Ontology

What is an ontology?

In philosophy,

- "*ontology is the study of being or existence. It seeks to describe or posit the basic categories and relationships of being or existence to define entities and types of entities.*"[1)]

In modern computer science and information science basic definitions consider an ontology to be:

- "*a data model that represents* **a set of [concepts] within a domain**, *and the* **relationships between those [concepts]**"[2)]
- "**an explicit specification of a conceptualization**."[3)]
- "*an explicit formal specification of the terms in the domain and relations among them*"[4)]

In more details, an ontology can be described as:

- a formal explicit description of **concepts** or *classes* in a domain of discourse, with
- **properties of each concept** describing various features and attributes of the concept (*slots*, *roles* or *properties*), and
- **restrictions on concept** slots (*facets* or *role restrictions*).[5)]

An ontology has the following properties:[6)]

- it is used to reason about the objects in a domain;
- specifies the classes of concepts and their relations at a higher level than relevant to the domain;
- captures the intrinsic conceptual structure of a domain;
- forms the hearth of the knowledge representation within a domain.

Why do we need an ontology?

An ontology can be used to:[7)]

- *share common understanding of the structure of information among people or software agents*
- *enable reuse of domain knowledge*
- *make domain assumptions explicit*
- *separate domain knowledge from the operational knowledge*
- *analyze domain knowledge*

So how do you create an ontology?

[You can follow this brief guide] or a more detailed description with examples: [Ontology Development 101: A Guide to Creating Your First Ontology].

[1] , [2] , [6]

Rana, Noman. Small Business - The Art of the Start. Self-Help Publishers, 2009.
[3]

Gruber, Thomas R. A translation approach to portable ontology specifications. Knowledge acquisition, 5: 199-220, 1993.
[4]

Gruber, Thomas R. A translation approach to portable ontology specifications. Knowledge acquisition, 5: 199-220, 1993. cited by Noy, Natalya F., and Deborah L. Mcguinness. Ontology Development 101: A Guide to Creating Your First Ontology, 2001.
[5] , [7]

Noy, Natalya F., and Deborah L. Mcguinness. Ontology Development 101: A Guide to Creating Your First Ontology, 2001.

From:
https://learning-theories.org/ - **Learning Theories**

Permanent link:
https://learning-theories.org/doku.php?id=misc:ontology&rev=1326364961

Last update: **2023/06/19 15:49**