Project Plan:

UI implementation for Victoria state accident dataset

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# Project Overview

## Background

In this project we are tasked with designing a graphical user interface which will visualise the Victorian state accident dataset. The data set contains the road crash statistics from 2015 to 2020. This data allows users to analyse the injury and fatal car crashes in Victoria within the five years. The data set can be analysed by date, time, location, conditions, and crash types. The current dataset is very large and hard to analyse by itself. Through the implementation of the GUI, we aim to achieve ease of analysis for the user and provide easy access for the user chosen time periods for better and easier analysis of the dataset. Currently there are over 70,000 unique values which are hard to analysis in their base excel format. With the implementation of the UI, we aim to provide an easy access for the users selected period of time for a better visualisation of the dataset. This time frame will be within 2015 and 2020. Providing readable graphs and trends for the dataset will also be a functionality of the GUI which will allow users to better understand the accident conditions and analysis of the accidents.

## Scope

## Requirements

The requirement of this project is to develop a simple data visualisation and analysis tool for the Victoria state accident data set. When designing the user interface there are four required features that need to be functional in the UI:

* The user must be able to select a period of time and display all accidents in that period.
* The user selected period must also produce a chart that will display the number of accidents (on average) in each hour of the day.
* Retrieve accidents by keywords (collisions, etc) for the selected period of time.
* Allow users to analyse the impact of alcohol in accidents.
* Having a search for total crashed for each speed zone within a period of time.

## Implantation tools

The UI will be implemented using python and wxFormBuilder for the graphical user interface. This project plan will be providing all the required processes of planning the UI. Using the work breakdown structure, we aim to provide a realistic schedule of the activities required for the designing of the UI. The WBS will project the work into smaller and manageable components of the schedule. The report aims to provide an overview of the project to better understand the processes used in the design development of the UI.

## Deliverables

Upon completion of this project the deliverables will include a graphical user interface that meets the requirements outlined above. The project time will be 6 weeks. This time is taking into considerations the planning, designing, and creation of the UI. The constraints of this projects are the time restriction. As there can be issues arising during the development of the UI it is difficult to realistically fit unexpected events into the schedule due to the smaller time restriction.

## Document contents

This document will contain the background and scope of the project, the work breakdown structure, the activity, activity definition, and Gantt chart for the WBS. The work breakdown structure is the breakdown of the project into smaller components. This is done to better visualise the scope of the project and all the activities to better understand the required deliverables for completion of the project. The activity definition will focus on scheduling all the events and activities for the project completion. With this, a time estimation will also be provided for the project completion. The Gantt chart will also provide a better visualisation of the activity definition and providing a more readable timeline of the project completion and managing time during the project.

# Work Breakdown Structure

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| **Level 0: Project creation and vision** |
| Creating a graphical user interface to visualise the data set for Victoria State accidents |

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| **Level 1: Planning the Project** |
| **Meeting Clients**   * + Defining client time requirements   + Defining clients UI requirements |
| **Defining Team roles:**   * + Providing team members with roles |
| **Team Requirements:**   * + Teams require computers.   + GitHub account   + A git repository for all team member to access.   + Team communication (outlook, teams) |
| **Defining the project:**   * + Provide a project background. (Developing a data visualisation tool)   + Provide a Scope for the project. Requirements for the project and time estimates |
| **Scheduling the work and time:**   * + Creating work breakdown structure     - know the requirements for the project.   + Creating activity definitions and time estimation   + Creating Gantt timeline for project completion     - Using the excel sheet provided display all activities and time estimations. |

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| **Level 2: Defining design requirements for the project** |
| **Defining graphical UI design requirements:**   * + Create a drop down for time periods.     - User must be able to choose a time for the data.   + Display the numbers of accident.     - Create a table to display the accidents for a chosen time.   + Display the accidents through keywords.     - Create a visualisation (table or graph) which displays the accidents through key words such as (pedestrians, collision).   + Display a data visualisation of alcohol.     - Create a table with a percentage of accident types affected by alcohol. |
| **Dropdown table requirements:**   * + Create buttons for years.     - Create buttons after selected years.       * Accidents per speed zone       * Accidents per hour       * Search by keywords       * Alcohol impacts |
| **Defining software design requirements:**   * + Using python and importing pandas for file readability software:     - must be able to read a .csv file.     - must be able to accept user input.     - Sort by user input year function.     - Allow user input for accident type     - must display relevant information for user selected times.   + Using wxformbuilder the software UI:     - Must display all relevant buttons.     - Display relevant search types.     - Display relevant graphs for user selected options such as alcohol or accident types.     - Display/create a table for relevant data. |

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| **Level 3: Code creation and GUI creation** |
| **Creating the Code:**   * + Create .py file for data reading in python program (pyCharm).     - Import pandas and import wxformbuilder     - User input     - Sort by user input year function.     - Allow user input and function to display accident type.     - Create required software requirements. Form the desgin requirements   + Using wxformBuilder:     - Create UI pages for each menu.     - Create buttons form the UI requirements.     - Display charts from the UI requirements |
| **Program Support:**   * + Provide an instruction guide (.doc) file for the user detailing all functionality and usability.     - What all the buttons do in the UI     - How to navigate through the UI |

# 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.*

# 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.*