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/*************************************************************************
 Program Name: jblubau1_hw10_script
 Date Created: 10/24/2016
 Author: Joseph Blubaugh
 Purpose: Homework Assignment 10
************************************************************************* */

libname datadb 'C:\Users\Joseph\Projects\learning\Statistics\STAT_604\Materials' access=readonly;
libname output 'C:\Users\Joseph\Projects\learning\Statistics\STAT_604\Data';

filename outpdf 'C:\Users\Joseph\Projects\learning\Statistics\STAT_604\Homework\jblubau1_hw10_output.pdf';

* 2) Read in tabled1x2016 ;
data monthly_jobs;
	set datadb.tabled1x2016;
	* b) Fix spelling;
	if industry = 'TRADE, TRANSPORTATION, AND UITLITIES' then do
		industry = 'TRADE, TRANSPORTATION, AND UTILITIES';
	end;
	* c) Change industry to propper case;
	industry = propcase(industry);
	where state ne '';
	if Aug__2015 ne . then;
		year = '2015';
		month = 'August    ';
		Jobs = Aug__2015;
		output;
	if Sept__2015 ne . then;
		year = '2015';
		month = 'September ';
		Jobs = Sept__2015;
		output;
	if Oct__2015 ne . then;
		year = '2015';
		month = 'October   ';
		Jobs = Oct__2015;
		output;
	if Nov__2015 ne . then;
		year = '2015';
		month = 'November  ';
		Jobs = Nov__2015;
		output;
	if Dec__2015 ne . then;
		year = '2015';
		month = 'December  ';
		Jobs = Dec__2015;
		output;
	if Jan__2016 ne . then;
		year = '2016';
		month = 'January   ';
		Jobs = Jan__2016;
		output;
	if Feb__2016 ne . then;
		year = '2016';
		month = 'February  ';
		Jobs = Feb__2016;
		output;
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		if Mar__2016 ne . then;
			year = '2016';
			month = 'March     ';
			Jobs = Mar__2016;
			output;
		if Apr__2016 ne . then;
			year = '2016';
			month = 'April     ';
			Jobs = Apr__2016;
			output;
		if May_2016 ne . then;
			year = '2016';
			month = 'May       ';
			Jobs = May_2016;
			output;
		if June_2016 ne . then;
			year = '2016';
			month = 'June      ';
			Jobs = June_2016;
			output;
		if July_2016 ne . then;
			year = '2016';
			month = 'July      ';
			Jobs = July_2016;
			output;
		if Aug__2016 ne . then;
			year = '2016';
			month = 'August    ';
			Jobs = Aug__2016;
			output;
		keep industry state month year jobs;
run;

* 3) Create 6 data sets from the bls data;
data
		large (keep=industry state average_jobs)
		medium (keep=industry state average_jobs)
		small (keep=industry state average_jobs)
		government (keep=state average_jobs market_size)
		goods (keep=industry state average_jobs market_size)
		services (keep=industry state average_jobs market_size);
		set datadb.bls_jobs1516;
		* b) fix name;
		if industry = 'TRADE, TRANSPORTATION, AND UITLITIES' then do ;
			industry = 'TRADE, TRANSPORTATION, AND UTILITIES';
		end;
		* c) compute average;
   average_jobs = sum(of Aug__2015--Aug__2016)/13;
		format average_jobs 8.1;
		label average_jobs = 'Average Jobs' market_size = 'Market Size';
		* d) do not process missing values;
		if missing(average_jobs) then delete;
		* e) Separate the 3 datasets based on market size;
		if average_jobs > 1000 then do;
			market_size = 'Large';
			output large;
		end;
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        else if 100 <= average_jobs <= 1000 then do;
                market_size = 'Med.';
                output medium;
        end;
        else do;
                market_size = 'Small';
                output small;
        end;
        * f) Use select statement to create 3 more data sets;
        select (industry);
                when ('GOVERNMENT') do;
                        output government ;
                end;
                when ('CONSTRUCTION', 'MANUFACTURING') do;
                        output goods;
                end;
                otherwise do;
                        output services;
                end;
        end;
run;

* 4) Setup pdf;
ods pdf file=outpdf bookmarkgen=yes bookmarklist=hide;

* 5) Print first 50 and last 50 from step 2;

title '5a - First 50 Observations from Monthly Jobs Data Set';

proc print data=monthly_jobs (obs=50) noobs;
        var industry state month year jobs;
run;

title '5b - Last 50 Observations from Monthly Jobs Data Set';

proc print data=monthly_jobs (firstobs=5463 obs=5512) noobs;
        var industry state month year jobs;
run;

* 6) Print observations from 3) data sets;

* 6a) Print 30 obs from small;
title '6a - First 30 Observations of Small Markets';
proc print data=small (obs=30) label;
run;

* 6b) Print 30 obs from medium;
title '6b - First 30 Observations of Medium Markets';
proc print data=medium (obs=30) label;
run;

* 6c) Print all obs from large;
title '6c - Large Markets';
proc print data=large label;
run;

* 6d) Print 30 obs beginning at ob 75 from goods data set, no obs numbers;
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title '6d - Selected Observations from Goods Industry';
proc print data=goods (firstobs=75 obs=105) label noobs;
run;

* 6e) Print 30 obs from small market in services data set;
title '6e - Small Markets in the Services Industry';
proc print data=services (obs=30) label;
        where market_size = 'Small';
run;

* 6f) Print all obsservations from the government data set;
title '6f - Government Industry';
proc print data=government label;
run;

* 7) Datasets in work library;
title '7 - Data Sets in WORK Library';
proc print data=sashelp.vtable label noobs;
        where libname = 'WORK';
        var libname memname crdate nobs nvar;
run;

ods pdf close;
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