Semantic Web
“The Semantic Web provides a common framework that allows data to be shared and reused across application, enterprise, and community boundaries. It is a collaborative effort led by W3C with participation from a large number of researchers and industrial partners. It is based on the Resource Description Framework (RDF).”
Identifiers: **URI**
- Uniquely identifies a semantic web resource

Data Exchange: **RDF**
- Resource Description Framework: A data model for the objects (“resources”)

Rules: **RIF/SWRL**
- Extending rules support beyond OWL

Ontology: **OWL**
- Adds vocabulary to RDF – property and classes

Taxonomies: **RDFS**
- Resource Description Framework: Schema: Basic vocabulary for RDF

Query: **SPARQL**
- RDF query language

Character set: **Unicode**
- Manipulate text across languages

trusted software
Semantic Web in Nutshell

• Goal to be a universal medium for the exchange of data

• Envisaged to smoothly interconnect personal information management, enterprise application integration, and the global sharing of commercial, scientific and cultural data

• Based on RDF Core Model, the RDF Vocabulary Description Language and the Web Ontology Language
Semantic Web Components

- **XML**: provides a surface syntax for structured documents, but imposes no semantic constraints on the meaning of these documents.

- **XML Schema**: a language for restricting the structure of XML documents.

- **RDF**: a datamodel for objects ("resources") and relations between them, provides a simple semantics for this datamodel, and these datamodels can be represented in an XML syntax.

- **RDF Schema**: a vocabulary for describing properties and classes of RDF resources, with a semantics for generalization-hierarchies of such properties and classes.

- **OWL**: adds more vocabulary for describing properties and classes: among others, relations between classes (e.g. disjointness), cardinality (e.g. "exactly one"), equality, richer typing of properties, characteristics of properties (e.g. symmetry), and enumerated classes.