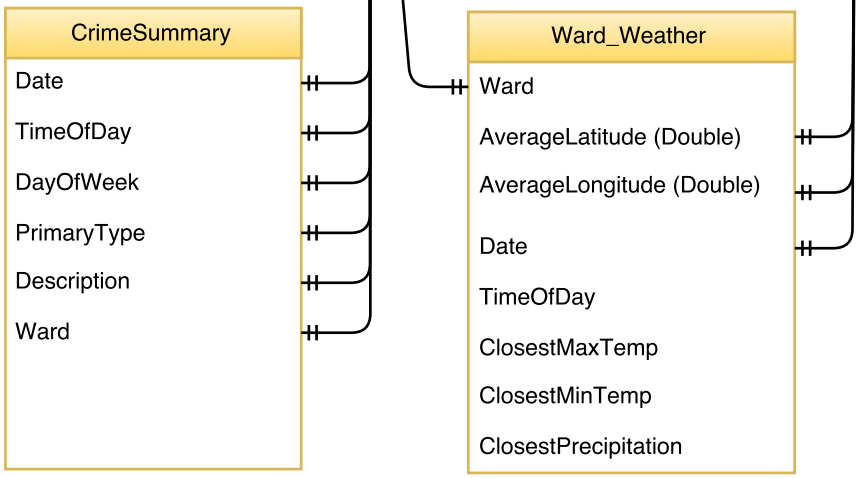
Source Data

ETL



Finding the closest weather data

We can use trigonometry formulas to determine the circular distance between two Lat/Long coordinates. I'll find the closest non-null weather data for a particular crime, with a maximum upper bound so that we don't take weather data from somewhere unreasonably far away.
Example:

```
// Closest within radius of 25 Miles

SELECT MaxTemp,
 ( 3959 * acos( cos( radians(c.Latitude) ) * cos(
radians( w.Latitude ) )
  * cos( radians( w.Longitude ) - radians(c.Longitude) )
+ sin( radians(c.Latitude) )
  * sin( radians( w.Latitude ) ) ) ) AS distance
FROM Weather w
JOIN Chi_Crime c on w.Date = c.Date
HAVING distance < 25
ORDER BY distance LIMIT 1;
```

Analysis

to be visualized in Tableau