# Traffic Penalty Data Analysis Software

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# INTRODUCTION

## NSW TRAFFIC PENALTY DATA ANALYSIS SOFTWARE

The NSW Traffic Penalty Data Analysis Software (TPDAS) is a software for analysing traffic penalty datasets. The NSW government, especially road and transport authorities, could use TPDAS to better understand the various traffic penalties and their trends over a specific time-period.

TPDAS can support millions of data analysis. Apart from the default dataset, users can choose datasets with the same data format to be loaded by TPDAS. TPDAS provides four main features which include case distributions by offense code, cases captured by radar or camera, penalty trends of mobile phone usage, and comparation of different analysis results.

TPDAS is developed under the GNU General Public License, anyone can freely use and distribute this software.

## USER INTERFACE

Welcome to the TPDAS user interface. This part introduces the basic and advanced operations of the software.

TPDAS can be run in a Windows operating System, recommended as below:

- Windows 11
- Windows 10

The software zip file can be downloaded from the GitHub url: https://github.com/lambertbozhao/7810ICT_Assignment_Group43.

You can unzip the file into your disks and double click callMain.exe to start TPDAS.

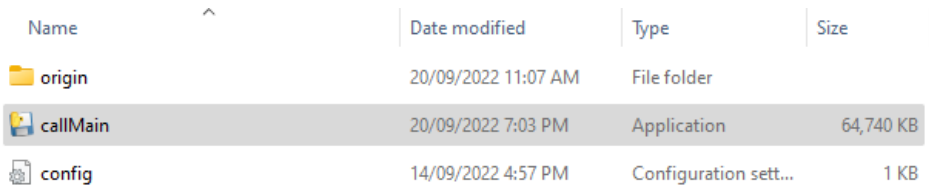


**Figure 1: Unzip TPDAS**

### HOME

When TPDAS starts, the software will load the default dataset and show the time-period in the home screen.

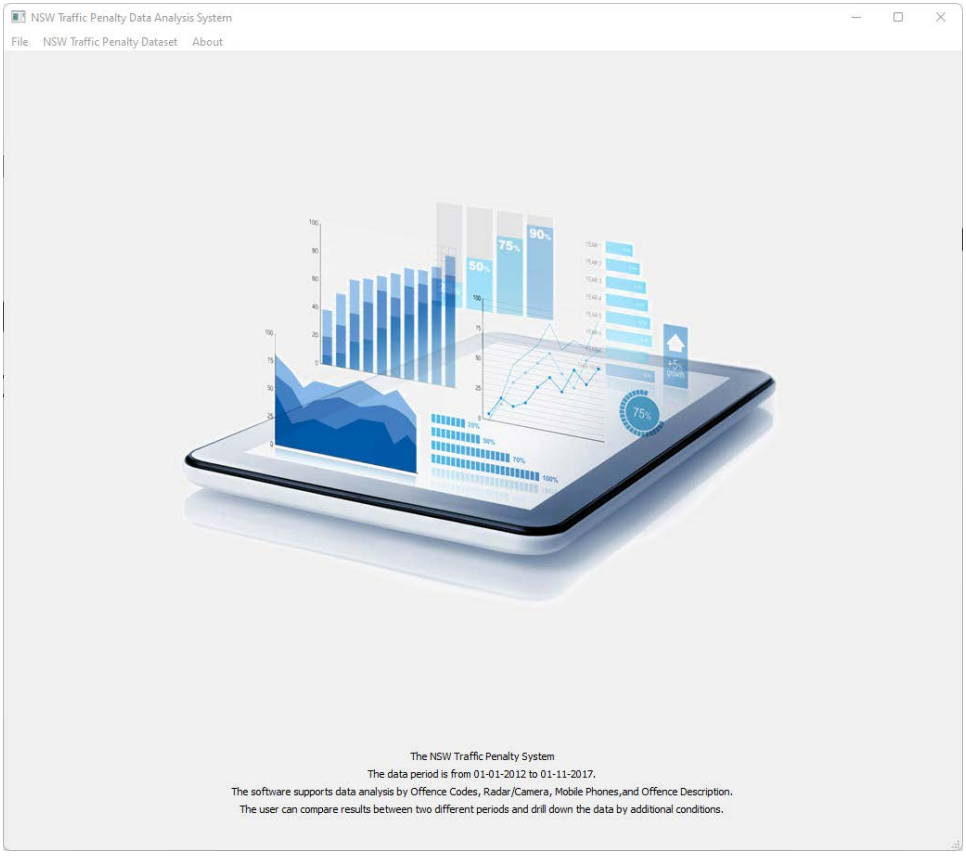


**Figure 2: Home**

Users can choose their own datasets to analyse by clicking the "File - Load New Database" menu. The dataset format must be the same as the data format provided by the NSW government. The latest traffic penalty datasets can be found from NSW Revenue Office. When the new dataset has been loaded successfully, the program will show the time period based on the dataset. In addition, users can also revert to the original dataset by clicking the "File – Revert" menu.

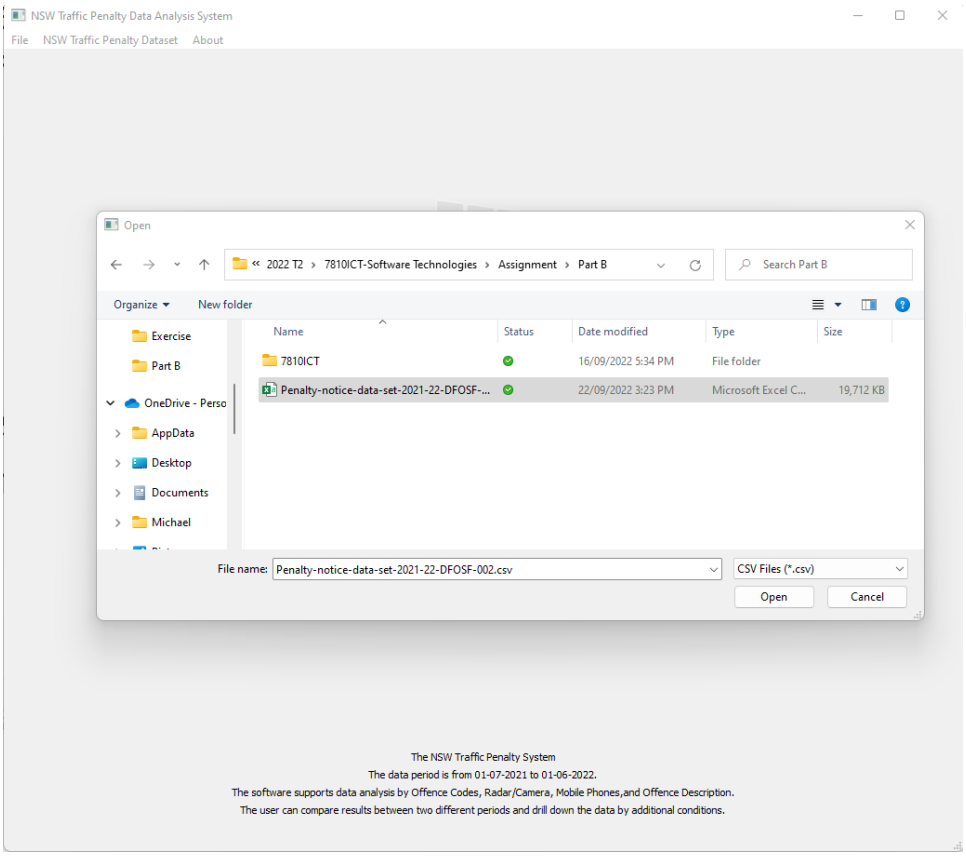


**Figure 2: Load New Database**

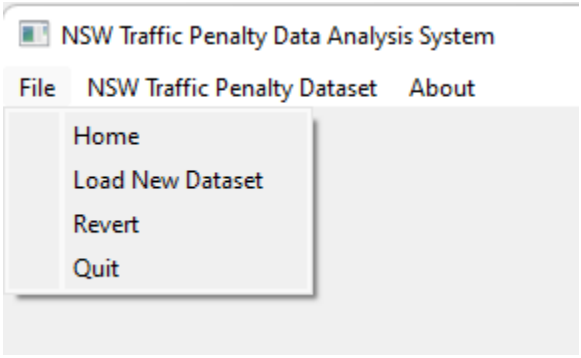


**Figure 4: File Menu**

## DATA ANALYSIS

The main feature is accessed through the "NSW Traffic Penalty Dataset – Data Analysis" menu. The screen is divided into three parts which are basic data analysis, advanced data analysis and status bar. For basic data analysis, users can input start date and end date. The records during this period will consequently populate the table. Users can view all columns for each record. The status bar will show how many records have been retrieved and how long it takes to search these data. Apart from the basic data analysis, the software also supports advanced data analysis features. Users can analyse the data and compare results by offence code, radar or camera, mobile phone.

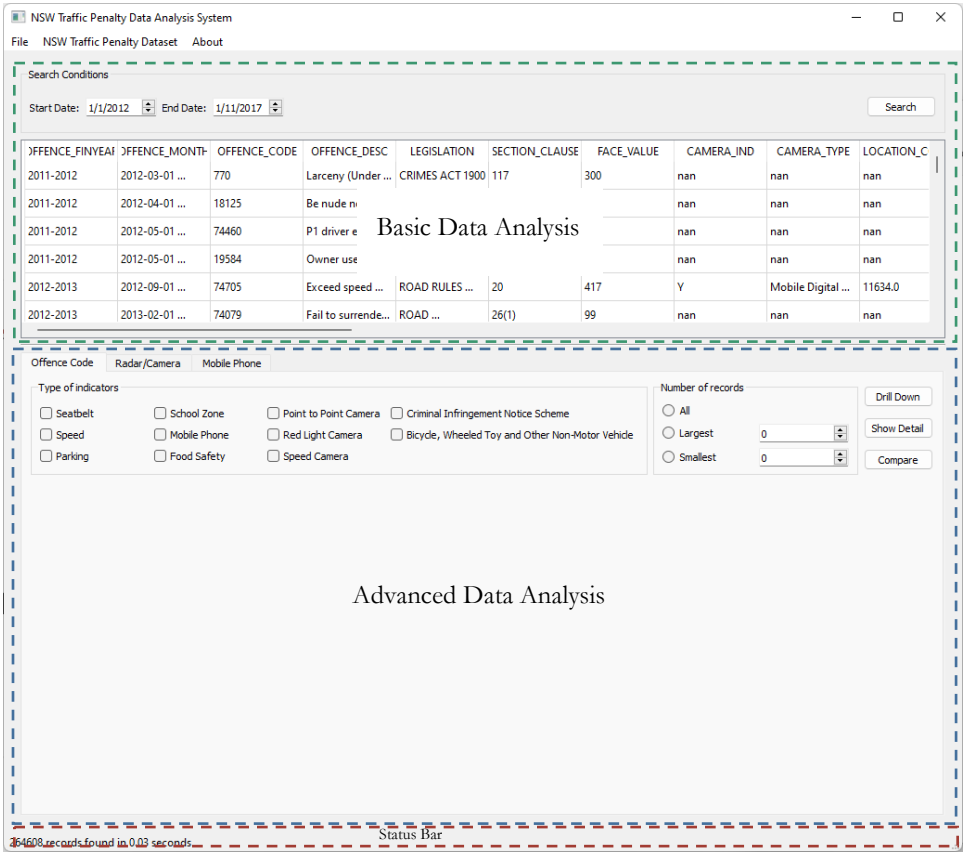


**Figure 3: Data Analysis Feature**

For advanced data analysis features, users could click the "Drill Down" button to shift from the basic data to more detailed information. They could also choose some additional conditions, such as type of indicators, keywords, and number of records etc., to filter the data for particular objectives. For each

search, the status bar will show the number of records found by the software and how many seconds it spent.

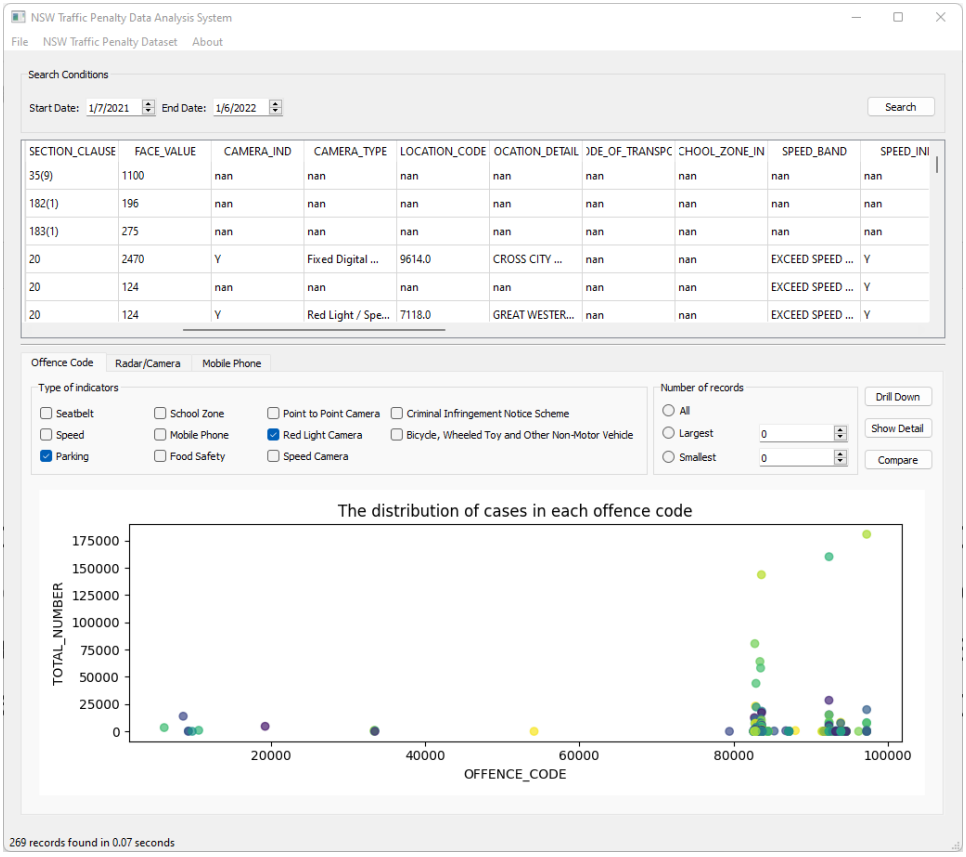


**Figure 5: Offence Code Feature**

For even more details, users can press the “Show Detail” button to see detailed information of the diagram. When the mouse moves into the point in the diagram, the key information will be shown. In the meanwhile, users can also easily zoom in, zoom out, and download diagrams in the “Show Detail” screen.

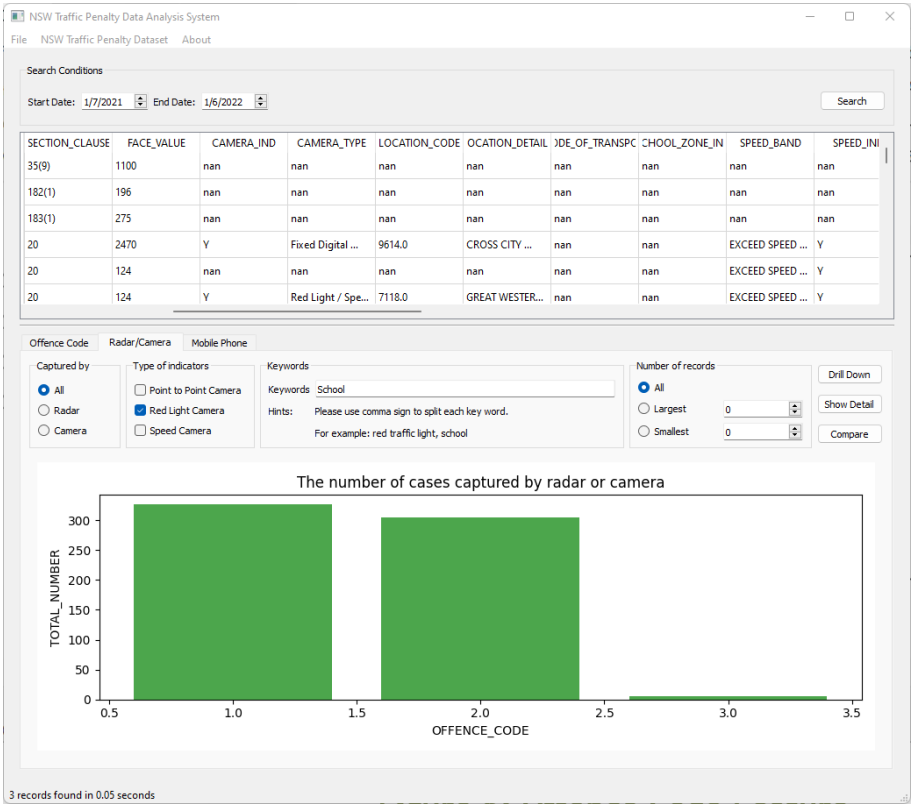


**Figure 6: Radar/Camera Feature**

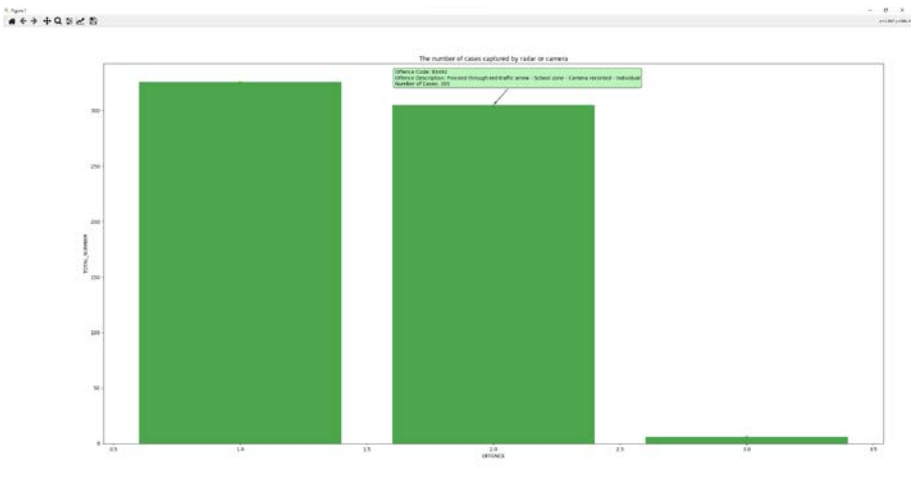

**Figure 7: Show Detail Feature**

In addition, the software also provides a flexible comparation feature. Users could choose any two diagrams to compare. For example, users may compare the total numbers of offense codes which are related to mobile phone usage and the trends of mobile phone usage. User can tick the “Mobile Phone” indicator in the “Offence Code” feature and press the “Compare” button. When the first diagram has been chosen, the “Compare” button text will be changed to “Compare to”. After that, user can go to the “Mobile Phone” feature to analyse the data and click the “Compare to” button to compare these two diagrams together. Similarly, the diagrams can be easily downloaded by the users. Users can flexibly use and combine these features in order to achieve their own objectives of data analysis.

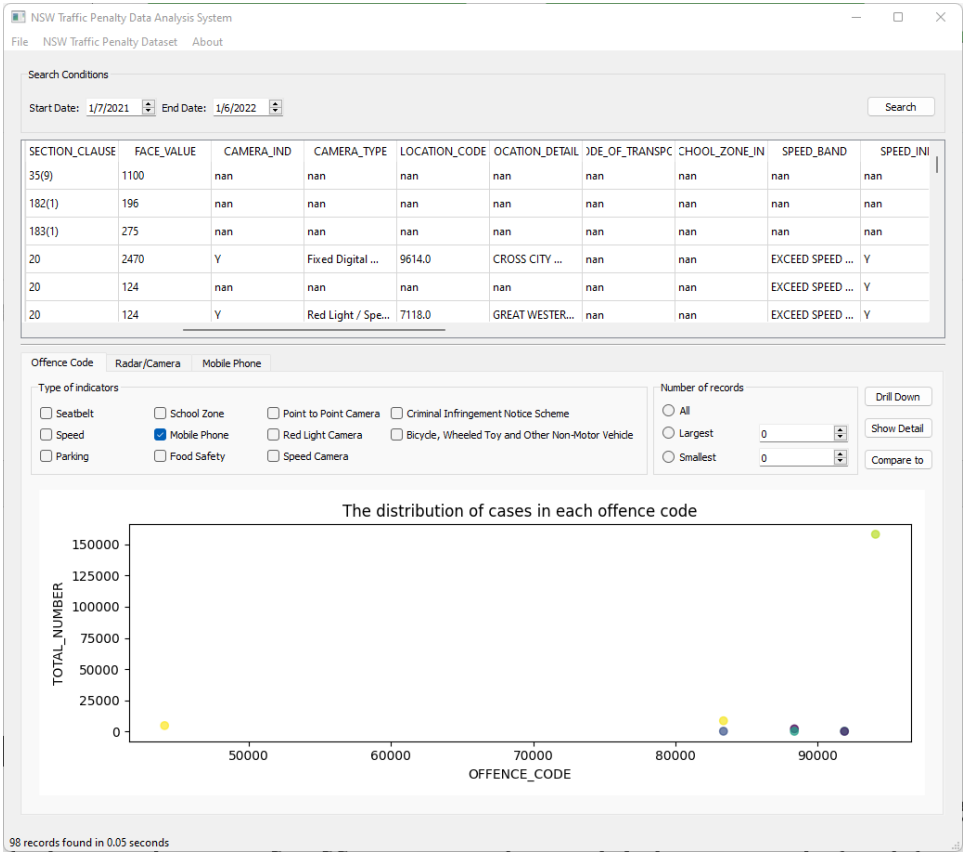


**Figure 8: Offence Code Feature**

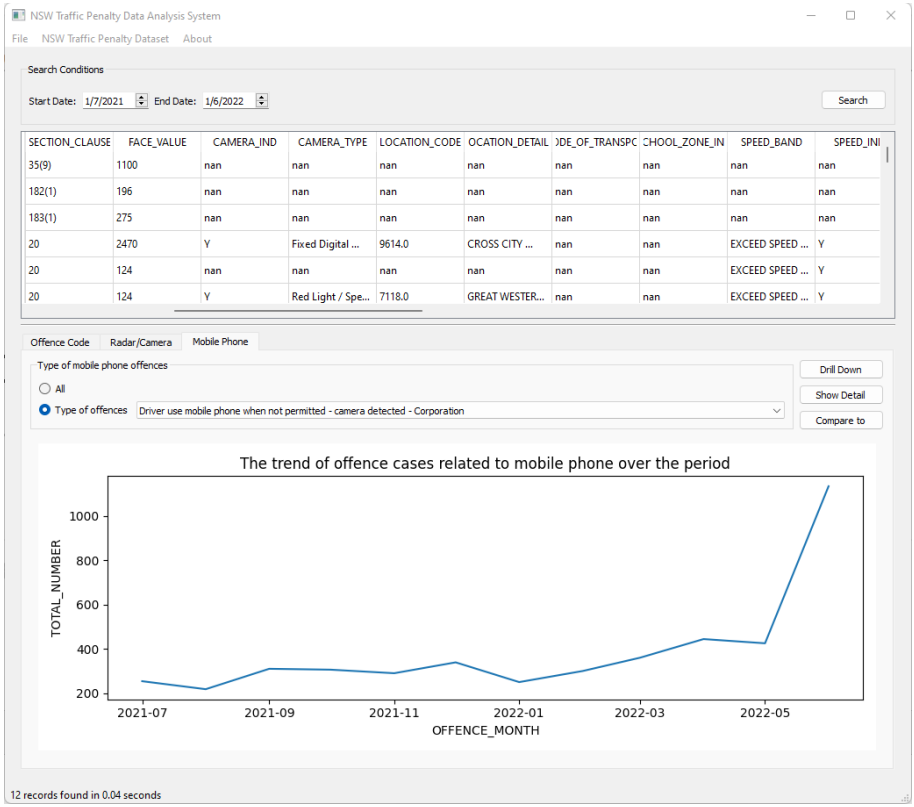


**Figure 9: Mobile Phone Feature**

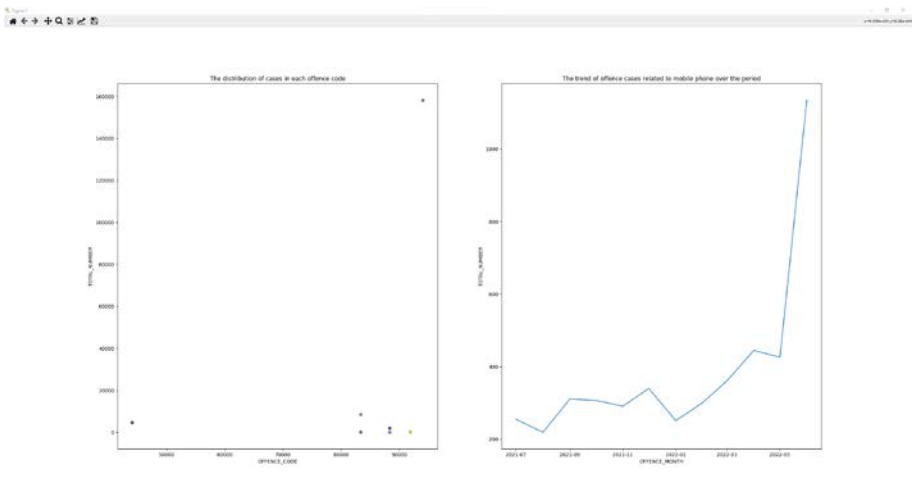


**Figure 10: Compare Feature**

Finally, users can click the "About – About TPDAS" menu to look at the basic information of the software.

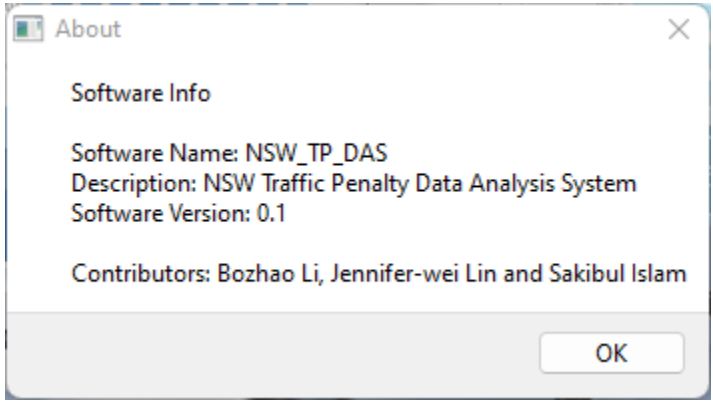


**Figure 5: About TPDAS**