Assignment 3: Excel Pivot Tables and Database Functions

Date Due: February 6, 2023. Instructor: Trani

Show all your work including screen captures of Excel pivot tables, VBA code, etc. Create a single PDF file for the complete homework and submit a single file.

Problem 1

Use the train station file provided to answer the following questions.

a) Use a Pivot Table to summarize the number of train stations by state.

b) Find the state with the highest number of train stations.

c) Find the state with the highest number of bus stations. Show the Pivot Table to do that.

Problem 2

Use the car data file provided in class (week 1) to answer the following questions. This problem requires that you use Excel Pivot Tables.

a) Summarize the average weight of cars by country and by style (answer should be a matrix).

b) Find the average weight of sporty cars manufactured in the U.S.

c) Find the average weight of compact cars manufactured in the Japan.

d) Use a pivot table to summarize the number of cars by country and by style.

e) Find the maximum weight of Large cars not produced in Japan or the U.S.

Problem 3

Use the car data file provided in class (week 1) to answer the following questions. This problem requires that you use Excel database functions explained in class. Using IF statements to classify the data is not allowed.

Show all your work and provide screen captures of your work and **include the actual database commands** used to make each query.

a) Calculate the average weight for cars produced in the U.S. with weight > 3,120 lb.

b) Calculate the average tank size for American-made cars whose tank size > 16.8 gallons.

c) Count the number of cars produced in Japan with horsepower > 98 HP and weight > 2400 lbs.

d) Count the number of cars produced in the U.S. with turning circle > 39 feet and weight < 2600 lbs.

Problem 4

Use the file **consulting_firm_practice_forWeb.xls** that contains information about the construction assets of a company. A sample portion of the spreadsheet is shown below.

a) Create a pivot table to summarize the value of the construction equipment in-service owned by the company. The pivot table should report the average value of the equipment in-service by location (a table).

b) Create a pivot chart to summarize the number and types of construction equipment by city for the company. The pivot chart should report (graphically) the average value of each type of equipment.

c) Create a pivot table to summarize the number of each construction equipment in-maintenance owned by the company. The pivot table should report the numbers of each type of equipment in-maintenance by location (a table).

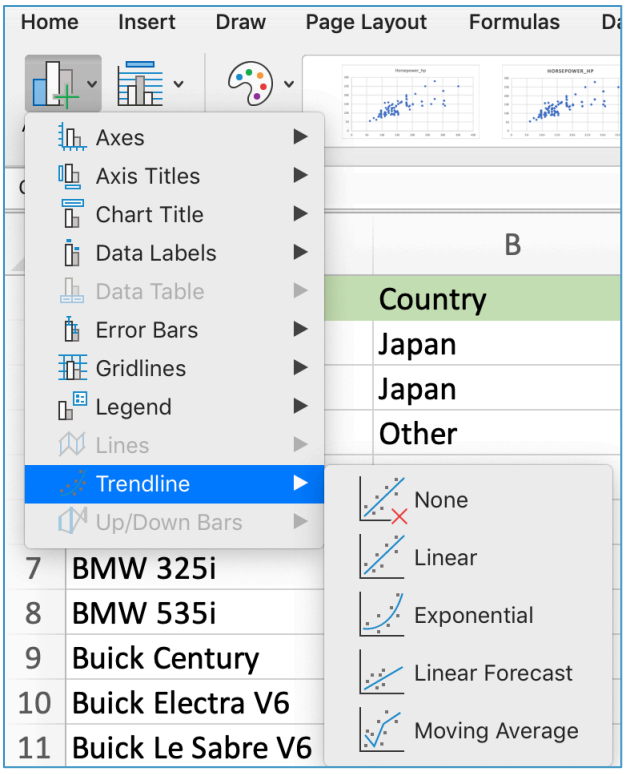
	A	B	C	D
1	Location	Equipment	Status	Value ($)
2	Atlanta	Truck	In-service	64,647
3	Charlotte	Truck	In-service	79,490
4	Atlanta	Truck	In-service	65,097
5	New York	Truck	In-service	84,332
6	New York	Truck	In-service	59,494

Problem 5

Use the car data file provided in class (week 1) to answer the following.

Model	Country	Type	Weight_lbs	Turning Circle_ft	Displacement_cInch	Horsepower_hp	Gas Tank Size_gallons
Acura Integra	Japan	Small	2700	37	112	130	13.2
Acura Legend V6	Japan	Medium	3265	42	163	160	18
Audi 100	Other	Medium	2935	39	141	130	21.1
Audi 80	Other	Compact	2670	35	121	108	15.9
Audi 90	Other	Compact	2790	35	141	130	15.9
BMW 325i	Other	Compact	2895	35	152	168	16.4
BMW 535i	Other	Medium	3640	39	209	208	21.1
Buick Century	USA	Medium	2880	41	151	110	15.7

a) Perform a **simple linear regression** using Excel to estimate the best model that relates vehicle engine horsepower (in the x-axis) and the gas tank size (gallons) in the y-axis. Use the **trend analysis function in Excel** to estimate the equation of the line that fits the data best.



The steps to make a trend line from a chart are:

i) Select the chart.

ii) Click the + button on the right side of the chart or select the Add Chart Element in the Chart Design Tab.

iii) Select the Trendline and make your selection of Options.

c) Create a function in Excel (using VBA) to calculate the gas tank size (dependent variable) given the car horsepower (in units of horsepower).

d) Test the function created in part (c) to estimate the horsepower expected for gas tank sizes 15, 16, 16.5, 18.5 and 19.5 gallons.