**Project Plan**

**NSW Traffic Penalty Data**

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# Introduction

## Background

The NSW Traffic Penalty Data offers a comprehensive compilation of traffic violations from the year 2011 to 2017. This dataset provides insights into various details such as the offense codes, offense descriptions, penalty amounts, and so forth. By analysing this dataset, authorities can discern patterns, peak offense periods, and specific regions with higher incidences, guiding better resource allocation and targeted awareness campaigns.

## Scope

This project aims to develop a data analysis and visualization tool tailored for the NSW Traffic Penalty Data. The objectives and deliverables for the tool are as follows:

* User-Defined Period Analysis:
  + Allow users to view penalty cases for a selected period.
* Offense Distribution Visualization:
  + Generate charts displaying the distribution of cases based on offense codes for a chosen time frame.
* Camera and Radar Captured Cases Retrieval:
  + Retrieve cases captured by radar or camera based on offense descriptions.
* Mobile Phone Usage Analysis:
  + Offer an analysis of causes related to mobile phone usage, showcasing trends over time, offense codes, and other relevant data points.
* Financial Analysis:
  + Analyse the yearly revenue from penalties
  + The tool will highlight which offenses typically incur the highest penalties.

By the end of this project, stakeholders will have an interactive platform that not only provides insights on traffic penalties but also sheds light on the financial aspect of the penalties, helping in better decision-making and policy adjustments.

## Document contents

*Include some background information about the problem, the scope and what this document will contain.*

# Work Breakdown Structure

This project will be executed for 12 weeks, which aligns with our trimester period. According to Griffith University (2019), one credit point could be considered about 15 hours of coursework. This means that this course requires 150 hours of study load in a trimester, and around 12.5 hours is required to use the time for the course. In this connection, our work breakdown structure assumes each of the three members works 10 hours per week and allocates 30 hours across different tasks per week.

| Task ID | WBSNo | Task Name | Duration | Predecessor |
| --- | --- | --- | --- | --- |
| 1 | 1 | Project Initiation | 1 week |  |
| 2 | 1.1 | Define Project Objective | 9 hours |  |
| 3 | 1.2 | Define Scope of Project | 9 hours | 2 |
| 4 | 1.3 | Define Constraints of Project | 6 hours | 3 |
| 5 | 1.4 | Define Team Roles and Responsibilities | 6 hours | 4 |
| 7 | 2 | Requirement Analysis | 1 week |  |
| 8 | 2.1 | Gather Requirements | 9 hours | 5 |
| 9 | 2.2 | Analyse Dataset of NSW Traffic Penalty Data | 6 hours | 8 |
| 10 | 2.3 | Document Functional Requirement | 7.5 hours | 9 |
| 11 | 2.4 | Document Non-functional Requirement | 7.5 hours | 10 |
| 12 | 3 | Design and Planning | 4 weeks |  |
| 13 | 3.1 | Design Architecture | 30 hours | 11 |
| 14 | 3.2 | Design User Interface | 30 hours | 13 |
| 15 | 3.3 | Plan Database Schema (Option) | 30 hours | 14 |
| 16 | 3.4 | Create Development Timeline | 30 hours | 15 |
| 17 | 4 | Implementation | 5 weeks |  |
| 18 | 4.1 | Develop Basic Framework | 40 hours | 16 |
| 19 | 4.2 | Implement User-Selected Period Reporting | 30 hours | 18 |
| 20 | 4.3 | Implement Chart Distribution | 20 hours | 19 |
| 21 | 4.4 | Implement Radar/Camera Case Retrieval | 20 hours | 20 |
| 22 | 4.5 | Implement Mobile Phone Usage Analysis | 20 hours | 21 |
| 23 | 4.6 | Implement Penalty Amount Analysis | 20 hours | 22 |
| 24 | 5. | Testing and Validation | 1.5 weeks |  |
| 25 | 5.1 | Develop Test Cases | 10 hours | 23 |
| 26 | 5.2 | Perform Unit Testing | 10 hours | 25 |
| 27 | 5.3 | Perform Integration Testing | 10 hours | 26 |
| 28 | 5.4 | Perform User Acceptance Testing | 15 hours | 27 |
| 29 | 6. | Deployment & Project Wrap-up | 1.5 weeks |  |
| 30 | 6.1 | Prepare Deployment Environment | 5 hours | 28 |
| 31 | 6.2 | Deploy Application | 10 hours | 30 |
| 32 | 6.3 | Create User Documentation | 10 hours | 31 |
| 33 | 6.4 | Compile Project Documents | 10 hours | 32 |
| 34 | 6.5 | Host All Resources on GitHub | 10 hours | 33 |

# Activity Definition & Estimation

3.1 Project Initiation

3.1.1 Define Objectives: 9 hours ( 3 member x 3 hours)

* **Description**: In this task, the overall objective of the project must be defined because the main objective would provide insights and information to implement the project. All members need to focus on the goal of the assignment to develop a simple data analysis and visualisation tool for the NSW Traffic Penalty Data.
* **Time Estimation**: Each member will spend 3 hours defining the objective of the projects so that a total hour will be 9 hours.

3.1.2 Define Scope of Project: 9 hours

* **Description**: The scope of the project for developing programs has a critical impact not only on the planning stages but also on the implementation, testing, and deployment stages. All members must understand the objectives defined in the previous WBS, and they need to define the scope of the project based on it. This project requires “a simple analysis and visualisation tool” and the lecturer already proposed the development environment and programming languages such as Miniconda and Python. Accordingly, all members investigate how they can develop this tool under the development environment and try to research frameworks and libraries utilised during the project.
* **Time Estimation**: Each member will spend 3 hours defining the scope of the projects so that a total will be 9 hours.

3.1.3 Define Constraints of Project

* **Description**: This task involves identifying what the limitations or constraints are ahead of our implementation plan. By defining these constraints, we can start to make a list of risks to be mitigated during the project. For example, limitations of working hours or lack of programming skills could be constraints.
* **Time Estimation**: The team will spend 2 hours defining the constraints of the projects so that the total hour will be 6 hours.

3.1.4 Define Teams Roles and Responsibilities

* **Description**: In this task, all team members discuss their roles and responsibilities to plan and develop the analysis tools. This task will specify who will do a specific task defined in the WBS.
* **Time Estimation**: Each member will spend 2 hours defining the R&R of the projects so that the total will be 6 hours.

3.2 Requirement Analysis

* + 1. Gather Requirements
* **Description**: In this task, all team members will collect detailed information on what the analysis tool must do to meet the project objectives. For our project, it is necessary to understand the requirements for analysing and visualising NSW Traffic Penalty Data. More specifically, the following list will be required to review:
* Reporting penalty cases
* Producing charts for offence codes,
* Retrieving cases by radar or camera
* Analysing trends for mobile phone usage and
* Analysing penalty amounts
* **Time Estimation**: Each member will spend 3 hours doing this task so that the total will be 9 hours.

3.2.2 Analyse Requirements

* **Description**: This task involves understanding how to report information for user-selected periods, the types of charts required for offence code distribution, methods for retrieving cases, and specific analyses for the dataset.
* **Time Estimation**: The team will spend 2 hours doing this task so that the total hour will be 6 hours.

3.2.3 Define Functional Requirements

* **Description**: Functional requirements describe the specific activities or functionalities that the software system must perform (Satzinger et al., 2016). For this project, the functionalities we will create are to extract the file data and visualise it in the application window. All members will discuss the details of them.
* **Time Estimation**: The team will spend 2.5 hours doing this task so that the total hour will be 7.5 hours.

3.2.4 Define Non-functional Requirements.

* **Description**: Non-functional requirements describe the features of the system like usability, reliability, performance, and security (Satzinger et al., 2016). For this project, we only consider usability and performance considering the features we submit to get the grade for our assignment. Other features like security and reliability are not needed.
* **Time Estimation**: The team will spend 2.5 hours doing this task so that the total will be 7.5 hours.

3.3 Design and Planning

3.3.1 Design Architecture

3.3.2 Design User Interface

3.3.3 Plan Database Schema (Option)

3.3.4 Create Development Timeline

3.4 Implementation

3.4.1 Develop Basic Framework

3.4.2 Implement User-Selected Period Reporting

3.4.3 Implement Chart Distribution

3.4.4 Implement Radar/Camera Case Retrieval

3.4.5 Implement Mobile Phone Usage Analysis

3.4.6 Implement Penalty Amount Analysis

3.5 Testing and Validation

3.5.1 Develop Test Cases

3.5.2 Perform Unit Testing

3.5.3 Perform Integration Testing

3.5.4 Perform User Acceptance Testing

3.6 Deployment & Project Wrap-up

3.6.1 Prepare Deployment Environment

3.6.2 Deploy Application

3.6.3 Create user Documentation

3.6.4 Compile Project Documents

3.6.5 Host All Resources on GitHub

# Gantt Chart

*This section should contain your Gantt chart. The items in the Gantt chart should match the activity definition from section 3. You should also submit your Gantt chart file separately.*

Reference

Griffith University. (2019, Mar 06). What is a credit point?. Ask Us.

https://studenthelp.secure.griffith.edu.au/app/answers/detail/a\_id/338/~/what-is-a-

credit-point%3F

Satzinger, J. W., Jackson, R. B., & Burd, S. D. (2016). Systems analysis and design : in

a changing world (Seventh). Cengage Learning.