

17. June 2010

Semantic Web Services

Exercise sheet 10

OWL-S and others

Exercise 1 (OWL-S) (20 points)

Given the scenario described in the Exercise sheet 9 try to formalize a set of ontologies and Web Service descriptions compliant to OWL-S. Discuss similarities and differences to the WSMO-based solution. For your convenience the scenario is given below.

With an invocation of one of the Web Services you can order a package shipment by specifying, senders address, receivers address, package information and a collection interval during which the shipper will come to your premises to collect the package. A shipper either responds with the estimated pickup (respecting the given time constraints) or with a fault message indicating that a pick up is not possible in the requested time interval. We have four distinct shippers with following constraints:

Racer

- Rates(at fee/each lb): Europe(41/6.75), Asia(47.5/7.15), North America(26.25,4.15), Rates for South America like North America, Rates for Oceania like Asia furthermore for each collection order 12.50 are added!
- List of Countries Racer ships to is included in the WSDL file
- Only packages weighing 70lbs or less are shipped
- Constraints on Collection:
 - There should be at least an interval of 120 minutes for collection.
 - Latest Collection time is 8pm.
- Delivery Time

- Ships in 2/3 (domestic/international) business days if collected by 6pm;

Runner

- Rates(at fee/each lb): Europe(50/5.75), Asia(60/8.5), North America(15/0.5), South America(65.75/12), Africa (96.75/13.5), Oceania has the same rates then Asia
- Exact list of countries included in WSDL file
- When ordering a shipment using the Web Services, per invocation the shipment of one package can be ordered.
- If package weight exceeds 70 lbs, weight, length and height are required (the order has to be done via phone or fax)
- Constraints on Collection:
 - Collection can be ordered max 5 working days in advance.
 - Minimum Advance notice for collection is 1 hour
 - Collection is possible between 1am - 12pm (keep in mind that 12pm is noon!)
 - There must be at least an interval of 30 minutes for collection.
- Delivery Time:
 - Ships in 2 business days if collected by 10am;
 - Ships in 3 business days otherwise.

Walker

- Rates(at fee/each lb): Europe(41/5.5), Asia(65/10), North America(34.5/3), South America (59/12.3), Africa (85.03/13), Rates for Oceania like Asia
- Only packages weighing 50 lbs or less are shipped
- Exact list of countries included in WSDL file
- Constraints on Collection:
 - Shipment can be ordered maximum 2 business days in advance (the end of the pickup interval must be at most two business days in advance at the time of ordering).
 - pickup time must be between 6 am and 11.00pm.
 - There must be at least an interval of 30 minutes for collection.
- Delivery Time

- Ships in 2 business days if collected by 5pm

Weasel

- Rates(at fee/each lb): United States(10/1.5)
- Delivery only in United States
- Constraints on Collection
 - the pickup interval must be at least 5 hours
 - the max. pick up interval is 4 days
 - collection can be ordered until 8pm
- Delivery Time
 - 1 day if collected before 2pm

Next, try to express WSMO goals following given constraints:

Goal A1

- to: Tunis
- package dimensions: (l/w/h) 7/6/4 (inch)
- package weight: 1 lb

Goal A2

- to: Luxembourg
- package dimensions: (l/w/h) 7/7/5 (inch)
- package weight: 1.5 lb

Goal B1

- to: Tunis
- package dimensions: (l/w/h) 40/10/10 (inch)
- package weight: 30 lb

Goal B2

- to: Bristol
- package dimensions: (l/w/h) 40/24/10 (inch)
- package weight: 30 lb