Project Plan

<Project Name>

Student Number

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# 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

PROJECT SCOPE STATEMENT

PROJECT NAME:………………………………….. DATE:………………………………….

Scope Description:

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

*This section should include the work breakdown structure for the whole project. The elements from the WBS should be used to generate your activity definition and those activities should then be scheduled in the Gantt Chart. Remember to consider ALL project activities – anything you do or will need to do should be included in the WBS*

*WBS’s are usually presented as some kind of hierarchical diagram/chart etc. The details what is involved each work unit should be provided in section 3:* ***Activity Definition***

*You do NOT need to do a WBS Dictionary for this project – the activity definition (whilst slightly different) will suffice. The WBS is focussed on SCOPE. The Activity definition is focussed on TIME.*

1. Concept
   1. Develop project plan
   2. Define requirements
      1. User requirements
      2. Software requirements
      3. Use Case & Use Case Diagram
2. Design
   1. Define software components
      1. Functions
      2. Data structures
   2. 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

*From your WBS, define the activities required for your project. You will revise this document and add more detail for part B as you discover more about the project.*

*Each activity should be clearly identified by a number and should match up to your Gantt chart. You should provide some estimations for the time you think each activity will take. This should make it easy to prepare your Gantt chart.*

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.
* Estimation for the time taken is ?????
  1. Define requirements
     1. User requirements

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

- Estimation for the time taken is ?????

* + 1. Software requirements

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

- Estimation for the time taken is ??????

* + 1. Use Case & Use Case Diagram

- Detail how users will perform tasks on the software

- Diagram of a user's possible interactions with software

- Estimation for the time taken is ??????

1. Design
   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

- Estimation for the time taken is ??????

* + 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

- Estimation for the time taken is ??????

* 1. User interface Design
     1. Structural Design

- Design the navigational and information structure of software.

- Estimation for the time taken is ??????

* + 1. Visual Design

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

- Estimation for the time taken is ??????

1. Software Development

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

- Estimation for the time taken is ??????

1. Test
   1. Unit test

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

- Estimation for the time taken is ??????

* 1. Coverage Report

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

- Estimation for the time taken is ??????

* 1. Requirement Acceptance Testing

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

- Estimation for the time taken is ??????

1. Executive Summary

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

- Estimation for the time taken is ??????

# 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.*

**Activity:01 Functional Requirements:**

The Data Analysis and Visualization Tool should allow users to:

1. enter time and dates (to and from) to set the time period with which to filter Victoria State Accident Dataset;
2. filter Victoria State Accident Dataset based on date and time;
3. filter Victoria State Accident Dataset based on keyword(s);
4. filter Victoria State Accident Dataset for daily trends of accidents (eg: ratio of accidents happening at different time periods throughout the day at different locations);
5. compare the relevance of Dark Street lights against other attributes such as location, conditions, crash type, road user type, object hit;
6. analyse the impact of alcohol consumption on accidents at different time periods throughout the day;
7. analyse and check output results;
8. use charts and infographics to visualize output results;
9. analyse the safest times and locations to travel;
10. compare the relevance of road type and location on accidents.

**Activity:02 Use Case:**

|  |  |  |
| --- | --- | --- |
| **Sr.#** | **Use Case** | **Description** |
| 01 | General Search of VSAD | Filter-less search on VSAD using the DAaV tool returns random results. |
| 02 | Apply *Data & Time* search filter | Time & Date filter will return results within selected time period for analysis. |
| 03 | Apply *Keywords* based search filter | Keywords filter will return targeted search results for analysis. |
| 04 | Apply *Accident Daily Trends* filter | Daily Trend filter will return search results, sorted by time of day. |
| 05 | Apply *Dark Street Lights* filter | Dark Street lights filter will modify search results, based on if it was dark and street lights were on or off. |
| 06 | Check *Alcohol* filter | Alcohol time filter will modify search results, based on if alcohol was a factor |
| 07 | Analyse Output | Selected filters will return specific search results based on selected filters. |
| 08 | Visualize Output on Charts | Output Chart generate charts from the search results returned from selected filters. |
| 09 | Recommendation for Travel | Travel recommendations will return safest time period (least accidents) to travel to selected location |
| 10 | Accidents Comparison | Accidents Comparison will return results based on selected filters for two selected locations for comparison |