# Instruction document/user manual 2810ICT/ 2022 Assignment

### Part B – Data Analysis and Visualization

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## NSW Traffic Penalty Data GUI (2011-2017):

\*\*Before Launching Application:

Make sure to Python is installed, if not, go to python.org and install the correct version for your machine. Next you will need to install dependencies used by this application. These are:

Matplotlib, pandas, pandastable

To install these:

1. Open Command Prompt in Administrator mode (Find Command Prompt in your windows applications. Right click and select Open as Administrator)
2. Type in the window “Pip Install [Dependency Name]” Swap out [Dependency Name] for each of the listed items above.

Once both of these are installed, you will be able to open the application. There are two ways to do this.

1. In your command prompt window, navigate to the folder containing the main.py (use cd [Directory] then type this command. Python main.py – The application should then launch
2. In your file browser, locate and open the directory containing the main.py file. Double click the main.py file. After a short delay, the application should open.

### Step 1: Main Menu

The Main Menu displays all related headings (Title, Developer Names) and options to display the requested dataset results visually. Specifically, the Main Menu will be ‘Run’ by the user. The user will interact with a Graphical User Interface (GUI) created in Python and Stylized with the Tkinter Package. There are four options the user can/must select from (“Limit to Mobile Phone Usage?” is Optional); these include;

* Select a Report
* Start Date
* End Date
* (\*Optional) Limit to Mobile Phone Usage?

After the User Has Selected these options, they can click and interact with the submit button; this is the final button displayed within this view.

### Step 2: Select a Report

After the user has the GUI ‘Running’, they must Select what report they want to produce a GUI for from the dropdown menu; these report options produce the following outputs:

* For a user-selected period, report the information on all penalty cases.
* For a user-selected period, produce a chart to show the distribution of cases in each offence code
* For a user-selected period, retrieve all cases captured by radar or camera based on the offence description
* For a user-selected period, produce a chart to show the monthly frequency of a particular offence or all offences

\*Note: for all cases, checking *the Limit to mobile phone usage* will filter the results of the report/chart to results indicating mobile phone usage.

### Step 2a: (\*Conditional) Offence Code

Suppose a user selects the report to produce a chart showing the monthly frequency of a particular offence. In that case, the system will allow the input of an offence code. If the user enters no information, the result will include the cumulative total of all offences over the selected period. On the other hand, suppose the user enters a valid offence code. In that case, the GUI will produce a chart showing the frequency of occurrences for that offence every month between their selected dates.

### Step 3: Select the Date Range

Once the user has selected a Specific Report, they will then be required to select a Date Range;

* Start Date
* End Date

The Start Date is the first date to track results, the earliest possible being January – 2012. The End Date refers to the final date to include in the results, the latest possible being November – 2017. This input lets the user be precise with what time-bound information they want to view graphically.

### Step 4: (\*Optional) Limit to Mobile Phone Usage

The user can select the Radio Check Button, ‘Limit to Mobile Phone Usage’, filtering to include mobile phone Infringements only. Once this is Selected, the Visualization produced will only contain Mobile Phone Infringements under the Selected Report and within the Selected Range.

### Step 5: Submit Button

Once a Report has been selected, and the user has supplied a date range (Optionally Adding; Step 4), the user can click the Submit Button. At this time, the requested chart or table will launch in a new window.

### Step 6: Review the Visualization

The Users chart/table will load, and the view will appear in a new window. The result type will vary based on the user input. However, each result appears as a popup, making it transparent for the user.

### Step 7: Return to Start

As the results are displayed in a separate window. To create a new report, all that needs to be done is to enter new data following the previous steps and launch a new window. Closing the previous window is optional and this can be useful for comparing data from multiple reports