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| NSW Traffic Penalty Data Analysis Visualisation Tool Executive Summary |
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# Abstract

This report reviews the graphical functionality of the New South Wales (NSW) Traffic Penalty Data by analyzing the crash data over 12 months. Expressly, the graphs have been set between January 2013 and January 2014 and utilizing workbooks, bar graphs and line graphs to visualize the data. Moreover, this information can be accessed and used for user and purpose-driven data to indicate a clear trend over a specific period through the Functioning GUI. Furthermore, this document includes screenshots of the outputs resulting from the visualization tool GUI.

# Introduction

The purpose of this report is to present the results of the Data Analysis Tool GUI implemented in Part B. The charts demonstrate the functionality of the NSW Traffic Penalty Database between January 2013 and January 2014. This document will include and analyze each function and type of report. These include 'All Offences', 'All Offences Involving Radar/Camera', 'Distribution of all Offence Codes', and 'Monthly Trend of all/single Offences'. A fifth analysis is also included that limits the data to mobile phone usage, which can apply to any of the other functions, their data groups and graphical view.

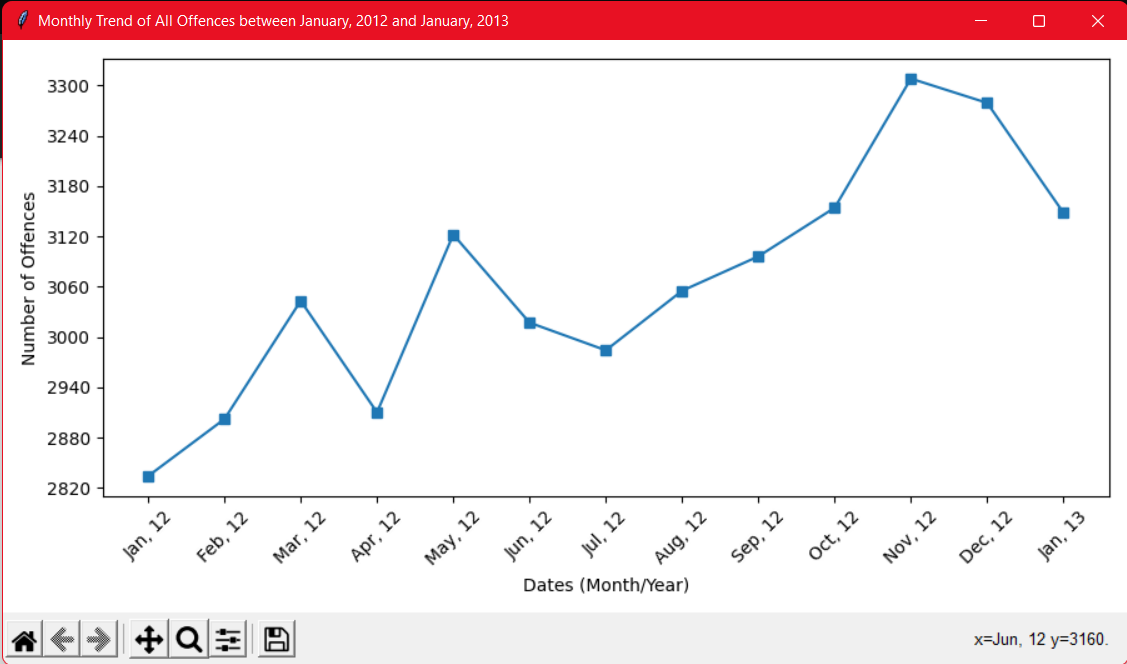
# Analysis

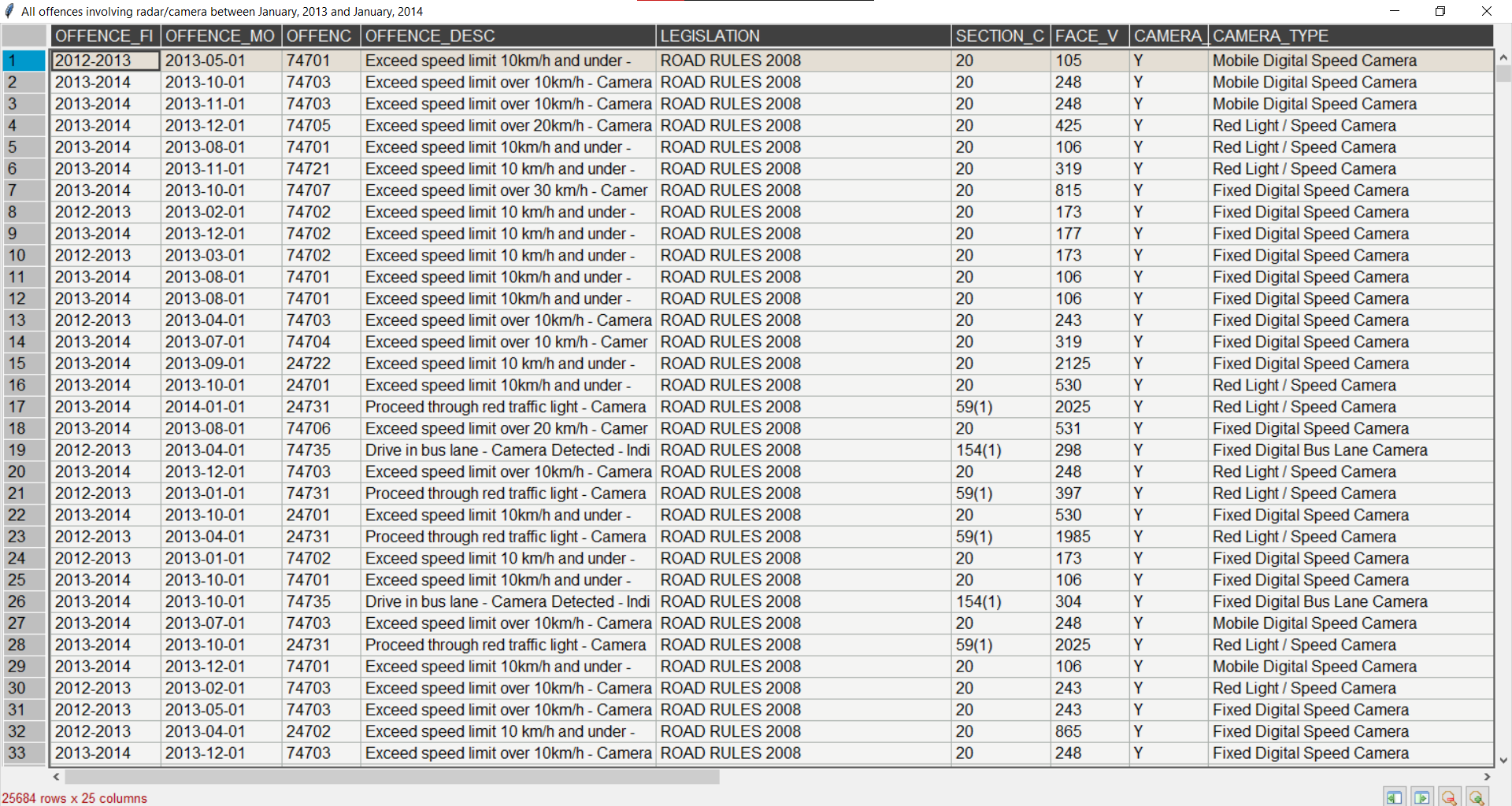
## Analysis 1 <Distribution of all Offence Codes Between January 2013 and January 2014>

Figure one displays offence codes' distribution and quantity between January 2013 and January 2014. The bar chart displays a simple X and Y Axis. It utilizes the Tkinter package to display the graphical information. As there were nearly 7000 different offence types it was not feasible to include all offence codes in the chart, therefore we have filtered the results to only including those codes that contribute at least 0.5% results to the total in the selected period. Chart, bar chart, histogram

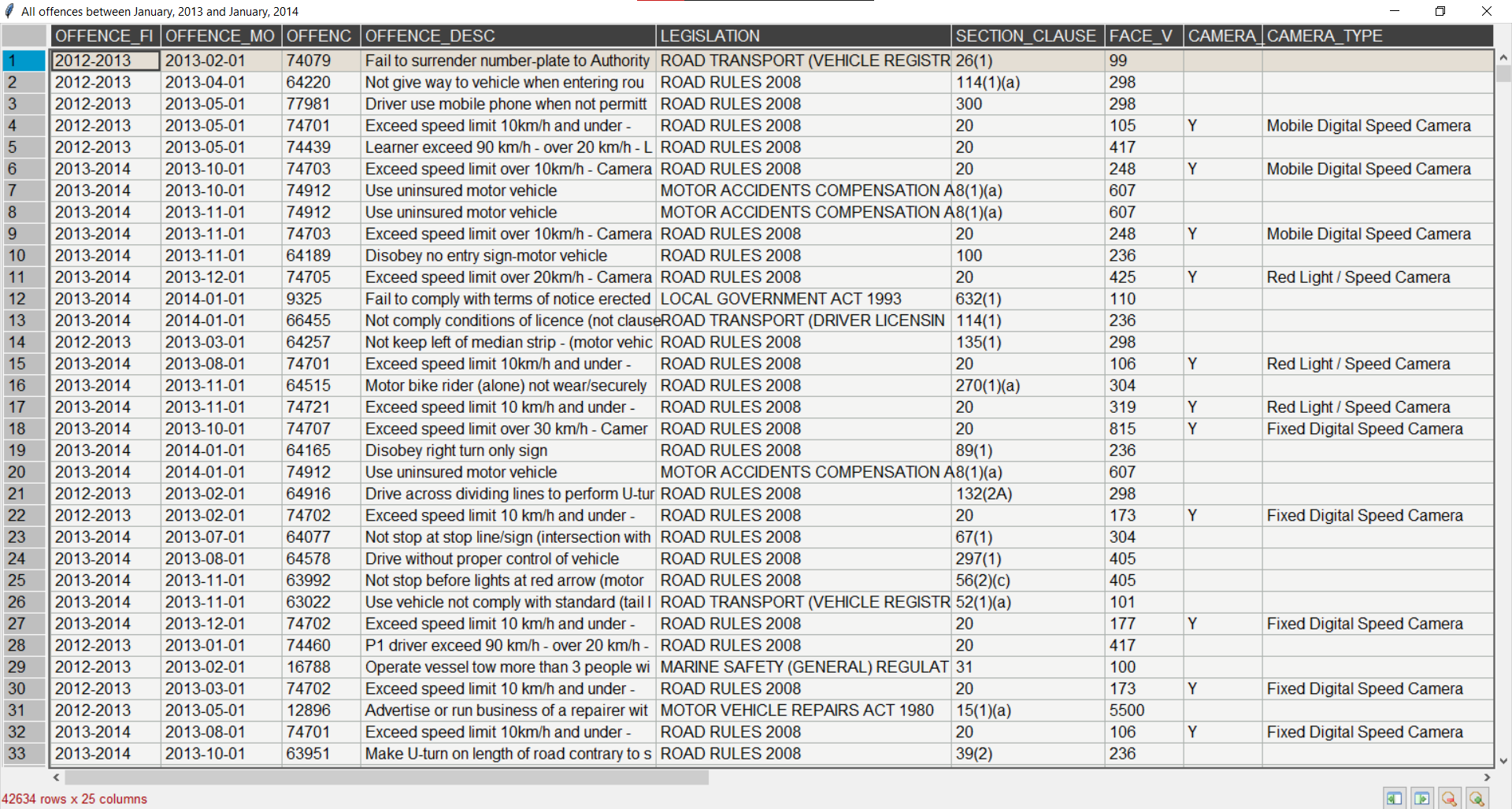
Description automatically generated  
(Figure 1)

Analysis 2 <Monthly Trend of all Offences Between January 2013 and January 2014>

Figure 2 displays a line chart analyzing the monthly trend of all offences between January 2013 and January 2014. This chart plots on a Simple X and Y Axis utilizing Matplotlib and displays within a Tkinter GUI. The Y axis for this reporting method evaluates quantity while the X axis is Labelled using months/dates.   
(Figure 2)

Analysis 3 <All Offences Involving Radar/Camera Between January 2013 and January 2014> Figure 3 Displays All Offences Involving Radar/Camera between January 2013 and January 2014. The graphical interface has utilized Tkinter and PandasTable to display this active report type via a table. The table draws the information straight from the function results to express it.   
(Figure 3)

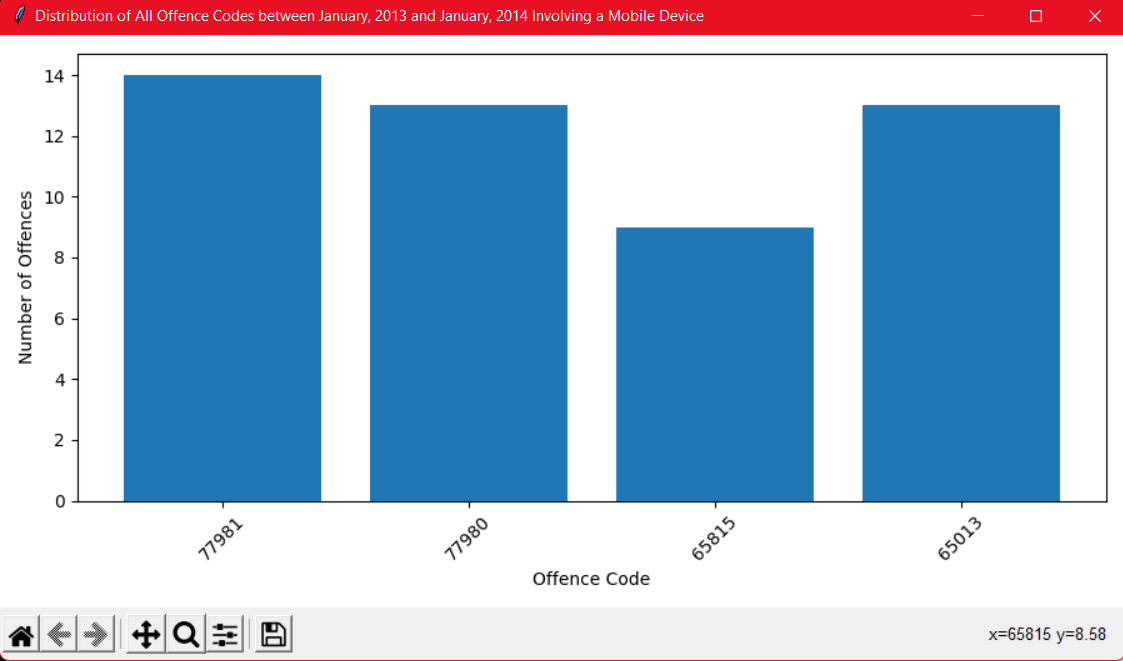
Analysis 4 <All Offences Between January 2013 and January 2014>

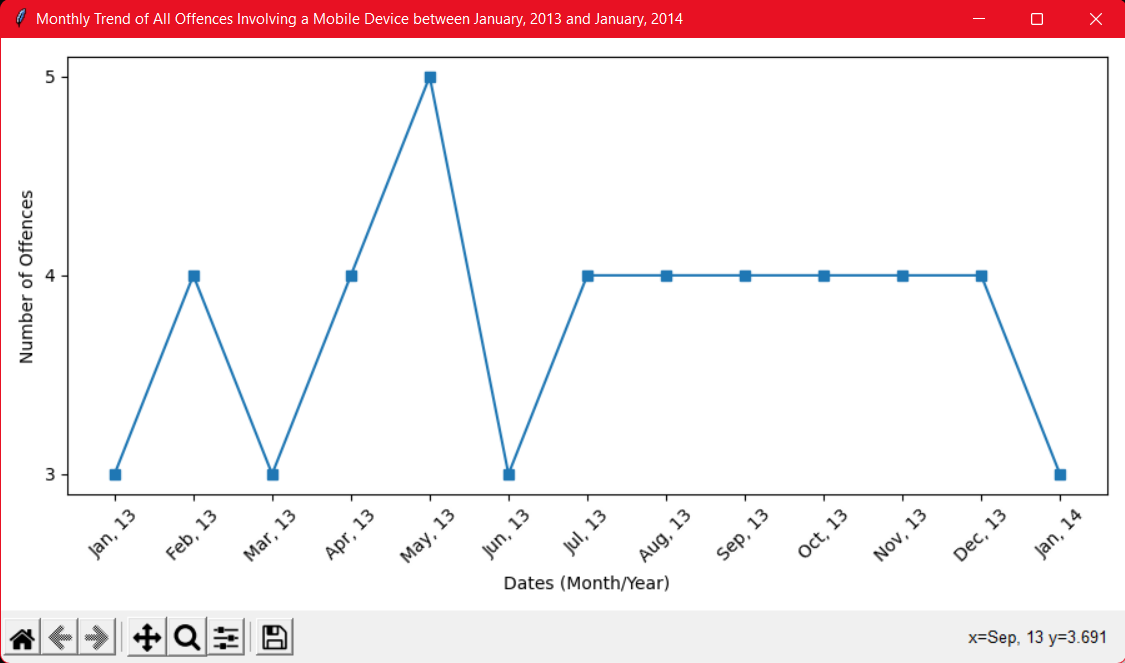
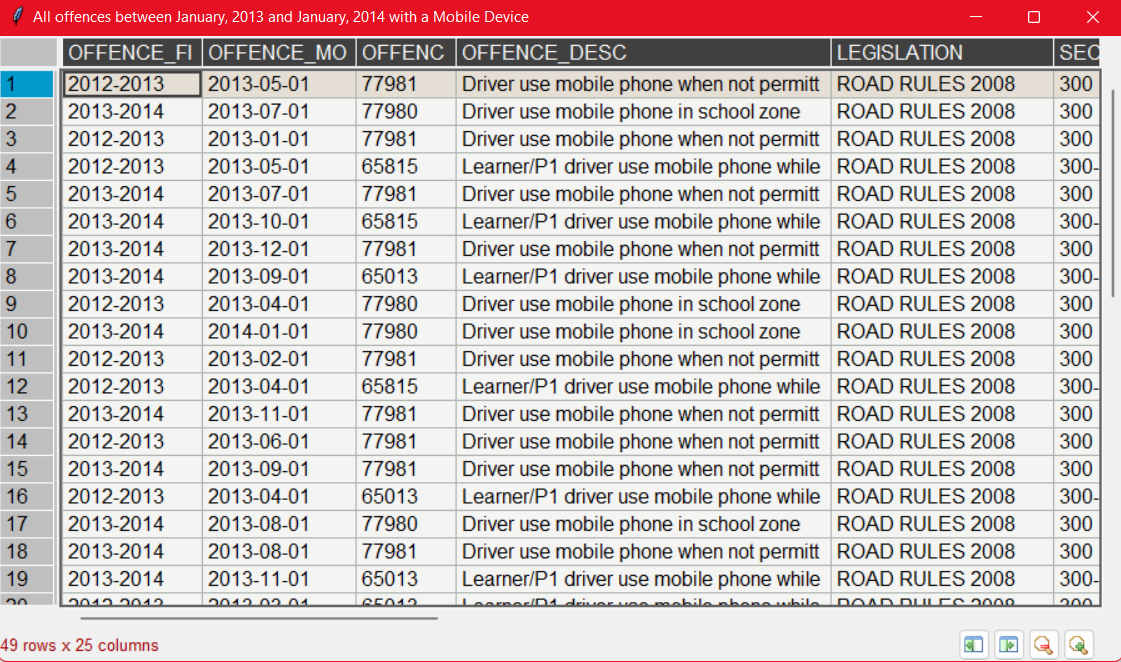
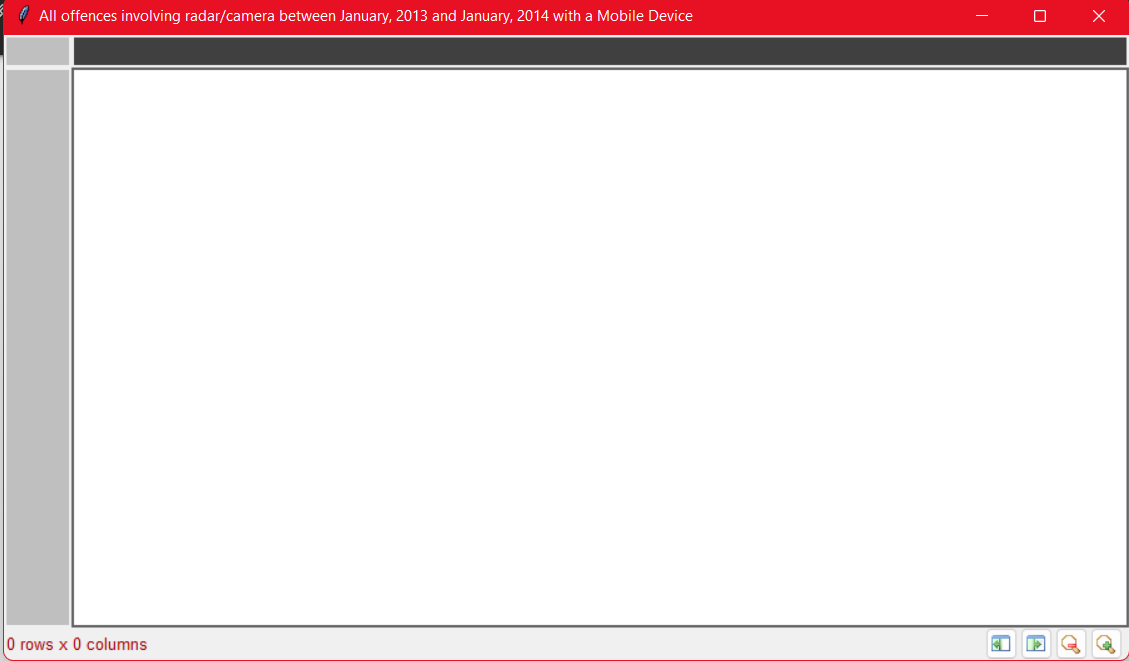
Figure 4 displays all offences between January 2013 and January 2014. The graphical interface uses Tkinter and PandasTable to display this active report type as an interactive table. This table draws information straight from the results of this function.

(Figure 4)

## Analysis 5 <Data Limited to Mobile Phone Usage >

Figures 5.1, 5.2, 5.3, and 5.4 show results for each function limiting data to only include mobile phone involvement. This functional implementation only impacts the data, not the GUI's view of the chart, so the chart remains the same. This condition is seen most clearly in Figure 5.4, as no Mobile Phone Usage can occur within the 'All Offences Involving Radar/Camera Between January 2013 and January 2014' report. This reporting method is the custom implementation required within the Assignment.

(Figure 5.1)

(Figure 5.2)(Figure 5.3)(Figure 5.4)