Project Plan

<Group 98>

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Table of Contents

[1.0 Introduction 3](#_Toc46748287)

[1.1 Problem Background 3](#_Toc46748288)

[1.2 Scope 3](#_Toc46748289)

[1.3 Document contents 3](#_Toc46748290)

[2.0 Work Breakdown Structure 4](#_Toc46748291)

[3.0 Activity Definition & Estimation 5](#_Toc46748292)

[4.0 Gantt Chart 6](#_Toc46748293)

# Introduction

## Background

The number of automobiles on the road is increasing every day. As convenient as it makes the life of users, more cars running on the road simply means more chance of road accidents. One of the best ways to reduce the chances of accidents and loss of life and property in the future is to study when, how, and why the accidents have happened over the time at that area. We can thus see the patterns and trends of the accidents which helps a great deal in finding the leading causes of accidents and thus see where changes can be made.

We have incorporated the use of data analysis and their tools to study injury and fatal crashes in Victoria based on various metrics.

## Scope

Our group will be designing a software with the objective of collecting and analyzing the information regarding fatal and injury crashes in the state of Victoria. We will be basing the information with various metrics that will help to a greater understanding of the causes and factors leading up to said accidents.

Project Deliverables:

* Various metrics are used to provide attributes to the crashes such as time of accident, weather conditions, crash type, fatality, drugs & alcohol consumption, age & sex of parties involved
* Design charts and visual representation of the statistics regarding those accidents based on the time/hour of the day they occurred
* Set up a system where the software will analyze the causes of those accidents based on the keywords used
* Determine the effects of drug and alcohol consumption before crashes
* Using the dataset to discover the most accident-prone areas and the common reasons behind them being so.

Project Acceptance Criteria

* Successful incorporation of multiple attributes as causes of accidents
* Successful graphical representation of the user selected attributes and statistics based on the dataset provided
* Accurate use and retrieval of key words to analyze the causes of accidents

Project Exclusion

* Statistics of accidents outside the state of Victoria.
* Accidents where the causes and fatality of the crash were corrected after 2020.

Project Constraints

* The dataset will be limited only to the road crashes from the years 2015 to 2020 confined within the state of Victoria.
* The statistics of the crashes will be limited to the ones that had formal reports made by the Government of Victoria.
* Budget
* Limited number of project members involved

## Document contents

The project demands the use of following documents to ensure all the criteria and objectives are met:

* A Work Breakdown Structure of the tasks broken down into smaller units
* Activity Definition & Estimation for each of the activities done chronologically during the project
* A Gantt Chart based on the activity definition and estimation that will act as a graphic representation of all the milestones of the project.

# Work Breakdown Structure

1. Concept
   1. Develop project plan
   2. Define requirements
      1. User requirements
      2. Software requirements
      3. Use Case & Use Case Diagram
2. Design
   1. Software Design
   2. Define software components
      1. Functions
      2. Data structures
      3. Detailed Design
   3. User interface Design
      1. Structural Design
      2. Visual Design
3. Software Development
4. Test
   1. Unit test
   2. Coverage Report
   3. Requirement Acceptance Testing
5. Executive Summary

# Activity Definition & Estimation

1. Concept
   1. Develop project plan

* Develop project plan including Introduction of the project, Work Breakdown Structure (WBS), Activity definition, Activity estimation for the time, and Gantt Chart.
* Estimated time required is 4 days.
  1. Define requirements
     1. User requirements

- Detail how a user interacts with or uses the program from the end user’s perspective

- Estimated time required is 3 days.

* + 1. Software requirements

- Detail the requirements for the software and functionality it will provide

- Estimated time required is 5 days.

* + 1. Use Case & Use Case Diagram

- Detail how users will perform tasks on the software

- Diagram of a user's possible interactions with software

- Estimated time required is 2 days.

1. Design
   1. Software Design

- A block diagram/flowchart of how software might work

- Estimated time required is 2 days

* 1. Define software components
     1. Functions

- list all preliminary functions in the software. This includes detailed description of each function as follows:

* + - what function does
    - input parameters, data types used, what these are used for
    - side effects caused by the function
    - function's return value

- Estimated time required is 5 days.

* + 1. Data structures

- List all data structures in the software (e.g. linked lists, trees, arrays etc) or eternal data sources. This includes detailed information as follows:

* Type of structure
* Description of where and how it is used
* List of data members
* and what each one is for do
* List of functions that use it

- Estimated time required is 6 days.

* + 1. Detailed Design

- Pseudocode for all non-standard / non-trivial algorithms that operate on data structures

-Estimated time required is 2 days

* 1. User interface Design
     1. Structural Design

- Design the navigational and information structure of software.

- Estimated time required is 4 days.

* + 1. Visual Design

-Detail visual design based on structural design by sketch or wireframe or mock-up

- Estimated time required is 3 days.

1. Software Development

-Develop software based on defined requirements, software components and design

- Estimated time required is 4 weeks.

1. Test
   1. Unit test

- Test software with focusing on components of a software product.

- Estimated time required is 7 days.

* 1. Coverage Report

- Define the coverage of unit tests, including how it is evaluated (function, statement, branch, condition)

- Estimated time required is 5 days.

* 1. Requirement Acceptance Testing

- Test software to determine whether it has met the defined requirement specifications

- Estimated time required is 5 days.

1. Executive Summary

- Analyse the data over a 12-month period and present the results from all required features for chosen dataset

- Estimated time required is 6 days.

\*\*\*Changes between Software Design Document and Actual Implementation.

There have been changes in graphical interface of implementation. It occurred due to lack of skills for team member in charge of implementation.

# Gantt Chart

