

Exercises for the book

Semantic Web Databases

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Solutions

Chapter 7 – Streams

1. a) **PREFIX** rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>
PREFIX sensor: <http://www.example.org/sensor#>
PREFIX lupos: <http://www.luposdate.org/>
SELECT DISTINCT lupos:average(?value) **AS** ?avg
STREAM INTERMEDIATERESULT DURATION 1 minute
WHERE { **WINDOW TYPE SLIDINGDURATION 1 hour**
 { ?sensor sensor:value ?value. } }
- b) **PREFIX** rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>
PREFIX sensor: <http://www.example.org/sensor#>
PREFIX lupos: <http://www.luposdate.org/>
SELECT DISTINCT lupos:average(?value) **AS** ?avg
STREAM INTERMEDIATERESULT DURATION 1 minute
WHERE { ?sensor rdf:type sensor:TemperatureSensor.
 WINDOW TYPE SLIDINGDURATION 1 hour { ?sensor sensor:value ?value. } }
- c) **PREFIX** rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>
PREFIX sensor: <http://www.example.org/sensor#>
PREFIX lupos: <http://www.luposdate.org/>
SELECT DISTINCT lupos:min(?valueA) **AS** ?minA
 lupos:max(?valueA) **AS** ?maxA
 lupos:min(?valueB) **AS** ?minB
 lupos:max(?valueB) **AS** ?maxB
 lupos:min(?valueC) **AS** ?minC
 lupos:max(?valueC) **AS** ?maxC
STREAM INTERMEDIATERESULT DURATION 1 minute
WHERE { **WINDOW TYPE SLIDINGDURATION 1 day**
 { sensor:sensorA sensor:value ?valueA.
 sensor:sensorB sensor:value ?valueB.
 sensor:sensorC sensor:value ?valueC. } }
- d) **PREFIX** rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>
PREFIX sensor: <http://www.example.org/sensor#>
PREFIX lupos: <http://www.luposdate.org/>
SELECT DISTINCT lupos:min(?valueA) **AS** ?minA
 lupos:max(?valueA) **AS** ?maxA
 lupos:min(?valueB) **AS** ?minB
 lupos:max(?valueB) **AS** ?maxB
 lupos:min(?valueC) **AS** ?minC
 lupos:max(?valueC) **AS** ?maxC
 lupos:average(?tempvalue) **AS** ?tempavg
 lupos:average(?value) **AS** ?avg
STREAM INTERMEDIATERESULT DURATION 1 minute
WHERE { **WINDOW TYPE SLIDINGDURATION 1 day**
 { sensor:sensorA sensor:value ?valueA.
 sensor:sensorB sensor:value ?valueB.
 sensor:sensorC sensor:value ?valueC. }
 ?tempsensor rdf:type sensor:TemperatureSensor.
 WINDOW TYPE SLIDINGDURATION 1 hour
 { ?tempsensor sensor:value ?tempvalue.
 ?sensor sensor:value ?value. } }