School of Science, Computing and Engineering Technologies

COS30045

LAB 4.1 Design Studio

Overview

In this lab you will be given a sample data set and asked to identify the different data and attribute types. You will also think about some questions about this data set that might be answered by a visualisation.

ardd_fatalities_Jan2020_0.xlsx (download from Canvas)

Download and review this data set before attempting this exercise.

1 Interpreting the data set

Complete the LAB 4.1 Quiz.

2 Visualisation Design

Think of three questions you would like to answer with that require a data visualisation.

For each data question you will need to consider the following:

Which data attributes (columns) do you need to answer this question?

Do you need to transform any of the data?

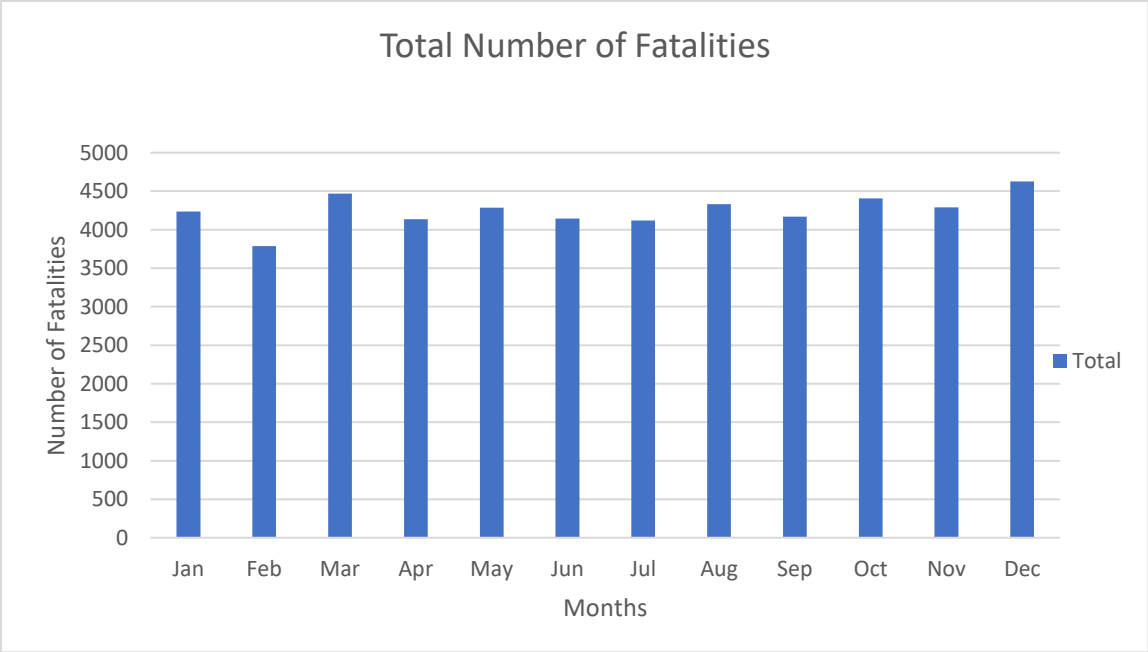
Does the data type change when you transform the data? If so how.

Make a sketch of how you think your visualisation might look and add to this document.

Your Question 1

Your answer here…

Row Labels	Sum of Number Fatalities
Jan	4237
Feb	3787
Mar	4467
Apr	4137
May	4285
Jun	4145
Jul	4118
Aug	4331
Sep	4169
Oct	4406
Nov	4291
Dec	4628
Grand Total	**51001**

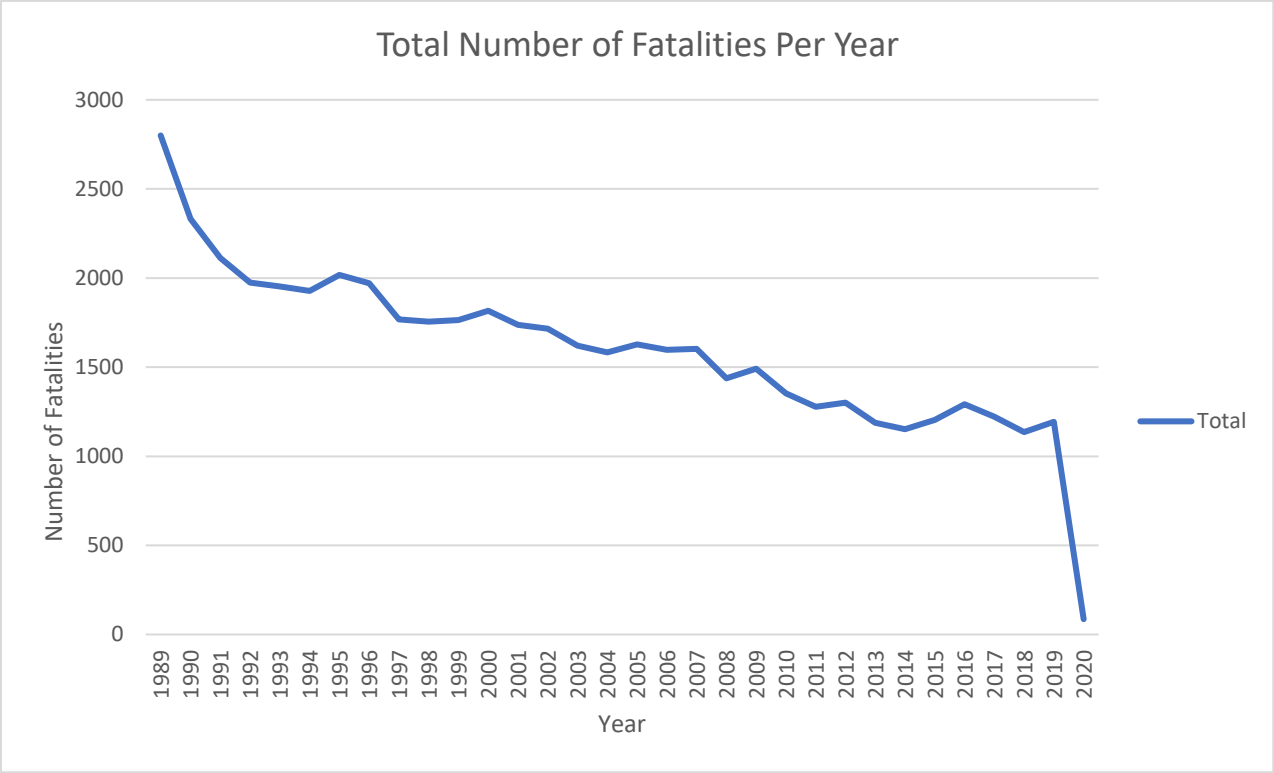


"What is the total number of fatalities per month?" The month and the total number of fatalities are the necessary information elements that are needed. Since the data is already collected per month and presented in an appropriate way, no data transformation is necessary. There is no need to change the data types. The monthly fatalities can be successfully visualized with a bar chart.

Your Question 2

Your answer here

Row Labels	Sum of Number Fatalities
1989	2800
1990	2331
1991	2113
1992	1974
1993	1953
1994	1928
1995	2017
1996	1970
1997	1767
1998	1755
1999	1764
2000	1817
2001	1737
2002	1715
2003	1621
2004	1583
2005	1627
2006	1598
2007	1603
2008	1437
2009	1491
2010	1353
2011	1277
2012	1300
2013	1187
2014	1151
2015	1204
2016	1292
2017	1221
2018	1135
2019	1194
2020	86
Grand Total	**51001**

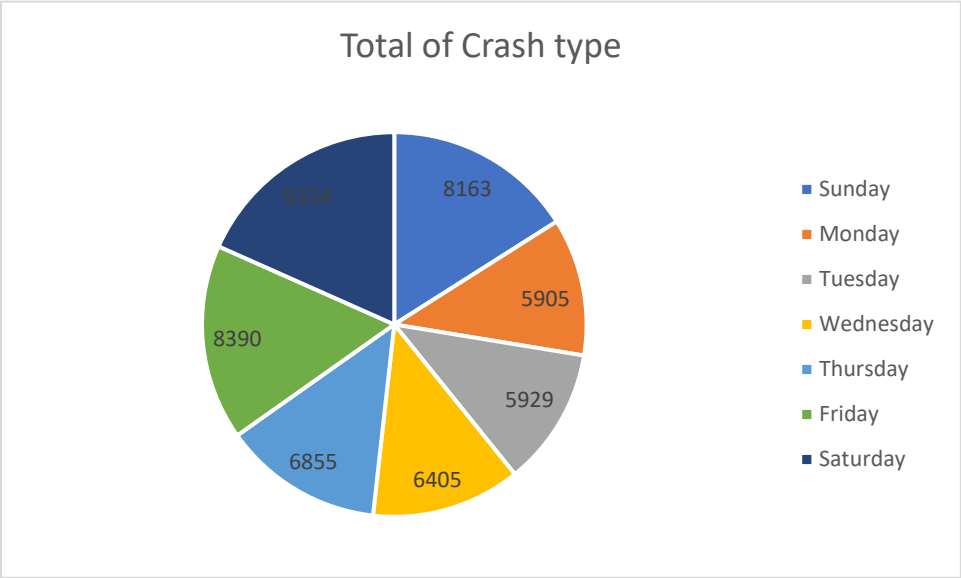


"What are the number of fatalities per year?" The year and the total number of fatalities are the necessary information elements that are required. Although the data is already arranged by year and shows the number of fatalities for each year, no data transformation is needed. The data types are still the same. A line chart can be used to visualize the trend of fatalities over the years effectively.

Your Question 3

Your answer here

Row Labels	Count of Crash Type
Sunday	8163
Monday	5905
Tuesday	5929
Wednesday	6405
Thursday	6855
Friday	8390
Saturday	9354
Grand Total	**51001**



"What differences exist between the distribution of crash types on different days of the week?" The number of crash types and the day of the week are the needed attributes that are required. Although the data is already displayed by day and displays the overall number of crashes for each day, no data transformation is necessary. The data types don't change. A pie chart can be used to effectively display the proportion of crash types across different days of the week.

Include this file as evidence for your Demonstration 2