	SUBJECT: BSD1323 STORYTELLING AND DATA VISUALIZATION	**MARKS**: 60(15%)
	TOPIC: CHAPTER 3 to CHAPTER 8	
	INDIVIDUAL PROJECT **DUE DATE:** 17 May - 5 June 2022	
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INDIVIDUAL PROJECT: MARKING SCHEME

CLO	Description	PLO mapping	Percentage	Marks
CLO2	Demonstrate the data visualization skill using an effective storytelling.	PLO2: Cognitive Skills and Functional work skills with focus on Numeracy skills C3: Application	5%	20

CLO2 RUBRICS OF QUESTION 4								
CRITERIA	**LEVEL OF ACHIEVEMENT**						**WEIGHTAGE**	**SCORE**
	0	**1 Inadequate**	**2 Emerging**	**3 Developing**	**4 Good**	**5 Excellent**		
Motivation of project topic	No motivation of the project topic provided	Very little motivation of the project topic provided	Motivation of the project topic provided but missing all major points	Motivation of the project topic provided but unclear	Clear and good motivation of the project topic provided	Very clear and excellent motivation of the project topic provided	0.5	
Details explanation of the dataset	Failed to explain the dataset	Not Efficiently, effectively, and accurately explain the dataset	Partly accurate, but not effectively explain the dataset	Effectively explain the dataset but not accurate	Accurately and effectively but not efficiently explain the dataset	Accurately effectively, and efficiently explain the dataset	0.5	
Details analysation of each dashboard	Failed to analyse the dashboards	Not Efficiently, effectively, and accurately analyse the dashboards	Partly accurate, but not effectively analyse the dashboards	Effectively analyse the dashboards	Accurately and effectively but not efficiently analyse the dashboards	Accurately effectively, and efficiently analyse each dashboard	2	
Concluding remarks	No concluding remarks provided	Very little concluding remarks provided and inaccurate	Concluding remarks provided but unclear and inaccurate	Concluding remarks provided but partly inaccurate	Clear and good concluding remarks provided	Very clear and excellent concluding remarks provided	1	
						TOTAL (20)		

CLO	Description	PLO mapping	Percentage	Marks
CLO3	Display a powerful data visualization, report, dashboard or stories in solving various applications using appropriate software.	PLO3: Functional work skills with focus on Practical, and Digital skills P4: Mechanism	10%	40

CRITERIA	LEVEL OF ACHIEVEMENT						WEIGHTAGE	SCORE
	0	1 Inadequate	2 Emerging	3 Developing	4 Good	5 Excellent		
Theory/ Knowledge on data visualization	No theoretical knowledge on data visualization observed	Very little knowledge observed on data visualization or some information is incorrect	Some knowledge or information on data visualization observed but missing all major points	Some knowledge or information on data visualization observed but still missing some major points	Good knowledge on data visualization observed, missing some minor points	Excellent knowledge on data visualization observed; provides all necessary background principles	1	
Theory/ Knowledge on advanced dashboard	No theoretical knowledge on advanced dashboard observed	Very little knowledge observed on advanced dashboard or some information is incorrect	Some knowledge or information on advanced dashboard observed but missing all major points	Some knowledge or information on advanced dashboard observed but still missing some major points	Good knowledge on advanced dashboard observed, missing some minor points	Excellent knowledge on advanced dashboard observed; provides all necessary background principles	1	
Efficiency/ Assembly/ Tidiness	Failed to demonstrate the given task	Not efficiently, effectively and neatly demonstrated the given task	Partly efficient, but not effectively and neatly demonstrated the given task	Efficiently, but not effectively and neatly demonstrated the given task	Efficiently and effectively but not neatly demonstrated the given task	Efficiently, effectively and neatly demonstrated the given task	1	
Interactive Data Visualization Techniques	Failed to demonstrate the given task	Inappropriate interactive data visualization techniques are demonstrated	Partly correct interactive data visualization techniques are demonstrated, with partly valid data	Correct interactive data visualization techniques are demonstrated, with partly valid data	Good interactive data visualization techniques are demonstrated, with valid but not completely accurate data	Competent interactive data visualization techniques are demonstrated, with valid and accurate data	1	

Advanced Dashboard Techniques & Data Validation	Failed to demonstrate the given task	Inappropriate advanced dashboard techniques are demonstrated	Partly correct advanced dashboard techniques are demonstrated, with partly valid data	Correct advanced dashboard techniques are demonstrated, with partly valid data	Good advanced dashboard techniques are demonstrated, with valid but not completely accurate data	Competent advanced dashboard techniques are demonstrated, with valid and accurate data	2	
Results (the advanced dashboard)	Not submitting Report/ No discussion on this topic	Lack of results/ zero readability of the result. Poor originality , taking credits of others work	Partly complete result	Result presented but at low readability/ some result presented. Reader has to guess some of the missing information. Less originality, copy paste here and then	Clear, neat presentation. All required results are presented. Readability. Complete with labels, title, axes, etc.	Very Clear, neat presentation. All required results are presented. High readability. Complete with labels, title, axes, etc.	2	
						TOTAL (40)		

Malaysia Historical Mortality Study

a) Title and motivation:

This study was about Malaysia historical mortality rates. The study was conducted using dataset provided by the Global Burden of Disease (GBD) Collaborative Network. The dataset contains historical death records in Malaysia and it is useful for study historical mortality rates about Malaysia. The motivation for this study was create an advanced dashboard to compare historical mortality rates in Malaysia with other countries, then analyse the mortality rates across age groups in Malaysia, and compare the mortality rates for males and females in Malaysia. The analyses, visualizations, comparisons, and observations in this study will be conducted through Tableau.

b) Explanation dataset:

The dataset was provided by the 2010 Global Burden of Disease (GBD). The 2010 Global Burden of Disease (GBD) study estimated the global burden of disease, injury and risk factors from 1970 to 2010. In these estimates, the authors claim that data inaccuracy is due to sampling error, known non-sampling error, missing data, and uncertainty due to model parameters. This dataset provides the quantitative data type as death rate per 100000 and number of deaths. The geographic data type was 187 country names and country code, the categorical data type was age group and sex, the date data type was years 1970, 1980, 1990, 2000 and 2010. The number of record in this dataset was also greater than 500 with 58905 datasets.

c) Analyse of each visualization and dashboard:

In order to compare historical mortality rates in Malaysia with other countries, 10 neighbouring countries near Malaysia were randomly selected for the study in Dashboard 1 and the title “Mortality rates comparing 10 countries in Asian from years 1970 to 2010”. In the Dashboard 1 involved visualization 1, 2 and 3 (VIZ 1, VIZ 2, VIZ 3). The VIZ 1 was a Packed Bubbles Chart with title “The deaths rate per 100,000 for 10 different countries in Asian from year <1980>”. The VIZ 2 was a Bar Chart Race, and the VIZ 3 was a Dual-Axis Map with same title “Number of deaths in year <1980> for 10 different countries in Asian”.

Based on the Dashboard 1, in years 1970, 1980, 1990, 2000 and 2010, Indonesia was consistently the country with the highest number of deaths, while Singapore was consistently the country with the lowest number of deaths compare with 10 different countries in Asian. Therefore, in the (VIZ 2) Indonesia was the country always at the top Rank 1, while Singapore was the country always at the below top Rank 10. However, in the (VIZ 1) Myanmar was consistently the country with the highest deaths rate per 100,000 in years 1970, 1980, 1990, 2000 and 2010. Furthermore, the number of deaths for the country Malaysia was consistently increasing from 59147 to 130656 in years 1970 to 2010. Therefore, in the (VIZ 2) Malaysia was at the Rank 8 in year 1970 and increasing to Rank 7 in year 1980, 1990, 2000 and 2010. Since the number of deaths for the country Malaysia was increasing, but in the (VIZ 1) the deaths rate per 100,000 was recorded decreasing from 69224 to 64305 in year 1990 to 2010. In additional, in the (VIZ 3) the number of deaths for the country Laos was always stays within 32000 to 37000 in years 1970 to 2010. Then, the number of deaths for the country Laos was consistently increasing from 32069 to 36901 in years 1970 to 2010. In (VIZ 1), the death rate per 100,000 decreasing in most countries from 1970 to 2010.

On the next, to analyse the mortality rates across age groups in Malaysia, 5 different age group in Malaysia were selected with was (20-24 years), (25-29 years), (30-34 years), (35-39 years) and (40-44 years) in Dashboard 2 and the title “Mortality rates comparing for 20 to 44 age group people in Malaysia from years 1970 to 2010”. In the Dashboard 2 involved visualization 4, 5 and 6 (VIZ 4, VIZ 5, VIZ 6). The VIZ 4 was a Text Table (cross tabs) with title “Number of deaths for 20 to 44 age group in Malaysia from years 1970 to 2010”. The VIZ 5 was a Bar Chart with title “The deaths rate per 100,000 for 20 to 44 age group in Malaysia from year <1980>” and the VIZ 6 was a Donut Chart with title “Percentage of deaths for 20 to 44 age group in Malaysia from year <1980>”.

According to the Dashboard 2, in years 1970, 1980, 1990, 2000 and 2010, the age group (40-44 years) was consistently with the highest number of deaths compare to the other 4 age group in Malaysia. Therefore, in the (VIZ 6) the age group (40-44 years) also consistently with the highest percentage of deaths in Malaysia. Besides that, number of deaths for the age group (40-44 years) was always increasing from 2049 to 4362 in year 1970 to 2010. Since the number of deaths for the age group (40-44 years) was increasing, but in the (VIZ 5) the deaths rate per 100,000 was recorded decreasing from 898.8 to 489.0 in year 1970 to 2010. Furthermore, in 1970, 1980, 1990, 2000 and 2010 the age group (20-24 years) was consistently with the lowest deaths rate per 100,000 compare to the other 4 age group in

Malaysia. Then, in the (VIZ 4) the total number of deaths in the year 2010 was 15483 higher than the total number of deaths 7958 in the year 1970. The total number of deaths was also increasing from 7958 to 15483 in years 1970 to 2010. In (VIZ 5), the death rate per 100,000 for Malaysia decreasing in most age group, while in (VIZ 4) the number of deaths increasing in most age group.

At the last part, to compare the mortality rates for males and females in Malaysia, male and female in Malaysia were selected for the study in Dashboard 3 and the title "Mortality rates comparing male and female in Malaysia from years 1970 to 2010". In the Dashboard 3 involved visualization 7, 8 and 9 (VIZ 7, VIZ 8, VIZ 9). The VIZ 7 was a Butterfly Chart with title "Number of deaths for male and female in Malaysia from year <1980>". The VIZ 8 was a Text Table (cross tabs) with title "The deaths rate per 100,000 for male and female in Malaysia from year <1980>" and the VIZ 9 was a Donut Chart with title "Percentage of deaths for male and female in Malaysia from year <1980>".

Based on the Dashboard 3, in years 1970, 1980, 1990, 2000 and 2010, the total number of deaths for male was consistently higher than female in Malaysia. The total deaths rate per 100,000 for male also higher than female in Malaysia from years 1970 to 2010. The total deaths rate per 100,000 for male also consistently decreasing in Malaysia from years 1970 to 2010. Therefore, in the (VIZ 9) the percentage of deaths for male is always higher than female in Malaysia from 1970 to 2010. Furthermore, in the (VIZ 7) the number of deaths for male and female in age group (1-4 years) were consistently decreasing from year 1970 to 2010. While the number of deaths for male and female in age group (80+ years) were consistently increasing from year 1970 to 2010. Besides that, in the (VIZ 7) the number of deaths for male in age group (20-24 years) was consistently increasing while for the female was consistently decreasing from year 1970 to 2010. In the (VIZ 8), the deaths rate per 100,000 for male and female in age group (80+ years) were consistently higher than other age group in Malaysia from year 1970 to 2010.

d) Concluding remarks:

In conclusion, between the years from 1970 to 2010, the population of most countries including Malaysia was on the rise. Therefore, it is normal for the number of death to keep increasing from years 1970 to 2010. But the death rate per 100,000 has been decreasing, because it can be say that the continuous improvement of medical facilities has increased the life expectancy of most people. This can be proving because from the number of deaths for age group (1-4 years) in Malaysia was high from 1970, and then decline year by year. Then, the number of deaths for the country Indonesia was always higher than Malaysia every year, but looking at the deaths rate per 100,000 Indonesia is about the same as Malaysia. This proves that because Indonesia has a large population than Malaysia. Summarize, the number of deaths is affected by the size of the population. A country with a large population has more number of deaths. The death rate per 100,000 can be artificially by technology, and will gradually decline as long as there are advanced medical facilities.