The Web provides access to substantial amount of information. Metadata that means data about data enables the discovery of such information. When the metadata is effectively used, it increases the usefulness of the original data/resource and facilitates the resource discovery. Resource Description Framework (RDF) is a basis for handling these metadata and is a graph-based, self-describing data format that represents information about web-based resources. It is necessary to store the data persistently for many Semantic Web applications that were developed on RDF to perform effective queries. Because of the difficulty of storing and querying RDF data, several storage techniques have been proposed for these tasks. In this paper, we present the motivations for using the RDF data model. Several storage techniques are discussed along with the methods for optimizing the queries for RDF datasets. We present the differences between the Relational Database and the XML technology. Additionally, we specify some of the use cases for RDF. Our findings will shed light on the current achievements in RDF research by comparing the different methodologies for storage and optimization proposed so far, thus identifying further research areas.