* Knowledge Graphs combine
  + Complex data, often heterogeneous (a dataset composed of different data types, structures, formats or sources)
  + Background knowledge of a topic
  + Common sense knowledge about the world
* Semantic Web – **Web of partially connected vocabularies (ontologies) and knowledge bases)** evolution of the current web.
  + Facts scattered in many locations
  + Represent knowledge on the web that is more easily machine-processable
  + Improve retrieval
  + Use intelligent techniques to take advantage of these representations
  + Delegate autonomous software components (agents)
  + **Beyond machine-readable to machine-understandable**
* Principles of Semantic web
  + Anyone can say anything about anything (**AAA)** – any individual can assert data about some entity. Ideally, combined with data from other sources.
  + Linked Open data cloud and knowledge graphs – originally in HTML. Now, several large public sources available in RDF, including a large number of government datasets and enterprise data stores
  + Information Is distributed, networked, disparate and maybe inconsistent -   
    In general, we cannot assume at any time that we have all the information in the network or even that we know everything that has been asserted about one single topic

RDF – Resource Description Framework

* W3C language for describing metadata on the Web
* Graph data model that formally describes the semantics (meaning of information)

RDF Building Blocks

* Statements – subject-predicate-object triples
  + Assert the properties of a resource, the resource, a property and a value
  + Objects can be resources
* Resources – something we want to describe, e.g authors, books, places, people
  + Every resource has a URI (Unique identifier)
    - URL (Web address) or some kind of unique identifier
* Properties – special type of resources
  + Describe semantic relations between resources; e.g written by, age
  + Identified by a URI

RDF Graph

* Directed graph from the subject to the object