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| <NSW TRAFFTIC PENTALTY DATA > Executive Summary |
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# Abstract

This project was developed in response to NSW traffic penalty data. The advantage of this new type of software is that it allows users to choose a specific period to display detailed information, helps users automatically filter out information that is not useful, and retains sufficient information. And this software also satisfies the user’s query of visual information because the human brain processes visual information much more accessible than written communication, so users can easily compare the relationship between data and data by viewing the diagram. This report will explain the five query methods provided by the software in detail to the user and will attach the displayed results for the user’s reference.

# Introduction

Group members develop a software project with NSW traffic penalty data as the research object. This software project satisfies the query of five types of questions. These five questions are queries for all information on traffic penalty in the selected period, for a user-selected period, draw the distribution of cases in each offence code diagram, display all instances that have been captured by radar or camera, automatically graph trends in traffic penalty cases due to mobile phone using and summarise statistics for various types of drunk driving from 2011 to 2017. This report aims to explain the above five types of questions in detail one by one, simulate the period selected by the user is 12 months, and display the results of the different query types.

Analysis 1 < **Information of all penalty cases during selected 12-month period**>

The following operations will simulate the user using the software：

The start time is set as January 1, 2012, and the end time is set as January 1, 2013, because the period simulated for this report is 12 months. When the user finishes entering the start time and end time, the software will automatically display all traffic penalty information during this period, with a total of 264604 rows and 25 columns. However, traffic penalty information will not be sorted chronologically.

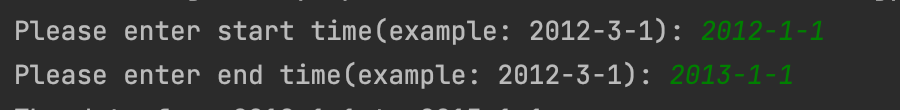
Graphical user interface, text

Description automatically generated with medium confidence

Analysis 2 < **The distribution of cases in each offence code during the selected 12-month period**>

The following operations will simulate the user using the software:

When the user inputs January 1, 2012, as the start time and January 1, 2013, as the end time, the software will automatically generate all traffic ticket codes and the total number of each ticket code during this period and draw a line graph. The x-axis is the office code, and the y-axis is the total. This diagram shows the distribution of cases within each offence code over the selected period.

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**A picture containing chart

Description automatically generated**

# **Analysis 3 <** **All cases captured by radar or camera based on offence description>**

The following operations will simulate the user using the software:

The start date of the simulated user input is January 1, 2012, and the end date is January 1, 2013. The software will automatically display all traffic violation cases captured by radar or camera within the selected date, with a total of 19540 rows and 25 columns.

Graphical user interface, text

Description automatically generated

Analysis 4 < **Analysing the cases caused by mobile phone usage during a selected 12-month period**>

When the user wants to check the trend of traffic violation cases caused by mobile phone use in recent years, the software will automatically count the number of traffic penalties generated by mobile phone use each year, then compare and create a line graph. The following diagram shows the trend of cases caused by drivers using mobile phones from 2011 to 2018, with the x-axis representing the year and the y-axis representing the numbers. From 2011 to 2015, the number symbolises a rising trend, indicating that people did not pay much attention to the behaviour of looking at their mobile phones while driving. From 2015 to 2018, the number generally showed a downward trend, indicating that people began to pay more attention to this behaviour.

Table

Description automatically generated with low confidence

Chart, line chart

Description automatically generated

# **Analysis 5 <** Summarizes all types of data from 2011-2017 **>**

# The software summarises all types of data from 2011-2017. First, the software can display all data types from offence\_finyear to total\_value, including float, integer and object, and the memory usage is 269.9MB. In addition, since the data from SPEED\_IND to BICYCLE\_TOY\_ETC\_IND is all replaced by ‘y’, it was read separately. The data types are all 'object’, and the memory usage is 88.9MB.

Text

Description automatically generated

Text

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