UNIVERSITI TEKNOLOGI MALAYSIA

SECP1513 - SECTION 04

TECHNOLOGY AND INFORMATION SYSTEM

GROUP ASSIGNMENT: 04- ONLINE DASHBOARD REPORT

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Part 1: Group Detail

Title of the report: **General Road Accidents in Malaysia**

Group Leader: PUAH JUN HONG

MEMBER'S NAME	TASKS
1. GOH JUN BOON	Report Writing
2. PUAH JUN HONG	Report Writing
3. TEO CHEEN SHENG	Report Writing
4. YAW CHOON HONG	PowerBI
5. ZHANG HANCHEN	Data Collecting

Part 2: Introduction

A. Trends of Data Analytics

Data analytics is an emerging technology where it allows the user to get a conclusion by inputting the data and undergoing analysis.

A good example of a technology that utilizes data analytics is Artificial Intelligence. This is because Artificial Intelligence requires to collect a huge amount of data and the data needs to be further analyzed in order to achieve its goal. Besides that, there are business sectors such as banks and other financial services that are using data analytics technology in order to predict and forecast future financial risk. Not only that, banks and other financial services also could implement data analytics technology to analyze the transaction pattern of their customers so that the fraud activity can be identified and stopped immediately.

B. Industrial Talk 7 (Microsoft PowerBI)

The Industrial Talk 7 which was conducted by Mr. Isma Redha has introduced the Microsoft PowerBI software. This Microsoft PowerBI software functions as a user-friendly platform to assist business organizations in data analytics. This software is to be used when the business organization wants to collect, manage, analyze data of different kinds and create a dashboard to visualize the data for the user.

From the Industrial Talk, we have understood that this Microsoft PowerBI software has reduced the burden of the business organizations significant as it analyses able to a huge amount of data and preview the relations of the dataset in a dashboard by using a wide variety of visualizations such as bar chart, pie chart, line chart, scatterplot chart, bubble chart, heat map variations, and many others.

C. Process of Data Analytics

First, we are required to determine the types of data that can be visualized. This is because data can be categorized into different types such as numerical or categorical data. Numerical data is where the data consist of numerical values. For example, population, number of registered vehicles can be considered as numerical data. However, categorical data is the data where it consists of non-numerical values.

Second, we start with collecting the data by using various online sources such as Malaysia Open Data or Kaggle.

After the completion of data collection, we have organized the collected data into a spreadsheet by using Microsoft Excel so that it can be examined easily during the next stage which is also known as the data cleaning stage.

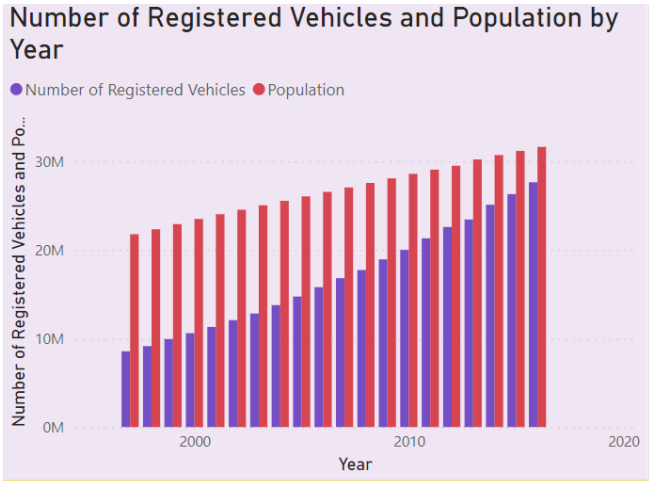
Lastly, we have performed a data cleaning. During the process of data cleaning, we have to make sure that there are no mistakes in the data such as incomplete datasets, incomplete data types, and variables. Besides that, we have also removed any unnecessary data from the dataset so that the dataset will not contain any data there are not useful to our objective.

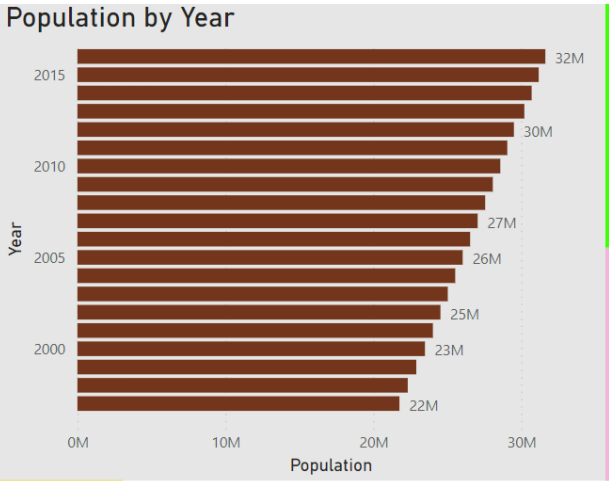
Part 3: Data Analytics Interpretation for the Chosen Data

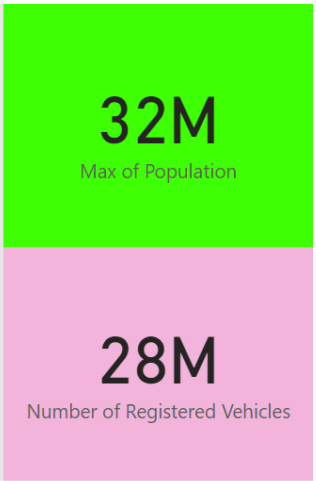
A. Variable Transformations

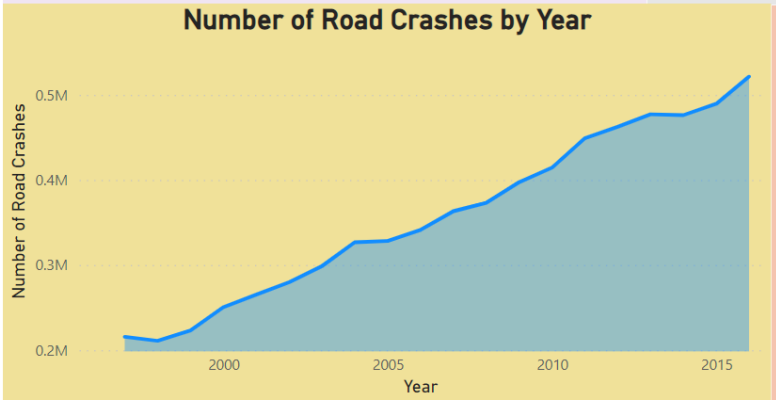
Variable transformation is a process where the variable will be transformed into other types such as swapping the data of the variable into a percentage, decimal number, binary, and many others. However, variables from the dataset that we have collected are suitable for our case study, hence there is no variable transformation has been done in our dataset.

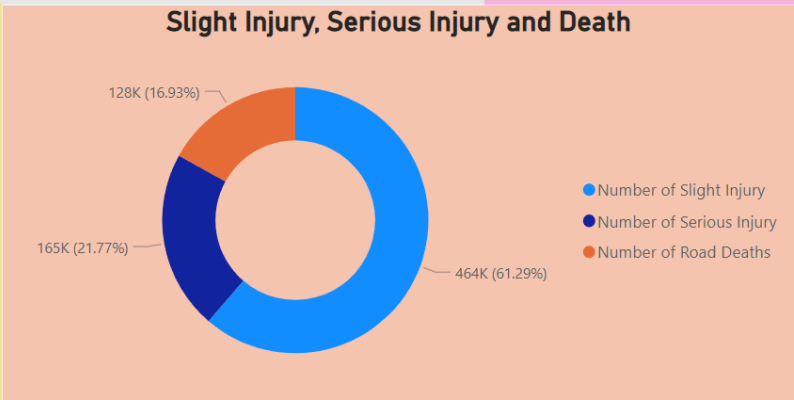
B. Discussion of the Results for Data Visualization











The objective and goal of our data analytics is to understand the relationship between the increase of population and the number of registered vehicles. Not only that, we would also like to understand how does the number of registered vehicles affect the number of road crashes.

Question 1: Why does the number of registered vehicles increases each year?

Answer: From the graph of number of registered vehicles and Population by Year, it shows the relationship that both number of registered vehicles and population increase every year. This is because the increase of population has caused a higher demand of vehicles. Therefore, the number of registered vehicles have to be increased to meet the demand.

Question 2: Why does the number of road crashes increases?

Answer: Based on the graph of number of road crashes by year, we can see that as the year goes by, the amount of road crashes increases. This can be related back to the graph of number of registered vehicles and population by year and the first question asked, where when the number of registered vehicles increases, the number of road crashes increases.

Conclusion on our case study: From all the data collected and analysed, the increase of population in every year has caused the increase of the number of registered vehicles. Hence, this has caused more vehicles to be on the road and therefore it makes the chance of a road crash happening higher.

Report Conclusion

The technology of Data Analytics is crucial and essential to the future. As the industry of different sectors grows, this has induced an increase in the amount of data. Hence, there is a need for new technology such as Data Analytics to assist the clients to manage and analyse a large amount of collected data more efficiently.

Since data analytics is becoming more and more essential in multiple industry sectors, programs that carry out data analysing processes such as Microsoft Power BI have been created and launched to these sectors so data analysing can become easier. Microsoft Power BI has the function of connecting multiple different types of data that used to be unrelated and creating a dashboard that acts as a data visualizer where a summary of all relationships between given data is analysed and shown. This dashboard function has higher efficiency and will save time and work for industries.

Link to the Online Dashboard Report:

https://app.powerbi.com/view?r=eyJrIjoiMGEwOTJjM2UtZThjOS00NjZlLWE1MzktNGY0YWU4YTgwMjZmIiwidCI6IjZjNmJhY2VhLTU2NDgtNDU1Yi1hMWFiLWU3MTZiNGY5ZTJhYiIsImMiOjEwfQ%3D%3D&pageName=ReportSection