7.6 Exposing Relational Databases

Most websites today are not a series of static pages stored on a web server but are instead dynamically generated from data stored in *relational databases*. For example, a real estate website would maintain a database of various homes and apartments with information about price, location, and amenities. This database would then be used to populate web pages. Because so much data is available in relational databases, it can provide a convenient source of instance data.

Here, we give an overview of the process of exposing relational databases as ontologies.

7.6.1 Mapping Terminology

First, we revisit the terminology of a database and how the terminology can be mapped to RDFS/OWL terms. Below is an example *table* from a real estate database. A table is also called a *relation*. The table consist of series of columns with the headings HomeId, City, and Price. These columns are called *attributes*. Each of the rows of the table is called a *tuple*.

Homes

HomeId	**City**	**Price (Euros)**
1	Amsterdam	100 000
2	Utrecht	200 000

Based on this terminology, one can follow a simple approach to map the relational database schema to RDFS or OWL. Each table in the database can be considered a class. Each attribute can be considered a property and each tuple can be considered an instance. Thus, in our example, we have two instances of the class Home. Each instance has a property city and price and the corresponding values (e.g., for HomeId 1, the value of the city property is Amsterdam).