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/*************************************************************************************
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/* Program Name:     pulkit.jain_HW14.sas
                        */
/* Program Location: C:\Users\Pulkit
Jain\Documents\sasuniversityedition\myfolders\assign14 */
/* Date Created:     11/20/2017
                        */
/* Author:              Pulkit Jain
                       */
/* Purpose:             Assignment 14, using arrays & variable lists
               */
/*************************************************************************************
********/

/* Create two libname statements;                                    */
/* Assign library to locaion of hw data with access only; */
/* Assign another library with read and write access;     */

libname hw_data '/folders/myfolders/hw_data' access=readonly;
libname pulkit14 '/folders/myfolders/assign14';

/* Specify a fileref to designate output of pdf */

filename HW14 '/folders/myfolders/assign14/pulkit.jain_HW14_output.pdf';

/* Pre - steps to prepare the data for merger */

/* Prepare data set receivers */
data Receivers17 (DROP = num);
      set hw_data.Receivers17;
      *define length of variable Team;
      length Team $28;
      *create a variable for extraction of team name from variable Player & remove
blank spaces;
      num = find(Player, ',', -length(Player));
      Team = substr(Player, num+2);
      Player = scan(Player, 1, ',');
run;

/* Prepare data set total defense */
data Totaloffense17(Rename= (Rank=TeamRank Games=TeamGames
                                          TDs=TeamTDs   Yds_game=TeamYds_game));
      set hw_data.Totaloffense17(drop=W_L);
run;

*sort Receivers17 dataset by Team;
proc sort data=Receivers17;
      by Team;
run;

*sort TotalOffense17 dataset by Team;
proc sort data=Totaloffense17;
      by Team;
run;

/* 2 Merge the Receivers17 & TotalOffense17 dataset */

data pulkit14.tot_data team_data norecv (KEEP=TeamRank Team TeamGames Plays YDS
      Yds_Play TeamTDs TeamYds_Game);
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      merge Receivers17(in=A) Totaloffense17(in=B);
      by Team;
      length count $8;
      length pct_avgyds 8;
      if A= 1 then count= 'yes';
      else count = 'no';
      pct_avgyds = Yds_Game/TeamYds_Game;
      output pulkit14.tot_data;
      if A=1 & B=1 then output team_data;
      if A=0 then output norecv ;
      label TeamRank= 'Rank'
              Plays= 'Total Plays'
              YDS= 'Total Yards'
              Yds_Play= 'Yards per Play'
              TeamYds_Game= 'Yards per Game';
      format TeamYds_Game 8.0;
run;

/* 3 Create Output */

ods pdf file = HW14 bookmarkgen=yes;
options orientation = landscape nonumber dtreset;

/* 4 sort the data */
proc sort data= norecv;
      by TeamRank;
run;


/* 5 Print top 10 observations of data */
proc print data= norecv (obs= 10) label noobs;
      var TeamRank
            Team
            Plays
            YDS
            Yds_Play
            TeamYds_Game;
      title1 "NCAA Football Receiving Analysis";
      title3 "Top 10 Offences with No Top Receivers";
      footnote "Data Downloaded from NCAA.org";
run;

/* 6 Hide date and time*/
options nodate;
footnote;

/* 7 */

proc freq data=PULKIT14.tot_data;
      tables Cl*Pos/nopercent nocol missing;
      title1 "NCAA Football Receiving Analysis";
      title2 "Number of Players in each Position by Class";
      label Cl= "Class"
              Pos= "Position";
run;

/* 8 Use means in proc statement */
proc means data=team_data Mean Median Q1 Q3 MAXDEC=2;
      var pct_avgyds;
      class Cl Pos;
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      title1 "NCAA Football Receiving Analysis";
      title3 "Percent of Team Average by Class and Position";
run;

/* 9 Create table for the procedure */
proc tabulate data= PULKIT14.tot_data ;
      class Cl Pos;
      var pct_avgyds;
      table Cl*Pos ALL, pct_avgyds*(N Mean Median Q1 Q3);
run;

ods pdf close;
ods listing;
```