**LOD Queries and their Frequencies:**

|  |  |  |
| --- | --- | --- |
| **S.No.** | **Frequency** | **Description** |
| 1 | 66 | Find temperature observation for sensor ‘<http://knoesis.wright.edu/ssw/System\_4UT01>’;  insert into LogTable (OID,start\_time) (select L5.OID, clock\_timestamp() from "LODTriples" L1, "LODTriples" L2, "LODTriples" L3, "LODTriples" L4, "LODTriples" L5  where  L1.sub = '<http://knoesis.wright.edu/ssw/System\_4UT01>'  and L1.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#generatedObservation>'  and L2.sub = L1.obj  and L2.pred = '<http://www.w3.org/1999/02/22-rdf-syntax-ns#type>'  and L2.obj = '<http://knoesis.wright.edu/ssw/ont/weather.owl#TemperatureObservation>'  and L3.sub = L2.sub  and L3.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#result>'  and L4.obj = '<http://knoesis.wright.edu/ssw/ont/weather.owl#fahrenheit>'  and L4.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#uom>'  and L4.sub = L3.obj  and L5.sub = L4.sub  and L5.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#floatValue>'); |
| 2 | 70 | Find all rainfall observations.  insert into LogTable (OID,start\_time) (select L4. OID, clock\_timestamp() from "LODTriples" L1, "LODTriples" L2, "LODTriples" L3, "LODTriples" L4  where  L1.obj = '<http://knoesis.wright.edu/ssw/ont/weather.owl#RainfallObservation>'  and L1.pred = '<http://www.w3.org/1999/02/22-rdf-syntax-ns#type>'  and L2.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#result>'  and L2.sub = L1.sub  and L3.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#uom>'  and L3.obj = '<http://knoesis.wright.edu/ssw/ont/weather.owl#centimeters>'  and L3.sub = L2.obj  and L4.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#floatValue>'  and L4.sub = L3.sub); |
| 3 | 56 | Find humidity at location ‘<http://knoesis.wright.edu/ssw/point\_4UT01>’  insert into LogTable (OID,start\_time) (select L6.OID, clock\_timestamp() from "LODTriples" L1, "LODTriples" L2, "LODTriples" L3, "LODTriples" L4, "LODTriples" L5, "LODTriples" L6  where  L1.obj = '<http://knoesis.wright.edu/ssw/point\_4UT01>'  and L1.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#processLocation>'  and L2.sub = L1.sub  and L2.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#generatedObservation>'  and L3.sub = L2.obj  and L3.pred = '<http://www.w3.org/1999/02/22-rdf-syntax-ns#type>'  and L3.obj = '<http://knoesis.wright.edu/ssw/ont/weather.owl#RelativeHumidityObservation>'  and L4.sub = L3.sub  and L4.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#result>'  and L5.obj = '<http://knoesis.wright.edu/ssw/ont/weather.owl#percent>'  and L5.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#uom>'  and L5.sub = L4.obj  and L6.sub = L5.sub  and L6.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#floatValue>'); |
| 4 | 22 | Find rainfall observation where relative humidity is less than ‘"23.0"^^<http://www.w3.org/2001/XMLSchema#float>’  insert into LogTable (OID,start\_time) (select T4.OID, clock\_timestamp() from "LODTriples" T1, "LODTriples" T2, "LODTriples" T3, "LODTriples" T4, "LODTriples" T5  where  T1.obj = '<http://knoesis.wright.edu/ssw/ont/weather.owl#RainfallObservation>'  and T1.pred = '<http://www.w3.org/1999/02/22-rdf-syntax-ns#type>'  and T2.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#result>'  and T2.sub = T1.sub  and T3.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#uom>'  and T3.obj = '<http://knoesis.wright.edu/ssw/ont/weather.owl#centimeters>'  and T3.sub = T2.obj  and T4.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#floatValue>'  and T4.sub = T3.sub  and T5.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#generatedObservation>'  and T1.sub = T5.obj  and T5.sub IN  (select L2.sub from "LODTriples" L2, "LODTriples" L3, "LODTriples" L4, "LODTriples" L5, "LODTriples" L6  where  L2.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#generatedObservation>'  and L3.sub = L2.obj  and L3.pred = '<http://www.w3.org/1999/02/22-rdf-syntax-ns#type>'  and L3.obj = '<http://knoesis.wright.edu/ssw/ont/weather.owl#RelativeHumidityObservation>'  and L4.sub = L3.sub  and L4.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#result>'  and L5.obj = '<http://knoesis.wright.edu/ssw/ont/weather.owl#percent>'  and L5.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#uom>'  and L5.sub = L4.obj  and L6.sub = L5.sub  and L6.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#floatValue>'  and L6.obj < '"23.0"^^<http://www.w3.org/2001/XMLSchema#float>"')); |
| 5 | 76 | Find all sampling time for wind observation on date : 2004-08-10.  insert into LogTable (OID,start\_time) (select L2.OID, clock\_timestamp() from "LODTriples" L1, "LODTriples" L2, "LODTriples" L3  where  L1.obj = '<http://knoesis.wright.edu/ssw/ont/weather.owl#WindSpeedObservation>'  and L1.pred = '<http://www.w3.org/1999/02/22-rdf-syntax-ns#type>'  and L2.sub = L1.sub  and L2.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#samplingTime>'  and L3.sub = L2.obj  and L3.pred = '<http://www.w3.org/2006/time#inXSDDateTime>'  and L3.obj like '"2004-08-10%'); |
| 6 | 52 | Find wind observation at location “<http://knoesis.wright.edu/ssw/point\_4UT01>”.  insert into LogTable (OID,start\_time) (select L6.OID, clock\_timestamp() from "LODTriples" L1, "LODTriples" L2, "LODTriples" L3, "LODTriples" L4, "LODTriples" L5, "LODTriples" L6  where  L1.obj = '<http://knoesis.wright.edu/ssw/point\_4UT01>'  and L1.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#processLocation>'  and L2.sub = L1.sub  and L2.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#generatedObservation>'  and L3.sub = L2.obj  and L3.pred = '<http://www.w3.org/1999/02/22-rdf-syntax-ns#type>'  and L3.obj = '<http://knoesis.wright.edu/ssw/ont/weather.owl#WindSpeedObservation>'  and L4.sub = L3.sub  and L4.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#result>'  and L5.obj = '<http://knoesis.wright.edu/ssw/ont/weather.owl#milesPerHour>'  and L5.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#uom>'  and L5.sub = L4.obj  and L6.sub = L5.sub  and L6.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#floatValue>'); |
| 7 | 3 | Find average rainfall at place “xyz” on 2004-08-10  insert into LogTable (OID,start\_time) ( (select L4.OID, clock\_timestamp() from "LODTriples" L1, "LODTriples" L2, "LODTriples" L3, "LODTriples" L4, "LODTriples" L5, "LODTriples" L6  where  L1.obj = '<http://knoesis.wright.edu/ssw/ont/weather.owl#RainfallObservation>'  and L1.pred = '<http://www.w3.org/1999/02/22-rdf-syntax-ns#type>'  and L2.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#result>'  and L2.sub = L1.sub  and L3.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#uom>'  and L3.obj = '<http://knoesis.wright.edu/ssw/ont/weather.owl#centimeters>'  and L3.sub = L2.obj  and L4.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#floatValue>'  and L4.sub = L3.sub  and L6.obj like '"2004-08-10%'  and L6.pred = '<http://www.w3.org/2006/time#inXSDDateTime>'  and L5.obj = L6.sub  and L5.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#samplingTime>'  and L5.sub = L1.sub)  union  (select T4.OID, clock\_timestamp() from "LODTriples" T1, "LODTriples" T2, "LODTriples" T3, "LODTriples" T4, "LODTriples" T5, "LODTriples" T6  where  T1.obj = '<http://knoesis.wright.edu/ssw/ont/weather.owl#RainfallObservation>'  and T1.pred = '<http://www.w3.org/1999/02/22-rdf-syntax-ns#type>'  and T2.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#result>'  and T2.sub = T1.sub  and T3.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#uom>'  and T3.obj = '<http://knoesis.wright.edu/ssw/ont/weather.owl#centimeters>'  and T3.sub = T2.obj  and T4.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#floatValue>'  and T4.sub = T3.sub  and T6.obj like '"2004-08-11%'  and T6.pred = '<http://www.w3.org/2006/time#inXSDDateTime>'  and T5.obj = T6.sub  and T5.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#samplingTime>'  and T5.sub = T1.sub)); |
| 8 | 90 | insert into LogTable (OID,start\_time) (select distinct L1.OID, clock\_timestamp() from "LODTriples" L1, "LODTriples" L2, "LODTriples" L3 where L1.pred='<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#hasLocation>' and L1.sub='<http://knoesis.wright.edu/ssw/LocatedNearRel4UT01>' and L2.pred='<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#floatValue>' and L2.obj='"6.0"^^<http://www.w3.org/2001/XMLSchema#float>' and L3.pred='<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#uom>' and L3.obj='<http://knoesis.wright.edu/ssw/ont/weather.owl#fahrenheit>' and L2.sub=L3.sub);  Total query runtime: 10.5 secs  2 rows retrieved. |
| 9 | 40 | insert into LogTable (OID,start\_time) (select L1.OID, clock\_timestamp() from "LODTriples" L1, "LODTriples" L2, "LODTriples" L3 where L1.pred='<http://www.w3.org/1999/02/22-rdf-syntax-ns#type>' and L1.obj='<http://knoesis.wright.edu/ssw/ont/weather.owl#RelativeHumidityObservation>' and L2.pred='<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#floatValue>' and L2.obj='"25.0"^^<http://www.w3.org/2001/XMLSchema#float>' and L3.pred='<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#result>' and L2.sub=L3.obj and L1.sub=L3.sub);  Total query runtime: 6.3 secs  146 rows retrieved |
| 10 | 64 | Find wind gust at place “xyz”  insert into LogTable (OID,start\_time) (select L6.OID, clock\_timestamp() from "LODTriples" L1, "LODTriples" L2, "LODTriples" L3, "LODTriples" L4, "LODTriples" L5, "LODTriples" L6  where  L1.obj = '<http://knoesis.wright.edu/ssw/point\_4UT01>'  and L1.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#processLocation>'  and L2.sub = L1.sub  and L2.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#generatedObservation>'  and L3.sub = L2.obj  and L3.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#observedProperty>'  and L3.obj = '<http://knoesis.wright.edu/ssw/ont/weather.owl#\_WindGust>'  and L4.sub = L3.sub  and L4.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#result>'  and L5.obj = '<http://knoesis.wright.edu/ssw/ont/weather.owl#milesPerHour>'  and L5.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#uom>'  and L5.sub = L4.obj  and L6.sub = L5.sub  and L6.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#floatValue>'); |
| 11 | 24 | Find dew point at location “xyz”  insert into LogTable (OID,start\_time) (select L6.OID, clock\_timestamp() from "LODTriples" L1, "LODTriples" L2, "LODTriples" L3, "LODTriples" L4, "LODTriples" L5, "LODTriples" L6  where  L1.obj = '<http://knoesis.wright.edu/ssw/point\_4UT01>'  and L1.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#processLocation>'  and L2.sub = L1.sub  and L2.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#generatedObservation>'  and L3.sub = L2.obj  and L3.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#observedProperty>'  and L3.obj = '<http://knoesis.wright.edu/ssw/ont/weather.owl#\_DewPoint>'  and L4.sub = L3.sub  and L4.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#result>'  and L5.obj = '<http://knoesis.wright.edu/ssw/ont/weather.owl#fahrenheit>'  and L5.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#uom>'  and L5.sub = L4.obj  and L6.sub = L5.sub  and L6.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#floatValue>'); |
| 12 | 47 | insert into LogTable (OID,start\_time) (Select L1.OID, clock\_timestamp() from "LODTriples" L1, "LODTriples" L2, "LODTriples" L3, "LODTriples" L4 where L1.pred='<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#processLocation>' and L2.pred='<http://www.w3.org/2003/01/geo/wgs84\_pos#alt>' and L3.pred='<http://www.w3.org/2003/01/geo/wgs84\_pos#lat>' and L4.pred='<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#ID>' and L4.obj='"A07"' and L1.obj=L2.sub and L1.obj=L3.sub and L1.sub=L4.sub);  Total query runtime: 4.6 secs  1 row retrieved |
| 13 | 30 | insert into LogTable (OID,start\_time) (select L2.OID, clock\_timestamp() from "LODTriples" L1, "LODTriples" L2  where  L1.pred='<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#generatedObservation>'  and L1.obj='<http://knoesis.wright.edu/ssw/Observation\_Precipitation\_4UT01\_2004\_8\_11\_6\_05\_00>'  and L2.pred='<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#ID>'  and L1.sub=L2.sub);  Total query runtime: 724 msec  1 row retrieved. |
| 14 | 68 | Find Id and location of a sensor  insert into LogTable (OID,start\_time) (select L1.OID, clock\_timestamp() from "LODTriples" L1, "LODTriples" L2  where L1.sub = '<http://knoesis.wright.edu/ssw/System\_4UT01>'  and L1.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#processLocation>'  and L2.sub = L1.sub  and L2.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#ID>'); |
| 15 | 60 | Find lat/alt information for a sensor.  insert into LogTable (OID,start\_time) (select L1.OID, clock\_timestamp() from "LODTriples" L1, "LODTriples" L2, "LODTriples" L3  where L1.sub = '<http://knoesis.wright.edu/ssw/System\_4UT01>'  and L1.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#processLocation>'  and L2.sub = L1.obj  and L2.pred = '<http://www.w3.org/2003/01/geo/wgs84\_pos#alt>'  and L3.sub = L1.obj  and L3.pred = '<http://www.w3.org/2003/01/geo/wgs84\_pos#lat>'); |
| 16 | 40 | Find sensors at located near “xyz”.  insert into LogTable (OID,start\_time) (select L2.OID, clock\_timestamp() from "LODTriples" L1, "LODTriples" L2  where L1.obj = '<http://knoesis.wright.edu/ssw/LocatedNearRel3CLO3>'  and L1.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#hasLocatedNearRel>'  and L2.sub = L1.sub  and L2.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#ID>'); |
| 17 | 18 | List sensors that generate wind observation  insert into LogTable (OID,start\_time) (select L1.OID, clock\_timestamp() from "LODTriples" L1  where L1.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#parameter>'  and L1.obj = '<http://knoesis.wright.edu/ssw/ont/weather.owl#\_WindSpeed>'); |
| 18 | 38 | Find geoname, point of a “System\_KILN”  insert into LogTable (OID,start\_time) (select L1.OID, clock\_timestamp() from "LODTriples" L1, "LODTriples" L2  where L1.sub = '<http://knoesis.wright.edu/ssw/System\_KILN>'  and L1.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#hasLocatedNearRel>'  and L2.sub = L1.sub  and L2.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#processLocation>'); |
| 19 | 36 | Find sensors located near “xyz” with freezing temperature  insert into LogTable (OID,start\_time) (select L1.OID, clock\_timestamp() from "LODTriples" L1, "LODTriples" L2, "LODTriples" L3, "LODTriples" L4, "LODTriples" L5, "LODTriples" L6  where  L1.obj = '<http://knoesis.wright.edu/ssw/LocatedNearRel4UT01>'  and L1.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#hasLocatedNearRel>'  and L2.sub = L1.sub  and L2.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#generatedObservation>'  and L3.sub = L2.obj  and L3.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#observedProperty>'  and L3.obj = '<http://knoesis.wright.edu/ssw/ont/weather.owl#\_AirTemperature>'  and L4.sub = L3.sub  and L4.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#result>'  and L5.obj = '<http://knoesis.wright.edu/ssw/ont/weather.owl#fahrenheit>'  and L5.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#uom>'  and L5.sub = L4.obj  and L6.sub = L5.sub  and L6.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#floatValue>'  and L6.obj < '"32.0"^^<http://www.w3.org/2001/XMLSchema#float>'); |
| 20 | 40 | Find sensors at location at and located near “xyz”  insert into LogTable (OID,start\_time) (select L1.OID, clock\_timestamp() from "LODTriples" L1  where L1.obj = '<http://knoesis.wright.edu/ssw/LocatedNearRelA04>'  and L1.pred = '<http://knoesis.wright.edu/ssw/ont/sensor-observation.owl#hasLocatedNearRel>'); |