**Sparql Queries**

1. **How much** (instead of a simple yes/no) do days of precipitation correlate to drug overdosing in Connecticut?

<!-- avg temp per day vs deaths in a day -->

PREFIX conw: <http://www.semanticweb.org/davidcaplin/ontologies/2020/2/Connecticut-Weather#>

PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>

PREFIX ds: <https://data.ct.gov/resource/deaths/>

SELECT ?date (avg((?maxtemp + ?mintemp) / 2) as ?avgtemp)  (count(?d) as ?deaths)

WHERE {

{

SELECT (avg((?y + ?z) / 2) AS ?avgacrossct)

WHERE {

?x conw:TMAX ?y .

?x conw:TMIN ?z .

FILTER ( ?y >= "-100"^^xsd:float

&& ?z >= "-100"^^xsd:float)

}

}

   ?d ds:date ?date .

   ?x xsd:date ?date .

   ?x conw:measures ?y .

   ?y conw:TMAX ?maxtemp .

   ?y conw:TMIN ?mintemp .

   FILTER(((?maxtemp + ?mintemp) / 2) < ?avgacrossct)

}

GROUP BY ?date

HAVING (count(?d) > 2)

ORDER BY ?date

1. **How much** (instead of a simple yes/no) do increased unemployment rates correlate with drug overdosing in Connecticut? (In terms of a ratio of the average number of overdoses per month over the entire data set versus the average number of drug doses per month when unemployment rates are increased for a certain city/Connecticut as a whole)

<!-- avg unemployment rate per month vs deaths per month -->

PREFIX ds: <https://data.ct.gov/resource/deaths/>

PREFIX rates: <https://www1.ctdol.state.ct.us/lmi/laus/>

SELECT ?y ?m ?avgrate ?deaths

WHERE {

{

      SELECT ?y ?m (count(?d) as ?deaths)

      WHERE {

        ?d ds:date ?date

        BIND(month(?date) as ?m)

        BIND(year(?date) as ?y)

      }

      GROUP BY ?y ?m

  }

  {

    SELECT ?y ?m (avg(?rate) as ?avgrate)

    WHERE {

    ?x rates:date ?date .

    ?x rates:UnemploymentRate ?rate

BIND(month(?date) as ?m)

    BIND(year(?date) as ?y)

    }

    GROUP BY ?y ?m

  }

}

GROUP BY ?y ?m ?avgrate ?deaths

ORDER BY ?y ?m