DUE: September 24th, 2018 at 11:59 PM

QMM 1001 - Statistics for Data Analytics Lab 2 /20

Create and submit an R script which, when run, will print the answers to the following questions. Your R script must include a title with your name and student number and comments for each question number.

1. **(1 mark)** The data set "Criminal_Iowa.csv" tracks former criminals from Iowa over the 3-year period after their release from prison to determine whether or not they were convicted of a new crime during that time and returned to prison (called recidivism). Read this dataset into R and store the data in an object called "crime.iowa".

2. **(2 marks)** Create a frequency distribution for the variable "Convicting.Offense.Type" using the table() function and store it in the variable "offense". Print out the results.

3. **(2 marks)** Create a relative frequency distribution for the variable "Convicting.Offense.Type" using the prop.table() function and store it in the variable "relative.offense". Print out the results.

4. **(6 marks)** Create a properly labelled bar chart for the "Convicting.Offense.Type" variable. Be sure to include a title, x-axis label, and y-axis label. Change the y-axis so that it has a lower limit of 0 and an upper limit of 8000. Change the bar colours so that "Drug" is red, "Other" is blue, "Property" is green, "Public Order" is yellow, and "Violent" is pink. (HINT: use c() to create a vector of colours).

5. **(4 marks)** Create a pie chart for the "Recidivism...Return.to.Prison" variable. Be sure to include a title for the plot. (HINT: you must create a frequency distribution first).

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6. **(5 marks)** Using the rpivotTable() function from the rpivotTable package create a dynamic contingency table for the "crime.iowa" dataset. Create a two-way contingency table using the variables "Convicting.Offense.Type" and "Recidivism…Return.to.Prison". Using your contingency table answer the following questions:
    a. What percentage of those that return to prison initially committed a drug related offense? Answer this question using a comment in your R script.
    b. What percentage of those that committed a violent crime did not return to prison? Answer this question using a comment in your R script.

    You MUST export an image of your final contingency table and submit that file separately to the drop box.

Save your R Script as: Last Name, First Name LAB 2

Save your contingency table image for Question 6.

Upload your R Script AND contingency table to the "R Assignment – Lab 2" drop box on Moodle before September 24th at 11:59 PM.