

Guidelines for the OBDA Project

1. Choose a domain of interest (e.g., Movies, Toto, Travel Booking, Tournaments, etc.) with potentially big data.
2. Model your domain by designing an ontology that is rich enough (at least 10-15 concepts, plus the corresponding roles), and represent your ontology using a graphical notation (e.g., in the form of a UML diagram).
3. Represent your ontology in Protégé.
4. Design the relational schema of the relational database used to store the data, and provide a (graphical) representation for it, showing the key and foreign key constraints.
5. Populate the relational database with data (possibly getting the data from the web). The size of your database should be as large as possible (if possible, e.g., in the order of tens of megabytes or larger).
6. Design OBDA mappings to connect the ontology to the database, using the Ontop plugin for Protégé.
7. Develop a Java application for your domain that makes use of the Ontop API to query the database through the ontology, extracting information that is of interest for your domain of choice.

As an example for the kinds of queries that could be posed via your application, you can consider the queries underlying travel booking sites, where some parameters of a request are filled in via a form (e.g., the departure city, departure and arrival date and time, etc.), and answers are retrieved using those parameters. (Take into account that Ontop supports the Conjunctive Query fragment of SPARQL extended with filters.)