

[nsw traffic penalty dataset]

[Project Plan]

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# Introduction

## Background

The purpose of traffic laws is to provide all drivers and road pedestrians with a safe road environment. It is a law that every driver must master and implement. But in recent years, many people have not paid serious attention to its existence and have been fined. NSW provides document information and complete data on traffic penalty cases from 2011 to 2017. This database records all information of penalty cases over the seven years, including the date and code, and provides the reason and amount for each penalty as an addition. If the reason for the traffic penalty is speeding, the database also provides the type of camera and the location code for easy lookup.

## Scope

This project’s scope is to design software that automatically records traffic penalties and generates traffic analysis programs for New South Wales residents. The software allows all users to report the information of all penalty cases and form a backup for future searches. In addition, it also enables users to select a specific period to search all cases captured by radar or camera based on offence description and automatically analyse the location code with the highest incidence of traffic penalty and the reasons. This software can also use the actual traffic penalty of mobile phone use while driving to analyse the trend of the time change. The software is also expected to use location codes, and vehicle speeds to find and compare reasonable amounts (exceeding the specified speed of 10km/h or under 10km/h) and analyse the generation rate of speeding tickets between road segments.

## Document contents

The document includes a detailed work breakdown structure, which will appear as a hierarchy chart. This project will be used as a big unit in the chart; then, it will be divided into small teams, which show all the activities involved in the project and give a detailed step plan. In addition, this document also includes definitions of all activities and estimated completion times, which are presented in the table. Each activity will be explained in detail, with an estimated completion time in the end. The purpose of these two diagrams is to allow all project members to complete the design and development of the project smoothly and efficiently in strict accordance with the activity sequence and time limit. Finally, the last section of this document presents a Gantt chart, a bar chart illustrating the project’s progress so that members can clearly understand the dependency relationship between activities and the current schedule status.

# Work Breakdown Structure

The following diagram shows the work breakdown structure of the NSW traffic penalty project in the hierarchical form. This project was divided into five units: initiation, planning, implementation, review, and closeout, and the five are further divided into many small units in detail.

Graphical user interface

Description automatically generated

***Updated diagram 1: work breakdown structure***

# Activity Definition & Estimation

Table

Description automatically generated

***Updated diagram 2: Activity Definition & Estimation***

**Definitions**

**1. Initiation**

**1.1** It is essential to choose a manager to track the overall progress to ensure the entire project runs smoothly.

**1.2** Select members with relevant professional backgrounds to develop this project.

**1.3** Analyse the project feasibility.

**2. Planning**

**2.1** Develop clear project scope, as scope plays a critical role in a project; it affects time and cost.

**2.2** The project manager needs to formulate a rough work schedule so that the project members can clearly understand the project development.

**2.3** The purpose of the work breakdown structure is to decompose the work tasks into many small units so that members can proceed step by step according to the order of the tasks

**2.4** The purpose of the Gantt chart is to display the progress of the project in the form of a chart

**2.5** Manager and members need to choose the program related to the project for development, which is more conducive to the smooth development of the project

**2.6** Ensure that there is a successful communication plan among members so that the project can be better developed

**2.7** Anticipate risks in advance for improvement in later operations

**3. Implementation**

**3.1** The first step for implementation is to design a software interface. The function of the interface is to provide users a clear space to search information that they want.

**3.2** Project Programmersmust collect the date for all traffic penalties and then make a database.

**3.3** Project programmers need to develop an analysis system of traffic penalties for speeding vehicles.

**3.4** Project programmers need to collect all types of cameras or radars and make a database.

**3.5** Project programmers must collect all the dataset's location codes and make a database.

**3.6** Project programmer needs to collect the amount for each traffic penalty cause and make a function that can analyse the penalty amount range for each driving error

**3.7** The project programmer needs to develop an analysis diagram based on the above database to analyse the generation rate and reason for traffic penalty.

**3.8** In the final step of implementation, group members need to merge all the database and analytical functions of Unit 3 and run in the software interface.

**4. Review**

**4.1** After completing the project development, team members must always pay attention to the needs of stakeholders. If the conditions change, members need to modify the original plan immediately.

**4.2** Members must always follow the system’s running status to prevent system crashes.

**4.3** Review the risks and bugs in the program and fixed rapidly.

**4.4** project programmer need to create a unit test python file to test the operation of the software.

**5. Closeout**

**5.1** Manager and members need to follow the progress and implementation results of the project all the time.

**5.2** The second final step is to base on the progress and implementation results of the project to arrange a final report to the stakeholders and management.

**5.3** The last final step is to submit the coverage testing report to the stakeholder.

**Updated work breakdown structure, activity definition and estimated time**

During project implementation, three activities were added to the work breakdown structure, they are 3.1 design software interface, 4.4 test software operation and 5.3 report coverage testing report. Because this project is to design a software that users can use, the function of interface is to provide users with a query space, so activity 3.1 was added in the first part of the implementation, estimated time is 6 hours. In addition, the project programmer needs to create a unit test python file to test the operation of the software and then create a coverage testing report. When the whole project is closed out, the coverage testing report needs to be submitted to the stakeholder.

Two activities were changed, 3.2 design date information dataset and 3.7 design drunk driving penalty number analysis function. Based on the function of software interface, when users want to search specific traffic penalty, they only need to select two specific dates, which are start date and end date, they can view all traffic ticket information between the period, so the project programmer need to create a date information dataset. Furthermore, users can view a diagram of the number of DUI tickets during that period by selecting an initial year and an ending year, so activity 3.7 is also needed to change.

# Gantt Chart

Chart, bar chart

Description automatically generated

***Updated diagram 3: Gantt Chart***