

TALOS ERA CHAIR IN ARTIFICIAL INTELLIGENCE FOR HUMANITIES AND SOCIAL SCIENCES

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UNIVERSITY OF CRETE

Knowledge Graph for SSH

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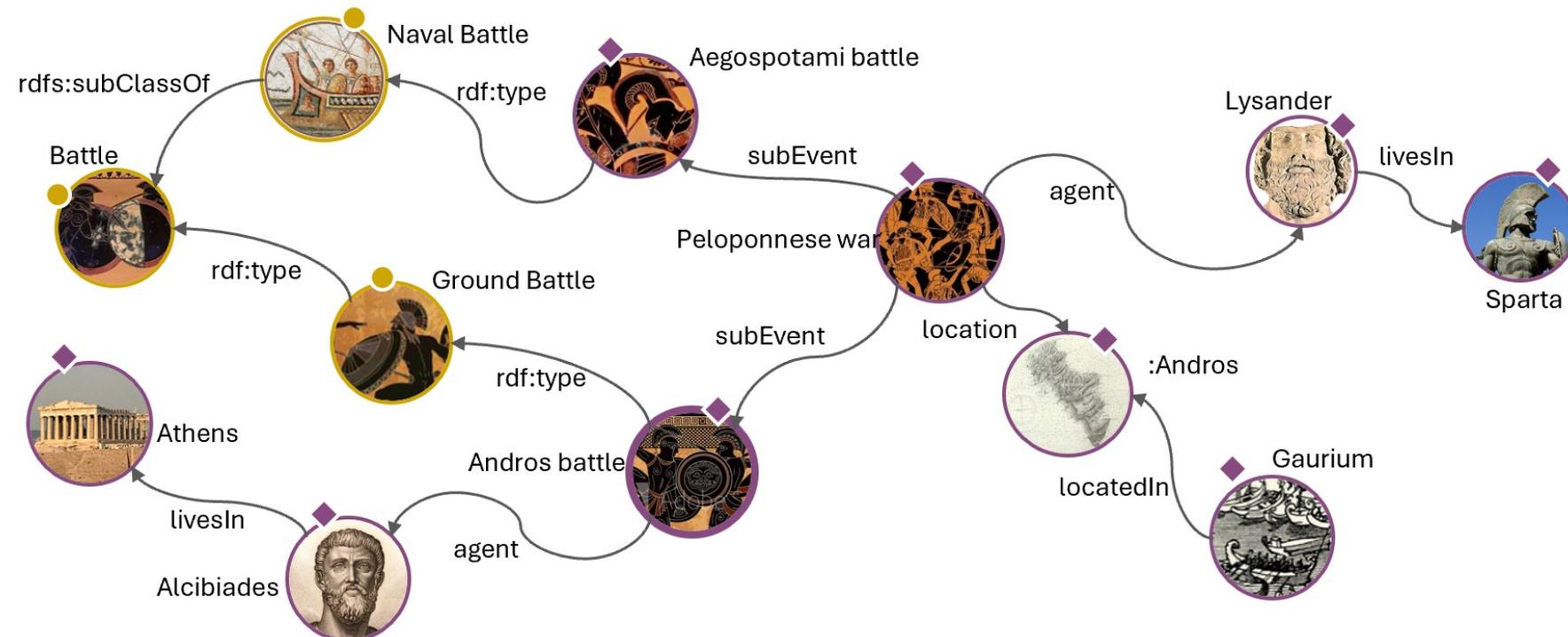




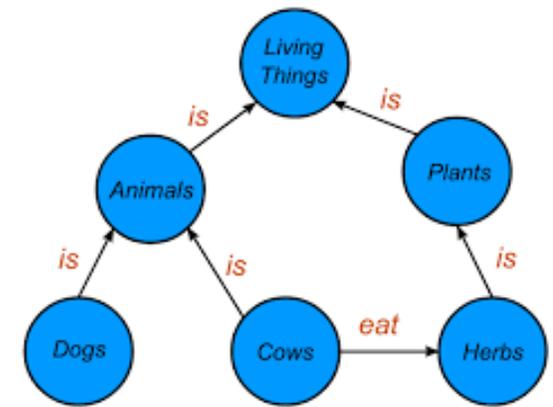
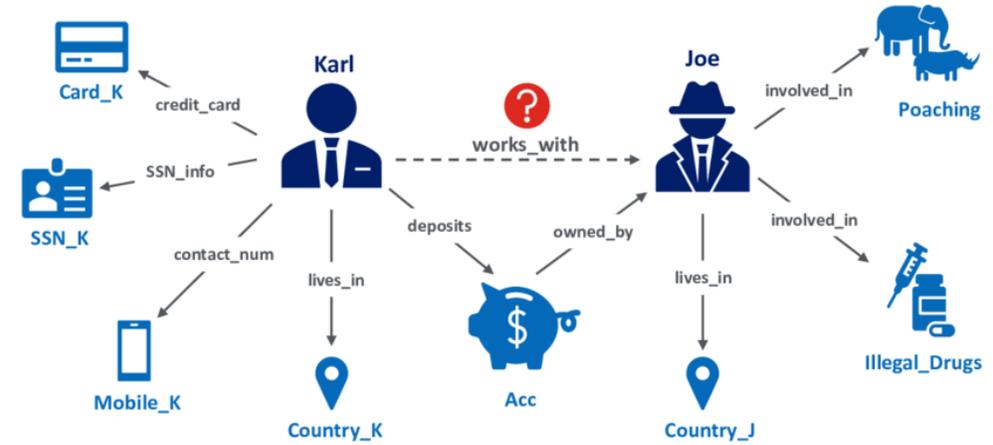
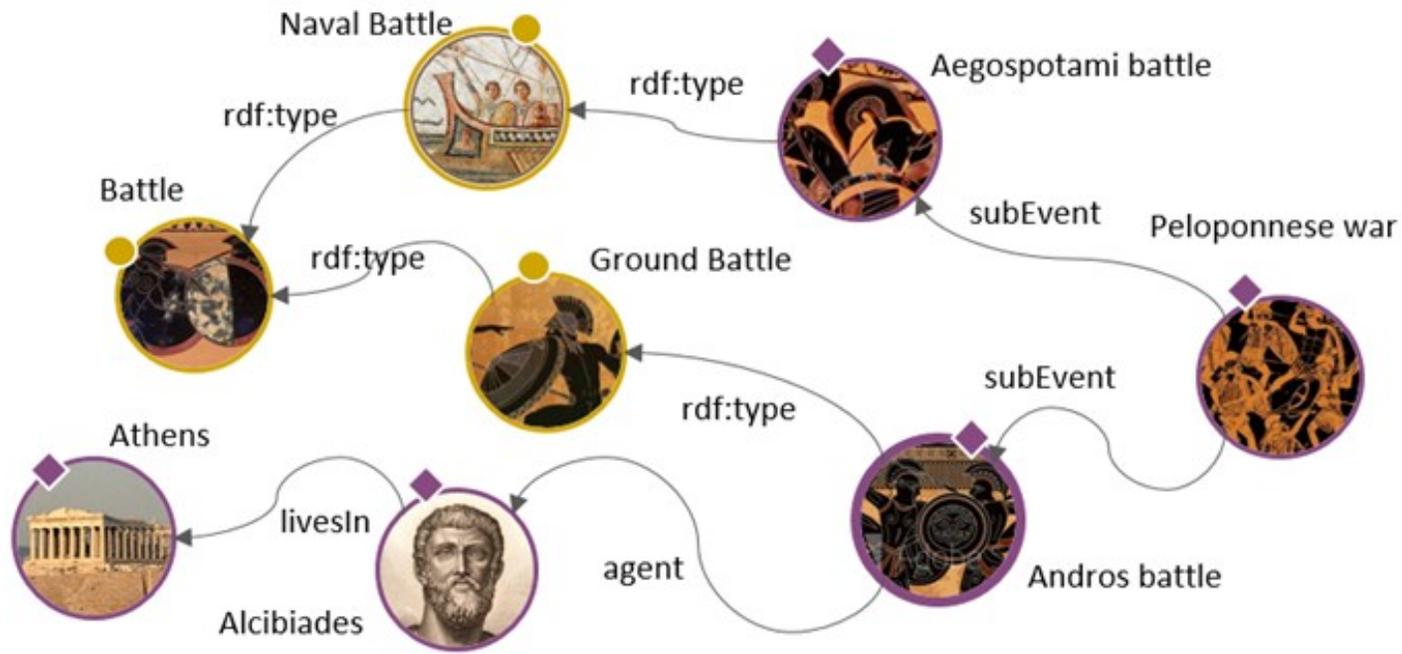
Knowledge Graph for SSH

This module will present the fundamentals of Knowledge Graphs:

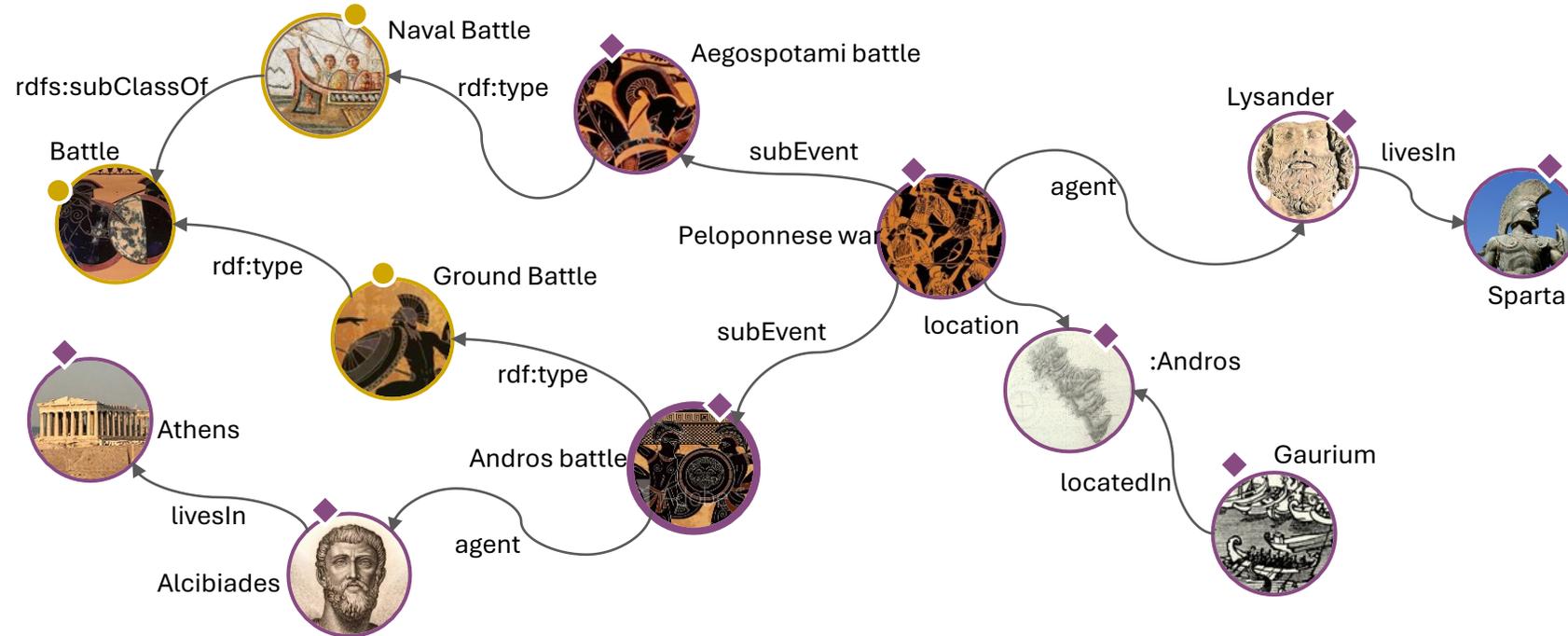
- What?
- Who for?
- What for?
- How to build them?
- How to query them?



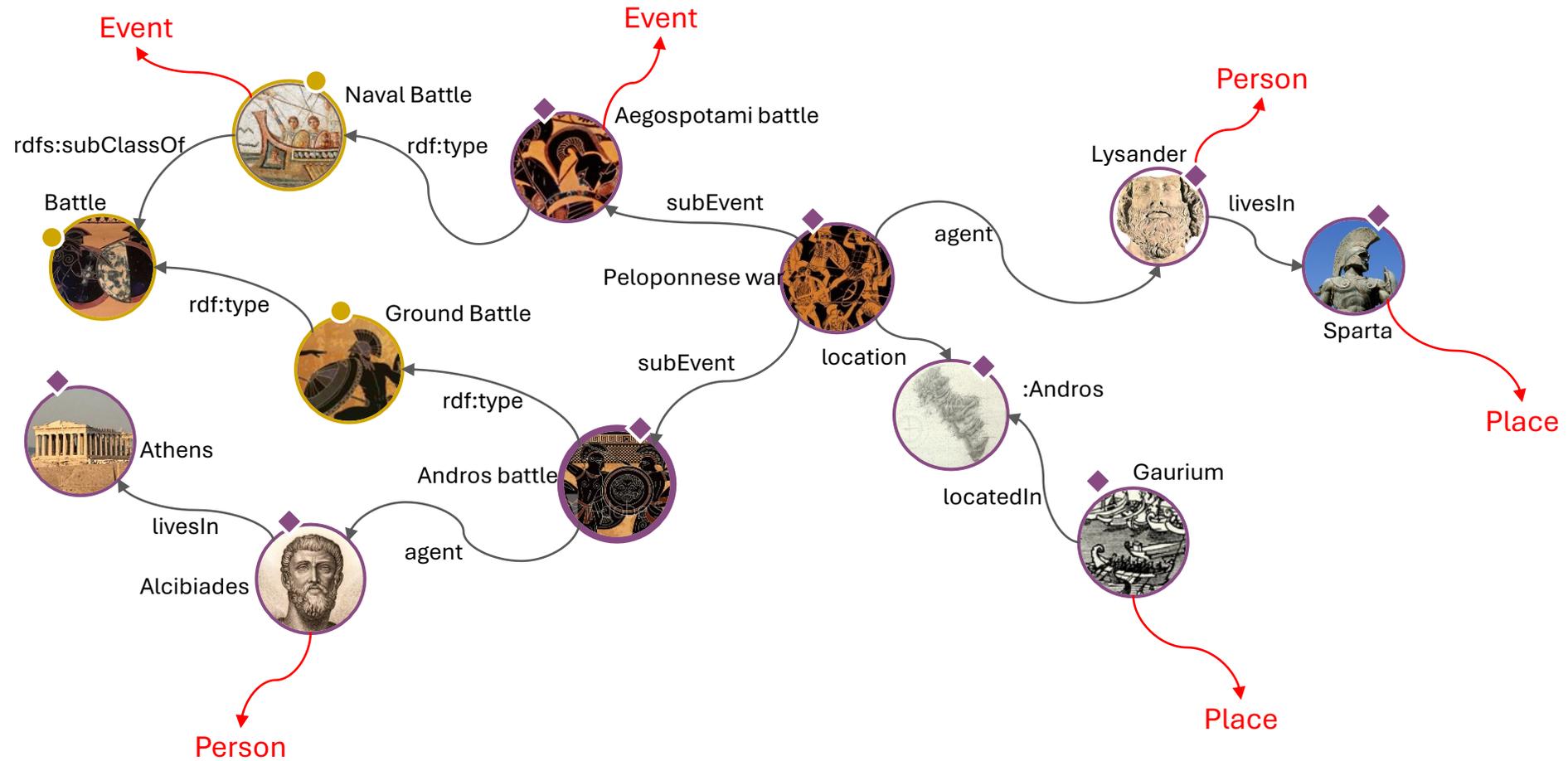
Knowledge Graph for SSH



Knowledge Graph for SSH



Knowledge Graph for SSH



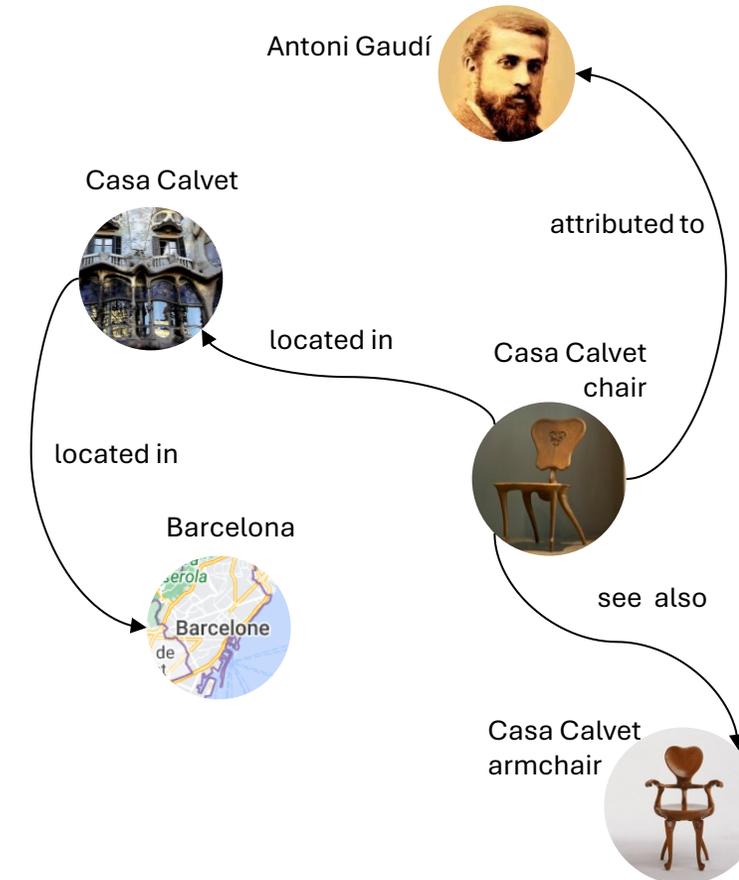


Knowledge Graph for SSH

A knowledge graph is a directed labeled graph in which the labels have well-defined meanings.

A directed labeled graph consists of nodes, edges, and labels. Anything can act as a node, for example, people, buildings, cities, objects, etc.

An edge connects a pair of nodes and captures the relationship of interest between them, for example, friendship relationship between two people, customer relationship between a company and person, or a network connection between two computers.



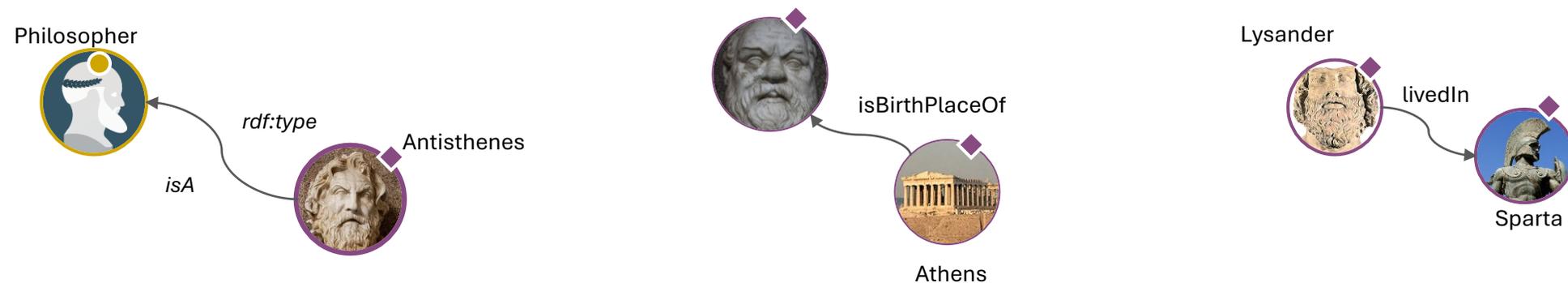


Knowledge Graph for SSH

A **Knowledge Graph (KG)** is a special kind of database (a knowledge base) which stores knowledge in a machine-readable form and provides a means for information to be collected, organised, shared, searched and utilised. Knowledge is represented as a graph where nodes represent concepts, objects, actions, events, situations, etc. and links the relationships between nodes.

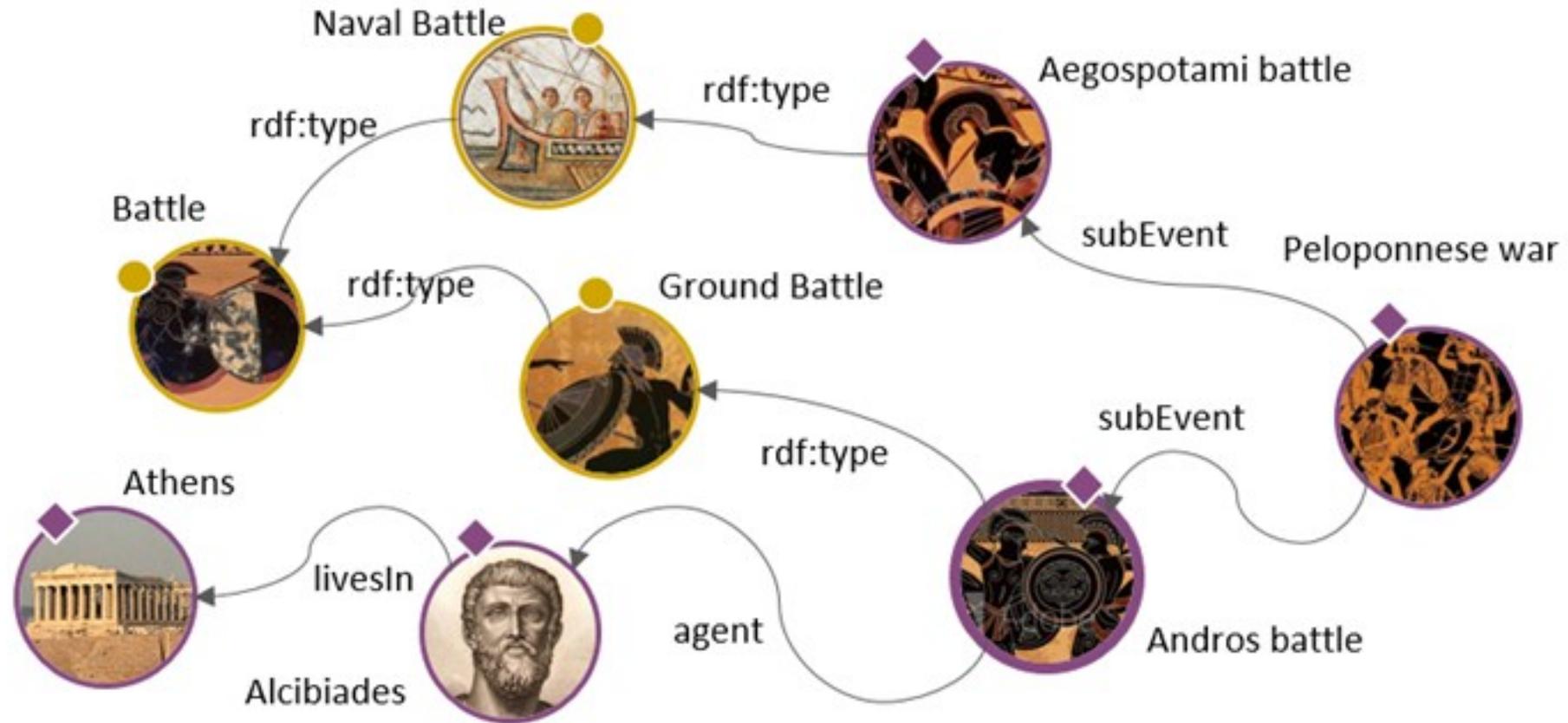
A **Knowledge Graph (KG)** is a structured representation of facts and relationships between real-world entities such as people, places, events, or concepts. These facts are organized in a graph format, where:

- **Nodes** represent entities (e.g., *Socrates*, *Athens*, *Philosopher*)
- **Edges** represent relationships between entities (e.g., *livedIn*, *isA*, *isBirthPlaceOf*)



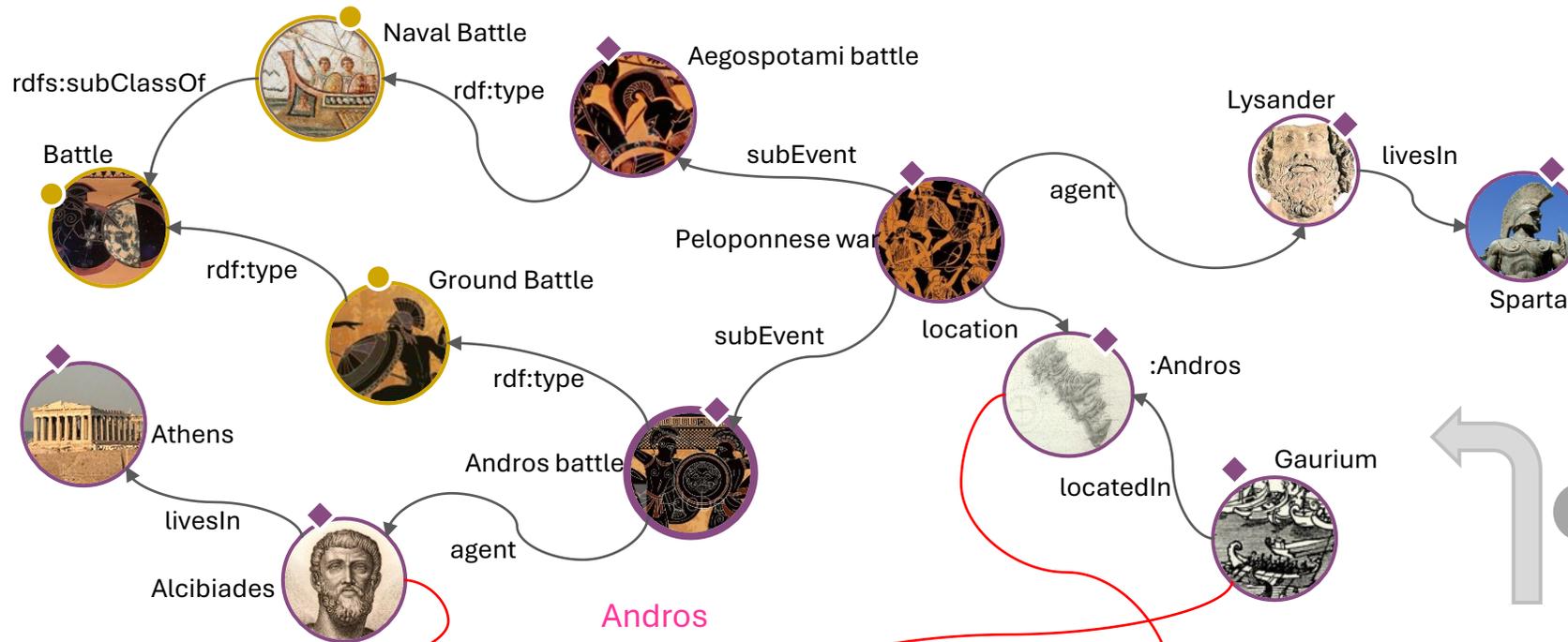
Knowledge Graph for SSH

A knowledge graph is a special kind of database (knowledge base) which stores knowledge in a machine-readable form and provides a means for information to be collected, organised, shared, searched and utilised.





Knowledge Graph for SSH



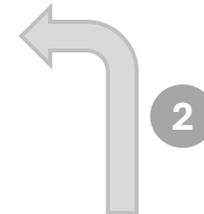
Knowledge Graph

Xen. Hell. 1.4 **Alcibiades** disembarked his army at **Gaurium** in the territory of **Andros**; and when the men of **Andros** and the **Laconians** who were there came forth to meet him, the **Athenians** routed them, shut them up in their city, and killed some few of them.
<http://www.perseus.tufts.edu/hopper/text?doc=Perseus%3Atext%3A1999.01.0206%3Abook%3D1%3Achapter%3D4>

Ἀλκιβιάδης δὲ τὸ στράτευμα ἀπεβίβασε τῆς Ἀνδρίας χώρας εἰς **Γαύριον**: ἐκβοηθήσαντας δὲ τοὺς **Ἀνδρίους** ἐτρέψαντο καὶ κατέκλεισαν εἰς τὴν πόλιν καὶ τινὰς **ἀπέκτειναν** οὐ πολλοὺς, καὶ τοὺς **Λάκωνας** οἱ αὐτόθι ἦσαν.
<http://www.perseus.tufts.edu/hopper/text?doc=urn:cts:greekLit:tlg0032.tlg001.perseus-grc1:1.4>

- 1
- Alcibiades
 - Gaurium
 - Andros
 - Laconians
 - Athenians

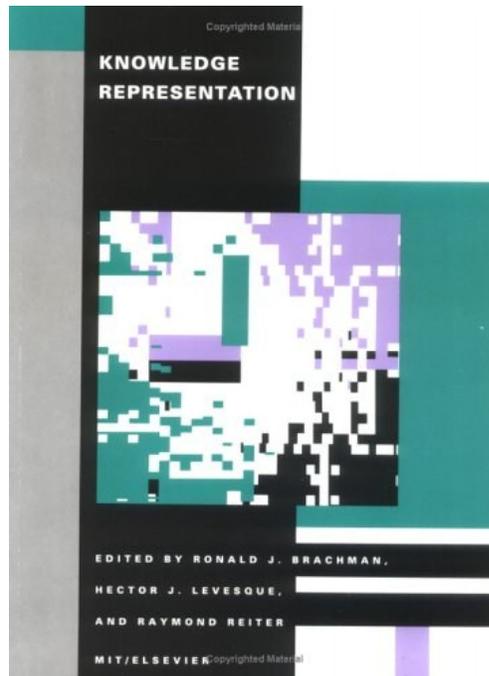
Text





Knowledge Graph for SSH

A **knowledge graph** is an advanced data structure that represents information in a network of interlinked entities. It's connected to a long history of research in an area of artificial intelligence called **knowledge representation**.



Brachman, R. J., Levesque, H. J., & Reiter, R. (1992).
Knowledge representation. In **Special issues of Artificial Intelligence.** The MIT Press.



Knowledge Graph for SSH

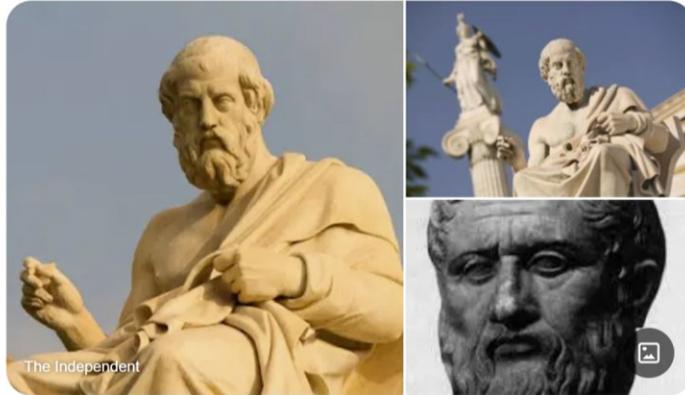


plato ✕ 🎤 📷 🔍

Plato

Philosopher

- Overview
- Books



Massachusetts Institute of Technology

Works by Plato - The Internet Classics Archive

Works by Plato. Apology. Translated by Benjamin Jowett. Charmides, or Temperance. Written 380 BCE. Translated by Benjamin Jowett. Cratylus. Written 360 BCE.

Born > Classical Athens

Died > Athens, Greece

See also

- Republic**
Book by Plato
- Timaeus**
Book by Plato

Wikipedia
<https://en.wikipedia.org/wiki/Plato>

Plato

Plato was an ancient Greek philosopher of the Classical period who is considered a foundational thinker in Western philosophy and an innovator of the ...

- Plato's theory of soul
- The Republic
- Plato (disambiguation)
- Socrates



About

Plato was an ancient Greek philosopher of the Classical period who is considered a foundational thinker in Western philosophy and an innovator of the written dialogue and dialectic forms. [Wikipedia](#)

- Born:** Classical Athens
- Died:** Athens, Greece
- Influenced by:** Socrates, Pythagoras, Heracitus, Parmenides · [See more](#)
- Parents:** Ariston of Athens, Perictione
- Siblings:** Glaucon, Adeimantus of Collytus, Potone, Antiphon
- Era:** Ancient Greek philosophy

[Feedback](#)

People also ask

- What is Plato mainly known for? ⌵
- What was Plato's most famous quote? ⌵
- What is Plato's main belief? ⌵

References



Singhal, A. (2012, May 16). *Introducing the Knowledge Graph: Things, not strings*. Google Official Blog. <https://blog.google/products/search/introducing-knowledge-graph-things-not/>

Hogan, A., Blomqvist, E., Cochez, M., D'Amato, C., De Melo, G., Gutiérrez, C., Labra Gayo, J. E., Kirrane, S., Neumaier, S., Polleres, A., Navigli, R., Ngonga Ngomo, A.-C., Rashid, S. M., Rula, A., Schmelzeisen, L., Sequeda, J., Staab, S., & Zimmermann, A. (2021). **Knowledge graphs**. *arXiv preprint arXiv:2003.02320v6*. <https://arxiv.org/abs/2003.02320>

