Problem Statement
The aim is to format emergency call information in order to analyse relations between records of various crimes, so that a model can make crime trend predictions.

Introduction
9-1-1 call information records how often crimes occur in specific areas.
This information can be used to create a model which can analyse trends in order to accurately predict number of crimes that could occur in a specific time period.
The model can analyse differences between predicted and actual crime trends which could help pinpoint underlying causes.

Approach
Almost 2 million total instances for both years combined
The NN consists of one input layer with 5 input nodes, one hidden layer with 5 nodes and one output layer with 2 nodes
The activation function used is a Sigmoid function

<table>
<thead>
<tr>
<th>Julian Day</th>
<th>Type Description</th>
<th>Year</th>
<th>Call Receipt</th>
<th>Call Closure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Warrant</td>
<td>2006</td>
<td>2006-01-01 00:00:37</td>
<td>2006-01-01 00:37</td>
</tr>
</tbody>
</table>

Results

Future Work
A GUI could act as a dashboard and provide easier access to predictions as well as historic data similar to crime under analysis.
Treating the data as a Time series and using a Recurrent Neural Network on the data, might lead to better results.

References
Paper 1 - Artificial Neural Networks and Crime Mapping by Andreas M. Olligschlaeger
Paper 2 - Crime Forecasting using Data Mining Techniques by Chung-Hsien Yu, Max W. Ward, Melissa Morabito and Wei Ding