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