

NL description on the travelling domain

Let's consider that we are in charge of developing an application for our travel agent in New York, and that we have decided to make use of an ontology to represent explicitly the knowledge that will be used by it. We will focus on travelling and Lodging, but leisure time, cultural events, tours, etc., will be considered in further stages of our ontology.

We know that when a client makes a trip, he chooses: transport and accommodation.

Hence, we start by determining the means of transport that are currently available for a travel agency. We will have in our ontology the following ones: planes, trains, cars, ferries, motorbikes and ships. There are no other kinds of transport. From all of them, the travel agency is specially interested in flights, as it is the means of transport mostly used by its customers. In fact, customers are usually interested in the kind of planes that they will fly on: Is it a Boeing, or is it an Airbus? Furthermore, they are even interested in the specific model of the plane in which they will fly (a Boeing 717 or a Boeing 777). We know that each model of transport belongs only to one kind of transportation (e.g., it's either a plane, or a bus, or a car, etc.

For each flight, the agency knows: the arrival date, the departure date, the arrival city, the departure city, the arrival airport, the departure airport, the prices on first class, business class and economy class, the departure time and arrival time. Time and date will be considered as absolute date.

As for the destinations of customers' travels, they are diverse. Some customers ask for trips to the Statue of Liberty in New York; other ask for trips to Washington, San Francisco, Seattle. There are customers interested in visiting Europe: the most common destinations are London, Paris (either the city or Disneyland Paris) and Madrid. Others are interested in more places, such as Cairo (Egypt). We know that the client can use the following transport to move inside the city: underground, city buses, taxis, and rental cars.

Concerning hotels, the agency recommends in all the cities: hotels, and Bed and Breakfasts. Hotels rank from 1 star hotels to 5 star hotels and each hotel belongs to one of these five categories. For all of them, the agency knows their facilities: address, telephone number, URL, capacity, number of rooms, available rooms, descriptions, dogs allowed, distance to the beach, distance to skiing, etc. The agency also knows the facilities of the rooms: number of beds, rates, TV available, Internet connection, etc.

Once we have defined what are the main elements in our domain, we can go further and try to represent some common sense constraints and deductions that can be performed with them. For instance, we know that it is not possible to go from America to Europe by train, car, bike nor motorbike. Having this information in our system will avoid it to search for possible itineraries using these means of transport when a customer wants to travel to Europe. Another example of this kind of constraint may be related to the distance between the origin and destination of our trip and the available means of transport. If distance between two cities is between 400 and 800 miles, and there is no airport close to one of them, the customer will prefer going by car or by train. The customer also prefer to go by car or train if he hates travel by plane. Distances can be either in km or miles.

Finally, we want to represent knowledge about a concrete trip. John is travelling from Madrid to NY on April 5th, 2002 to see the Statue of Liberty and continuing on to Washington on April 11th. He plans to return to Madrid on April 15th. He has selected two hotels belonging to the Holiday Inn chain in New York and Washington.

<http://www.boeing.com/commercial/717/717technical.html> provides Boeing717 technical description.