```
 1          OPTIONS NONOTES NOSTIMER NOSOURCE NOSYNTAXCHECK;
 NOTE: ODS statements in the SAS Studio environment may disable some
output features.
 62
 63
/*****************************************************************
/
 64         /*Program Name- HW11.sas*/
 65         /* Date Created: October 25 2017 */
 66         /* Author: Dilip Lalwani */
 67         /* Purpose: SAS and working with datasets */
 68         libname jobsdata "/folders/myfolders/jobsdata"
access=readonly;
 NOTE: Libref JOBSDATA was successfully assigned as follows:
       Engine:        V9
       Physical Name: /folders/myfolders/jobsdata
 69         /*#2a Data set must contain only Sector, state, month and
year variables*/
 70         data work.monthly_jobs(keep=Sector state month year jobs);
 71         set jobsdata.jobs2017;
 NOTE: Data file JOBSDATA.JOBS2017.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.
 72         /*#2b Rename sector name*/
 73         if upcase(Sector)="PROFESSIONAL AND BUSINESS SERVICES"
then
 74         Sector="PROFESSIONAL/BUSINESS SERVICES";
 75         /*#2c Change sector names to proper case*/
 76         Sector=PROPCASE(Sector);
 77         /*#2d Create month, year and jobs variables and perform
observations check*/
 78         length month $10;
 79         if Aug__2016 ne . then do;
 80         month="August";
 81         year="2016";
 82         jobs=Aug__2016;
 83         output;
 84         end;
 85         if Sept__2016 ne . then do;
 86         month="September";
 87         year="2016";
```

```
88          jobs=Sept__2016;
89          output;
90          end;
91          if Oct__2016 ne . then do;
92          month="October";
93          year="2016";
94          jobs=Oct__2016;
95          output;
96          end;
97          if Nov__2016 ne . then do;
98          month="November";
99          year="2016";
100         jobs=Nov__2016;
101         output;
102         end;
103         if Dec__2016 ne . then do;
104         month="December";
105         year="2016";
106         jobs=Dec__2016;
107         output;
108         end;
109         if Jan__2017 ne . then do;
110         month="January";
111         year="2017";
112         jobs=Jan__2017;
113         output;
114         end;
115         if Feb__2017 ne . then do;
116         month="February";
117         year="2017";
118         jobs=Feb__2017;
119         output;
120         end;
121         if Mar__2017 ne . then do;
122         month="March";
123         year="2017";
124         jobs=Mar__2017;
125         output;
126         end;
127         if Apr__2017 ne . then do;
128         month="April";
129         year="2017";
130         jobs=Apr__2017;
131         output;
132         end;
133         if May_2017 ne . then do;
```

```
 134        month="May";
 135        year="2017";
 136        jobs=May_2017;
 137        output;
 138        end;
 139        if June_2017 ne . then do;
 140        month="June";
 141        year="2017";
 142        jobs=June_2017;
 143        output;
 144        end;
 145        if July_2017 ne . then do;
 146        month="July";
 147        year="2017";
 148        jobs=July_2017;
 149        output;
 150        end;
 151        if Aug__2017 ne . then do;
 152        month="August";
 153        year="2017";
 154        jobs=Aug__2017;
 155        output;
 156        end;
 157        run;

 NOTE: There were 518 observations read from the data set
JOBSDATA.JOBS2017.
 NOTE: The data set WORK.MONTHLY_JOBS has 5434 observations and 5
variables.
 NOTE: DATA statement used (Total process time):
       real time           0.01 seconds
       cpu time            0.02 seconds


 158        data large(keep=Sector state averagejobs)
 159        medium(keep=Sector state averagejobs)
 160        small(keep=Sector state averagejobs)
 161        government(keep= state averagejobs marketsize)
 162        goods(keep= Sector state averagejobs marketsize)
 163        services(keep= Sector state averagejobs marketsize);
 164        /*#3a Remove variables rep_date and ann_chng*/
 165        set jobsdata.monthly_jobs1617(drop= rep_Date ann_chg);
 166        /*#3b Compute average number of jobs on each observation*/
 167        totaljobs=sum(of Aug__2016--Aug__2017);
 168        averagejobs=totaljobs/13;
 169        format averagejobs 10.1;
```

```
 170        /*#3c Remove observations where value of Average Jobs is
missing*/
 171        if averagejobs eq . then delete;
 172        /*#3d Create datasets based on average no of jobs*/
 173        if averagejobs gt 900 then do;
 174        marketsize="Large";
 175        output large;
 176        end;
 177        else if averagejobs >= 100 and averagejobs <= 900 then do;
 178        marketsize="Med.";
 179        output medium;
 180        end;
 181        else do;
 182        marketsize="Small";
 183        output small;
 184        end;
 185        /*#3e Create remaining data sets based on Sector*/
 186        select (upcase(Sector));
 187        when("GOVERNMENT")
 188        output government;
 189        when("CONSTRUCTION","MANUFACTURING")
 190        output goods;
 191        when("FINANCIAL ACTIVITIES", "PROFESSIONAL AND BUSINESS
SERVICES", "EDUCATION AND HEALTH
 192        SERVICES", "LEISURE AND HOSPITALITY")
 193        output services;
 194        OTHERWISE
 195        END;
 196        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).
       6 at 167:11   6 at 168:22
 NOTE: There were 424 observations read from the data set
JOBSDATA.MONTHLY_JOBS1617.
 NOTE: The data set WORK.LARGE has 29 observations and 3 variables.
 NOTE: The data set WORK.MEDIUM has 258 observations and 3 variables.
 NOTE: The data set WORK.SMALL has 131 observations and 3 variables.
 NOTE: The data set WORK.GOVERNMENT has 53 observations and 3
variables.
 NOTE: The data set WORK.GOODS has 103 observations and 4 variables.
 NOTE: The data set WORK.SERVICES has 157 observations and 4
variables.
 NOTE: DATA statement used (Total process time):
       real time           0.01 seconds
```

```
      cpu time           0.01 seconds


 197        /*#4 Set PDF output*/
 198        filename result
"/folders/myfolders/HW11/dilip.k.lalwani_HW11_output.pdf";
 199        ods pdf file=result bookmarkgen=yes bookmarklist=hide;
 NOTE: Writing ODS PDF output to DISK destination "RESULT", printer
"PDF".
 200        /*#5 Print first 50 and last 50 observations of the
dataset from step 2*/
 201        proc print data=monthly_jobs(firstobs=1 obs=50) noobs;
 202        title "5.1-First 50 Observations from Monthly Jobs Data
Set";

 NOTE: There were 50 observations read from the data set
WORK.MONTHLY_JOBS.
 NOTE: PROCEDURE PRINT used (Total process time):
       real time          0.12 seconds
       cpu time           0.13 seconds

 203        proc print data=monthly_jobs(firstobs=5385 obs=5435)
noobs;

 204        title "5.2-Last 50 Observations from Monthly Jobs Data
Set";

 NOTE: There were 50 observations read from the data set
WORK.MONTHLY_JOBS.
 NOTE: PROCEDURE PRINT used (Total process time):
       real time          0.10 seconds
       cpu time           0.09 seconds

 205        proc print data=monthly_jobs(firstobs=2800 obs=2849)
noobs;

 206        title "5.3-Fifty Observations from Monthly Jobs Data Set
Beginning with #2800";
 207        /*#6 Print selected observations from each of temporary
data sets created from monthly_jobs1617*/

 NOTE: There were 50 observations read from the data set
WORK.MONTHLY_JOBS.
 NOTE: PROCEDURE PRINT used (Total process time):
       real time          0.11 seconds
       cpu time           0.11 seconds
```

```
208         proc print data=small(firstobs=1 obs=30) label;

209         LABEL
210         averagejobs='Average Jobs';
211         title "6a-First 30 Observations of Small Markets";

NOTE: There were 30 observations read from the data set WORK.SMALL.
NOTE: PROCEDURE PRINT used (Total process time):
      real time           0.05 seconds
      cpu time            0.05 seconds

212         proc print data=Medium(firstobs=1 obs=30) label;

213         LABEL
214         averagejobs='Average Jobs';
215         title "6b-First 30 Observations of Medium Markets";

NOTE: There were 30 observations read from the data set WORK.MEDIUM.
NOTE: PROCEDURE PRINT used (Total process time):
      real time           0.06 seconds
      cpu time            0.06 seconds

216         proc print data=large(firstobs=1 obs=30) label;

217         LABEL
218         averagejobs='Average Jobs';
219         title "6c-Large Markets";

NOTE: There were 29 observations read from the data set WORK.LARGE.
NOTE: PROCEDURE PRINT used (Total process time):
      real time           0.06 seconds
      cpu time            0.06 seconds

220         proc print data=goods(firstobs=75 obs=104) noobs label;

221         title "6d-Selected Observations from Goods sector";
222         LABEL
223         averagejobs='Average Jobs'
224         marketsize='Market Size';

NOTE: There were 29 observations read from the data set WORK.GOODS.
NOTE: PROCEDURE PRINT used (Total process time):
      real time           0.05 seconds
      cpu time            0.05 seconds
```

```
225         proc print data=services(firstobs=1 obs=30) label;

226         LABEL
227         averagejobs='Average Jobs'
228         marketsize='Market Size';
229         where marketsize="Small";
230         title "6e-Small Markets in the Services sector";

 NOTE: There were 30 observations read from the data set
WORK.SERVICES.
       WHERE marketsize='Small';
 NOTE: PROCEDURE PRINT used (Total process time):
       real time           0.07 seconds
       cpu time            0.07 seconds

231         proc print data=government label;

232         LABEL
233         averagejobs='Average Jobs'
234         marketsize='Market Size';
235         title "6f-Government sector";
236         /*Print data sets in the WORK library*/

 NOTE: There were 53 observations read from the data set
WORK.GOVERNMENT.
 NOTE: PROCEDURE PRINT used (Total process time):
       real time           0.08 seconds
       cpu time            0.08 seconds

237         proc print data=SASHELP.VTABLE(keep=libname memname crdate
nobs nvar) noobs label;

238         LABEL
239         libname='Library Name'
240         memname='Member Name'
241         crdate='Date Created'
242         nobs='Number of Physical Observations'
243         nvar='Number of Variables';
244         where upcase(libname)="WORK";
245         title "7-Data Sets in the WORK Library";
246
247         run;

 NOTE: Data file JOBSDATA.JOBS2017.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.
 NOTE: There were 7 observations read from the data set
SASHELP.VTABLE.
       WHERE UPCASE(libname)='WORK';
 NOTE: PROCEDURE PRINT used (Total process time):
       real time           0.09 seconds
       cpu time            0.08 seconds


 248         ods pdf close;
 NOTE: ODS PDF printed 14 pages to
/folders/myfolders/HW11/dilip.k.lalwani_HW11_output.pdf.
 249
 250         OPTIONS NONOTES NOSTIMER NOSOURCE NOSYNTAXCHECK;
 263
```