```
 1        OPTIONS NONOTES NOSTIMER NOSOURCE NOSYNTAXCHECK;
NOTE: ODS statements in the SAS Studio environment may disable some output features.
 62
 63
/********************************************************************************
********/
 64        /* Program Name:    pulkit.jain_HW14.sas    */
 65        /* Program Location: C:\Users\Pulkit
Jain\Documents\sasuniversityedition\myfolders\assign14 */
 66        /* Date Created:    11/20/2017         */
 67        /* Author:  Pulkit Jain                    */
 68        /* Purpose:   Assignment 14, using arrays & variable lists    */
 69
/********************************************************************************
********/
 70
 71        /* Create two libname statements;   */
 72        /* Assign library to locaion of hw data with access only; */
 73        /* Assign another library with read and write access;     */
 74
 75        libname hw_data '/folders/myfolders/hw_data' access=readonly;
NOTE: Libref HW_DATA refers to the same physical library as _TEMP0.
NOTE: Libref HW_DATA was successfully assigned as follows:
      Engine:        V9
      Physical Name: /folders/myfolders/hw_data
 76        libname pulkit14 '/folders/myfolders/assign14';
NOTE: Libref PULKIT14 was successfully assigned as follows:
      Engine:        V9
      Physical Name: /folders/myfolders/assign14
 77
 78        /* Specify a fileref to designate output of pdf */
 79
 80        filename HW14 '/folders/myfolders/assign14/pulkit.jain_HW14_output.pdf';
 81
 82        /* Pre - steps to prepare the data for merger */
 83
 84        /* Prepare data set receivers */
 85        data Receivers17 (DROP = num);
 86        set hw_data.Receivers17;
NOTE: Data file HW_DATA.RECEIVERS17.DATA is in a format that is native to another
host, or the file encoding does not match the
      session encoding. Cross Environment Data Access will be used, which might
require additional CPU resources and might reduce
      performance.
 87        *define length of variable Team;
 88        length Team $28;
 89        *create a variable for extraction of team name from variable Player &
remove blank spaces;
 90        num = find(Player, ',', -length(Player));
 91        Team = substr(Player, num+2);
 92        Player = scan(Player, 1, ',');
 93        run;

NOTE: There were 200 observations read from the data set HW_DATA.RECEIVERS17.
NOTE: The data set WORK.RECEIVERS17 has 200 observations and 10 variables.
NOTE: DATA statement used (Total process time):
      real time           0.01 seconds
      cpu time            0.02 seconds
```

```
94
95          /* Prepare data set total defense */
96          data Totaloffense17(Rename= (Rank=TeamRank Games=TeamGames
97           TDs=TeamTDs   Yds_game=TeamYds_game));
98          set hw_data.Totaloffense17(drop=W_L);
 NOTE: Data file HW_DATA.TOTALOFFENSE17.DATA is in a format that is native to another
host, or the file encoding does not match the
        session encoding. Cross Environment Data Access will be used, which might
require additional CPU resources and might reduce
        performance.
99          run;

 NOTE: There were 129 observations read from the data set HW_DATA.TOTALOFFENSE17.
 NOTE: The data set WORK.TOTALOFFENSE17 has 129 observations and 8 variables.
 NOTE: DATA statement used (Total process time):
        real time          0.01 seconds
        cpu time           0.00 seconds


100
101         *sort Receivers17 dataset by Team;
102         proc sort data=Receivers17;
103         by Team;
104         run;

 NOTE: There were 200 observations read from the data set WORK.RECEIVERS17.
 NOTE: The data set WORK.RECEIVERS17 has 200 observations and 10 variables.
 NOTE: PROCEDURE SORT used (Total process time):
        real time          0.00 seconds
        cpu time           0.00 seconds


105
106         *sort TotalOffense17 dataset by Team;
107         proc sort data=Totaloffense17;
108         by Team;
109         run;

 NOTE: There were 129 observations read from the data set WORK.TOTALOFFENSE17.
 NOTE: The data set WORK.TOTALOFFENSE17 has 129 observations and 8 variables.
 NOTE: PROCEDURE SORT used (Total process time):
        real time          0.00 seconds
        cpu time           0.00 seconds


110
111         /* 2 Merge the Receivers17 & TotalOffense17 dataset */
112
113         data pulkit14.tot_data team_data norecv (KEEP=TeamRank Team TeamGames
Plays YDS
114         Yds_Play TeamTDs TeamYds_Game);
115         merge Receivers17(in=A) Totaloffense17(in=B);
116         by Team;
117         length count $8;
118         length pct_avgyds 8;
119         if A= 1 then count= 'yes';
120         else count = 'no';
121         pct_avgyds = Yds_Game/TeamYds_Game;
122         output pulkit14.tot_data;
```

```
123        if A=1 & B=1 then output team_data;
124        if A=0 then output norecv ;
125        label TeamRank= 'Rank'
126          Plays= 'Total Plays'
127          YDS= 'Total Yards'
128          Yds_Play= 'Yards per Play'
129          TeamYds_Game= 'Yards per Game';
130        format TeamYds_Game 8.0;
131        run;

NOTE: Missing values were generated as a result of performing an operation on
missing values.
      Each place is given by: (Number of times) at (Line):(Column).
      25 at 121:23
NOTE: There were 200 observations read from the data set WORK.RECEIVERS17.
NOTE: There were 129 observations read from the data set WORK.TOTALOFFENSE17.
NOTE: The data set PULKIT14.TOT_DATA has 225 observations and 19 variables.
NOTE: The data set WORK.TEAM_DATA has 200 observations and 19 variables.
NOTE: The data set WORK.NORECV has 25 observations and 8 variables.
NOTE: DATA statement used (Total process time):
      real time           0.04 seconds
      cpu time            0.02 seconds


132
133        /* 3 Create Output */
134
135        ods pdf file = HW14 bookmarkgen=yes;
NOTE: Writing ODS PDF output to DISK destination "HW14", printer "PDF".
136        options orientation = landscape nonumber dtreset;
137
138        /* 4 sort the data */
139        proc sort data= norecv;
140        by TeamRank;
141        run;

NOTE: There were 25 observations read from the data set WORK.NORECV.
NOTE: The data set WORK.NORECV has 25 observations and 8 variables.
NOTE: PROCEDURE SORT used (Total process time):
      real time           0.00 seconds
      cpu time            0.00 seconds


142
143
144        /* 5 Print top 10 observations of data */
145        proc print data= norecv (obs= 10) label noobs;
146        var TeamRank
147        Team
148        Plays
149        YDS
150        Yds_Play
151        TeamYds_Game;
152        title1 "NCAA Football Receiving Analysis";
153        title3 "Top 10 Offences with No Top Receivers";
154        footnote "Data Downloaded from NCAA.org";
155        run;

NOTE: There were 10 observations read from the data set WORK.NORECV.
NOTE: PROCEDURE PRINT used (Total process time):
```

```
        real time           0.08 seconds
        cpu time            0.08 seconds


156
157        /* 6 Hide date and time*/
158        options nodate;
159        footnote;
160
161        /* 7 */
162
163        proc freq data=PULKIT14.tot_data;
164        tables Cl*Pos/nopercent nocol missing;
165        title1 "NCAA Football Receiving Analysis";
166        title2 "Number of Players in each Position by Class";
167        label Cl= "Class"
168          Pos= "Position";
169        run;

NOTE: There were 225 observations read from the data set PULKIT14.TOT_DATA.
NOTE: PROCEDURE FREQ used (Total process time):
        real time           0.08 seconds
        cpu time            0.08 seconds


170
171        /* 8 Use means in proc statement */
172        proc means data=team_data Mean Median Q1 Q3 MAXDEC=2;
173        var pct_avgyds;
174        class Cl Pos;
175        title1 "NCAA Football Receiving Analysis";
176        title3 "Percent of Team Average by Class and Position";
177        run;

NOTE: There were 200 observations read from the data set WORK.TEAM_DATA.
NOTE: PROCEDURE MEANS used (Total process time):
        real time           0.05 seconds
        cpu time            0.06 seconds


178
179        /* 9 Create table for the procedure */
180        proc tabulate data= PULKIT14.tot_data ;
181        class Cl Pos;
182        var pct_avgyds;
183        table Cl*Pos ALL, pct_avgyds*(N Mean Median Q1 Q3);
184        run;

NOTE: There were 225 observations read from the data set PULKIT14.TOT_DATA.
NOTE: PROCEDURE TABULATE used (Total process time):
        real time           0.05 seconds
        cpu time            0.05 seconds


185
186        ods pdf close;
NOTE: ODS PDF printed 4 pages to
/folders/myfolders/assign14/pulkit.jain_HW14_output.pdf.
187        ods listing;
188
```

```
189        OPTIONS NONOTES NOSTIMER NOSOURCE NOSYNTAXCHECK;
202
```