# Brief

The Waterview tunnel has installed speed cameras at both ends of the tunnel, these camera take photos for each car that enters and exits. Using OCR the license plate and timestamp is recorded in a file for each entry/exit of a vehicle. We are required to make a program which generates tickets (with corresponding fine) for vehicles that are speeding in the tunnel.

The target user(s) for the program are the operators of the Waterview Tunnel, in this case the NZTA (New Zealand Transport Authority)

# Key Dates/Timeline

Each stage/week must be checked off by Mr Hook.

* Week 1: Outcome 1.1 to 1.4
* Week 2: Outcome 2.1 to 2.2
* Week 3:
* Week 4: Outcome 3.1 to 4.1

***Due 7TH APRIL***

# Requirements of program

* List of tickets generated
* Total value of each ticket
* Registration times (Entry, Exit, Speed and fine)
* Warnings of cars which haven’t exited after 4 minutes

# Design Specifications

* Python 3.8 or above
* Any Python IDE (preferably Visual Studio Code)
* PyQT Graphics Library (for gui)

Try to adhere to PEP 8 when possible (not always possible since using PyQT which is a C++ based library so methods use c++ styling eg. camelCase)

# Planning Notes

* User interface should be graphical
* Files should be in .txt format
* Files should be read from a “./data” folder (relative to project path)
* User should be able to select input and output file path
* Program should be able to identify a vehicle which the license plate may have not been read correctly (eg. Similar matches)
* User should be able to individually export data for vehicles which have not left or license plate does not 100% match as of entry and exit
* There should be a file where fines can be modified eg. .json, .csv or .txt
* Export should be in CSV as it’s a universal file standard used by many other programs

# Input Data

|  |  |  |
| --- | --- | --- |
| Variable Name | Data Type | Inputted by |
| path\_file\_in | String | File Explorer Entry Dialog (txt or csv) |
| path\_file\_out | String | File Explorer Entry Dialog (txt or csv) |
| path\_tickets | String | File Explorer Entry Dialog (txt or csv) |

# Output Data

|  |  |  |
| --- | --- | --- |
| Variable Name | Data Type | Outputted by |
| generated\_tickets | 2D List (string) | Exported as a txt or csv file |
| generated\_errors | 2D List (string) | Exported as a txt or csv file |
| generated\_warning | 2D List (string) | Exported as a txt or csv file |

# Stored/Indexed Data

|  |  |
| --- | --- |
| Variable Name | Data Type |
| Flines | 2D List (string) |
| reg\_in\_out | 2D List (string) |
| removed\_dupes | 2D List (string) |
| reg\_time\_speed | 2D List (string) |
| fines | 2D List (string) |