that lets one write structured web documents with a user-defined vocabulary. XML is particularly suitable for sending documents across the web. In addition, URIs used in XML can be grouped by their *namespace*, signified by NS in the diagram.

RDF is a basic data model, like the entity-relationship model, for writing simple statements about web objects (resources). The RDF data model does not rely on XML, but RDF has an XML-based syntax. Therefore, in figure 1.4, it is located on top of the XML layer.

RDF Schema provides modeling primitives for organizing web objects into hierarchies. Key primitives are classes and properties, subclass and subproperty relationships, and domain and range restrictions. RDF Schema is based on RDF.

RDF Schema can be viewed as a primitive language for writing ontologies. But there is a need for more powerful *ontology languages* that expand RDF Schema and allow the representations of more complex relationships between web objects. The *Logic* layer is used to enhance the ontology language further and to allow the writing of application-specific declarative knowledge.

The *Proof layer* involves the actual deductive process as well as the representation of proofs in web languages (from lower levels) and proof validation.

Finally, the *Trust layer* will emerge through the use of *digital signatures* and other kinds of knowledge, based on recommendations by trusted agents or on rating and certification agencies and consumer bodies. Sometimes "Web of Trust" is used to indicate that trust will be organized in the same distributed and chaotic way as the web itself. Being located at the top of the pyramid, trust is a high-level and crucial concept: the web will only achieve its full potential when users have trust in its operations (security) and in the quality of information provided.

This classical layer cake was a major driver in the agenda of the Semantic Web, but is now quite outdated. In particular, a number of alternatives for the ontology vocabulary layer have emerged. In addition, rule languages have been defined on top