent</u>

<u>is specialization of preferred namespace prefix preferred namespace uri reengineered from related c ps scenarios</u>

# covers requirements<sup>ap</sup>

back to ToC or Annotation Property ToC

**IRI:** http://www.ontologydesignpatterns.org/schemas/cpannotationschema.owl#coversRequirements

This annotation property is used for exemplifying possible requirements the content pattern provides a solution for. Requirements are expressed as natural language competency questions.

# creatorap

back to ToC or Annotation Property ToC

IRI: http://purl.org/dc/elements/1.1/creator

dateap

back to ToC or Annotation Property ToC

IRI: http://purl.org/dc/elements/1.1/date

description<sup>ap</sup>

back to ToC or Annotation Property ToC

**IRI:** http://purl.org/dc/elements/1.1/description

extracted fromap

back to ToC or Annotation Property ToC

**IRI:** http://www.ontologydesignpatterns.org/schemas/cpannotationschema.owl#extractedFrom

This annotation property should be assigned with a URI, which points to the possible reference ontology which the annotated pattern was extracted from (i.e. the reference ontology that the ontology elements have been deeply or partially cloned by). The range is not explicit in the definition of the annotation property because it

would turn the ontology to OWL Full. E.g. The participation pattern is extracted from the Dolce Ultra Lite ontology, hence the value for this annotation property is <a href="http://www.ontologydesignpatterns.org/ont/dul/DUL.owl">http://www.ontologydesignpatterns.org/ont/dul/DUL.owl</a>

## has authorap

back to ToC or Annotation Property ToC

**IRI:** http://www.ontologydesignpatterns.org/schemas/cpannotationschema.owl#hasAuthor

# has componentap

back to ToC or Annotation Property ToC

**IRI:** http://www.ontologydesignpatterns.org/schemas/cpannotationschema.owl#hasComponent

This annotation property is useful for content ontology design patterns. Its value is a URI, which refers to another content ontology design pattern which is a component of the annotated one.

# has consequences<sup>ap</sup>

back to ToC or Annotation Property ToC

**IRI:** http://www.ontologydesignpatterns.org/schemas/cpannotationschema.owl#hasConsequences

This annotation property is used for briefly describing the benefits and/or possible trade-offs when using the CP.

## has intentap

back to ToC or Annotation Property ToC

**IRI:** http://www.ontologydesignpatterns.org/schemas/cpannotationschema.owl#hasIntent

This annotation property is used in order to describe the intent of the content pattern.

# is specialization of ap

back to ToC or Annotation Property ToC

**IRI:** http://www.ontologydesignpatterns.org/schemas/cpannotationschema.owl#isSpecializationOf

This annotation property is useful for content ontology design patterns and its elements. Its value is a URI, which refers either to a content ontology design pattern that is specialized by the annotated one, or to an ontology element that is specialized by the annotated one.

# preferred namespace prefix<sup>ap</sup>

back to ToC or Annotation Property ToC

IRI: http://purl.org/vocab/vann/preferredNamespacePrefix

# preferred namespace uriap

back to ToC or Annotation Property ToC

IRI: http://purl.org/vocab/vann/preferredNamespaceUri

# reengineered fromap

back to ToC or Annotation Property ToC

**IRI:** http://www.ontologydesignpatterns.org/schemas/cpannotationschema.owl#reengineeredFrom

This annotation property should be assigned with a URI, which points to the concept schema, page, or anything else from which the annotated pattern was reengineered. If the source does not have any URI e.g., a printed book, this property value should provide information as precise as possible in order to identify the source. This property is alternative to the extractedFrom property because it is used when the pattern come from a concept schema which is not an owl ontology. For example content ontology design patterns, which are reengineered from data model patterns, rdf schemas, etc. should be annotated with this property. E.g. The basicpersonalfoaf pattern is extracted from the rdf FOAF specification, hence the value for this annotation property is <a href="http://xmlns.com/foaf/spec/20071002.rdf">http://xmlns.com/foaf/spec/20071002.rdf</a>

# related c psap

back to ToC or Annotation Property ToC

**IRI:** http://www.ontologydesignpatterns.org/schemas/cpannotationschema.owl#relatedCPs

This annotation property can be used to indicate other CPs (if any) that specialize, generalize, inlcude, or are components of the CP. Furthermore, this field may indicate other CPs that are typically used in conjunction with the described one. Important similarities and differences with other patterns can be also described here.

# scenarios ap

back to ToC or Annotation Property ToC

**IRI:** http://www.ontologydesignpatterns.org/schemas/cpannotationschema.owl#scenarios

This annotation property is used for describing examples of instantiation of the Content OP. For example, for the part-of Content OP (which represents part-whole relations) a possible scenario is the sentence: "the brain is part of the human body". Scenarios are expressed as natural language sentences.

# Namespace Declarations

back to ToC

## default namespace

0-1 http://xmlns.com/foaf/0.1/ bag http://www.ontologydesignpatterns.org/cp/owl/bag.owl# collectionentity http://www.ontologydesignpatterns.org/cp/owl/collectionentity.owl# cpannotationschema http://www.ontologydesignpatterns.org/schemas/cpannotationschema.owl# dc http://purl.org/dc/elements/1.1/ dcat https://www.w3.org/ns/dcat# dcmitype http://purl.org/dc/dcmitype/ evilscript-altervista-org https://evilscript.altervista.org/ id http://www.productontology.org/id/ list http://www.ontologydesignpatterns.org/cp/owl/list.owl# owl http://www.w3.org/2002/07/owl# price http://www.ontologydesignpatterns.org/cp/owl/price.owl# productCatalog https://evilscript.altervista.org/productCatalog.owl# rdf http://www.w3.org/1999/02/22-rdf-syntax-ns#

rdfs

http://www.w3.org/2000/01/rdf-schema#

sequence

http://www.ontologydesignpatterns.org/cp/owl/sequence.owl#

vann

http://purl.org/vocab/vann/

xsd

http://www.w3.org/2001/XMLSchema#