```
1          OPTIONS NONOTES NOSTIMER NOSOURCE NOSYNTAXCHECK;
NOTE: ODS statements in the SAS Studio environment may disable some output features.
69
70         *///*PROJECT 7*///*;
71
72         *Import school 2 final data*;
73         DATA s2f;
74             INFILE '/home/u63559709/sasuser.v94/Week 7/school 2 final.csv' DSD firstobs=2;
75             INPUT ClassID ChildID Gender $ ClassAge $ f1 f2 f3 f4;
76         RUN;

NOTE: The infile '/home/u63559709/sasuser.v94/Week 7/school 2 final.csv' is:
      Filename=/home/u63559709/sasuser.v94/Week 7/school 2 final.csv,
      Owner Name=u63559709,Group Name=oda,
      Access Permission=-rw-r--r--,
      Last Modified=12Oct2023:21:35:34,
      File Size (bytes)=3348

NOTE: 87 records were read from the infile '/home/u63559709/sasuser.v94/Week 7/school 2 final.csv'.
      The minimum record length was 35.
      The maximum record length was 37.
NOTE: The data set WORK.S2F has 87 observations and 8 variables.
NOTE: DATA statement used (Total process time):
      real time           0.00 seconds
      user cpu time       0.00 seconds
      system cpu time     0.00 seconds
      memory              775.46k
      OS Memory           27820.00k
      Timestamp           10/15/2023 04:22:39 AM
      Step Count                    176  Switch Count  2
      Page Faults                   0
      Page Reclaims                 95
      Page Swaps                    0
      Voluntary Context Switches    18
      Involuntary Context Switches  0
      Block Input Operations        0
      Block Output Operations       264


77
78         ***Problem 1***;
79
80         *Part 1*;
81         proc univariate data = s2f;
82             var f1;
83         run;

NOTE: PROCEDURE UNIVARIATE used (Total process time):
      real time           0.03 seconds
      user cpu time       0.04 seconds
      system cpu time     0.00 seconds
      memory              1671.09k
      OS Memory           27820.00k
      Timestamp           10/15/2023 04:22:39 AM
      Step Count                    177  Switch Count  0
      Page Faults                   0
      Page Reclaims                 55
      Page Swaps                    0
      Voluntary Context Switches    0
      Involuntary Context Switches  0
      Block Input Operations        0
      Block Output Operations       16


84
85         proc univariate data = s2f;
86             var f2;
87         run;

NOTE: PROCEDURE UNIVARIATE used (Total process time):
      real time           0.03 seconds
      user cpu time       0.03 seconds
      system cpu time     0.00 seconds
      memory              858.56k
      OS Memory           27820.00k
      Timestamp           10/15/2023 04:22:39 AM
      Step Count                    178  Switch Count  0
      Page Faults                   0
      Page Reclaims                 56
      Page Swaps                    0
      Voluntary Context Switches    0
      Involuntary Context Switches  0
```

```
       Block Input Operations           0
       Block Output Operations          0


88
89         proc univariate data = s2f;
90             var f3;
91         run;

NOTE: PROCEDURE UNIVARIATE used (Total process time):
       real time            0.03 seconds
       user cpu time        0.03 seconds
       system cpu time      0.00 seconds
       memory               806.09k
       OS Memory            27820.00k
       Timestamp            10/15/2023 04:22:39 AM
       Step Count                        179   Switch Count  0
       Page Faults                        0
       Page Reclaims                     54
       Page Swaps                         0
       Voluntary Context Switches         0
       Involuntary Context Switches       0
       Block Input Operations             0
       Block Output Operations           16


92
93         proc univariate data = s2f;
94             var f4;
95         run;

NOTE: PROCEDURE UNIVARIATE used (Total process time):
       real time            0.03 seconds
       user cpu time        0.03 seconds
       system cpu time      0.00 seconds
       memory               809.34k
       OS Memory            27820.00k
       Timestamp            10/15/2023 04:22:39 AM
       Step Count                        180   Switch Count  0
       Page Faults                        0
       Page Reclaims                     55
       Page Swaps                         0
       Voluntary Context Switches         0
       Involuntary Context Switches       0
       Block Input Operations             0
       Block Output Operations           16


96
97         *The variables that are normally distributed are f1, f3, and f4*;
98         *The variables that are right skewed are f2*;
99
100        *Part 2*;
101        ODS SELECT PLOTS;
102        proc univariate data=s2f PLOT;
103            var f3;
104        run;

NOTE: PROCEDURE UNIVARIATE used (Total process time):
       real time            0.11 seconds
       user cpu time        0.04 seconds
       system cpu time      0.00 seconds
       memory               9611.37k
       OS Memory            33632.00k
       Timestamp            10/15/2023 04:22:39 AM
       Step Count                        181   Switch Count  0
       Page Faults                        0
       Page Reclaims                    1625
       Page Swaps                         0
       Voluntary Context Switches       222
       Involuntary Context Switches       0
       Block Input Operations             0
       Block Output Operations          688


105
106        *Part 3*;
107        DATA s2f_updated;
108            SET s2f;
109            difference = f4 - f2;
110        RUN;

NOTE: There were 87 observations read from the data set WORK.S2F.
```

```
NOTE: The data set WORK.S2F_UPDATED has 87 observations and 9 variables.
NOTE: DATA statement used (Total process time):
      real time            0.00 seconds
      user cpu time        0.01 seconds
      system cpu time      0.00 seconds
      memory               963.93k
      OS Memory            32688.00k
      Timestamp            10/15/2023 04:22:39 AM
      Step Count                      182  Switch Count  2
      Page Faults                     0
      Page Reclaims                   140
      Page Swaps                      0
      Voluntary Context Switches      12
      Involuntary Context Switches    0
      Block Input Operations          0
      Block Output Operations         264


111
112        ODS SELECT TestsForNormality TestsForLocation Histogram BoxPlot QQPlot;
113        proc univariate data=s2f_updated PLOTS NORMAL;
114            var difference;
115        run;

WARNING: Output 'QQPlot' was not created.  Make sure that the output object name, label, or path is spelled correctly.  Also,
         verify that the appropriate procedure options are used to produce the requested output object.  For example, verify that
         the NOPRINT option is not used.
WARNING: Output 'BoxPlot' was not created.  Make sure that the output object name, label, or path is spelled correctly.  Also,
         verify that the appropriate procedure options are used to produce the requested output object.  For example, verify that
         the NOPRINT option is not used.
WARNING: Output 'Histogram' was not created.  Make sure that the output object name, label, or path is spelled correctly.  Also,
         verify that the appropriate procedure options are used to produce the requested output object.  For example, verify that
         the NOPRINT option is not used.
NOTE: PROCEDURE UNIVARIATE used (Total process time):
      real time            0.01 seconds
      user cpu time        0.02 seconds
      system cpu time      0.00 seconds
      memory               1044.21k
      OS Memory            32428.00k
      Timestamp            10/15/2023 04:22:39 AM
      Step Count                      183  Switch Count  0
      Page Faults                     0
      Page Reclaims                   83
      Page Swaps                      0
      Voluntary Context Switches      0
      Involuntary Context Switches    0
      Block Input Operations          0
      Block Output Operations         256


116
117        *The mean of 'difference'does not equal zero statistically.*;
118
119        *Part 4*;
120        proc sort data=s2f_updated;
121            by Gender;
122        run;

NOTE: There were 87 observations read from the data set WORK.S2F_UPDATED.
NOTE: The data set WORK.S2F_UPDATED has 87 observations and 9 variables.
NOTE: PROCEDURE SORT used (Total process time):
      real time            0.00 seconds
      user cpu time        0.00 seconds
      system cpu time      0.00 seconds
      memory               926.21k
      OS Memory            32688.00k
      Timestamp            10/15/2023 04:22:39 AM
      Step Count                      184  Switch Count  2
      Page Faults                     0
      Page Reclaims                   116
      Page Swaps                      0
      Voluntary Context Switches      15
      Involuntary Context Switches    0
      Block Input Operations          0
      Block Output Operations         264


123
124        proc univariate data=s2f_updated;
125            var difference;
126            by Gender;
127        run;
```

```
NOTE: PROCEDURE UNIVARIATE used (Total process time):
      real time              0.06 seconds
      user cpu time          0.06 seconds
      system cpu time        0.00 seconds
      memory                 998.15k
      OS Memory              32428.00k
      Timestamp              10/15/2023 04:22:39 AM
      Step Count                      185  Switch Count  0
      Page Faults                     0
      Page Reclaims                   59
      Page Swaps                      0
      Voluntary Context Switches      0
      Involuntary Context Switches    0
      Block Input Operations          0
      Block Output Operations         32


128
129        *Part 5*;
130        ods select Percentiles;
131        ods output Percentiles=work.custom_percentiles;
132        proc univariate data=s2f_updated;
133            var difference;
134            output out=percentiles pctlpre=P_ pctlpts=5 to 100 by 5;
135        run;

WARNING: Output 'Percentiles' was not created.  Make sure that the output object name, label, or path is spelled correctly.  Also,
         verify that the appropriate procedure options are used to produce the requested output object.  For example, verify that
         the NOPRINT option is not used.
WARNING: Output 'Percentiles' was not created.  Make sure that the output object name, label, or path is spelled correctly.  Also,
         verify that the appropriate procedure options are used to produce the requested output object.  For example, verify that
         the NOPRINT option is not used.
NOTE: The data set WORK.PERCENTILES has 1 observations and 20 variables.
NOTE: PROCEDURE UNIVARIATE used (Total process time):
      real time              0.00 seconds
      user cpu time          0.01 seconds
      system cpu time        0.00 seconds
      memory                 1064.68k
      OS Memory              32688.00k
      Timestamp              10/15/2023 04:22:39 AM
      Step Count                      186  Switch Count  2
      Page Faults                     0
      Page Reclaims                   118
      Page Swaps                      0
      Voluntary Context Switches      18
      Involuntary Context Switches    0
      Block Input Operations          0
      Block Output Operations         264


136
137        ods excel file="/home/u63559709/sasuser.v94/Week 7/percentiles.xlsx";
138        proc print data=work.percentiles;
139        run;

NOTE: There were 1 observations read from the data set WORK.PERCENTILES.
NOTE: PROCEDURE PRINT used (Total process time):
      real time              0.02 seconds
      user cpu time          0.02 seconds
      system cpu time        0.00 seconds
      memory                 2136.62k
      OS Memory              38864.00k
      Timestamp              10/15/2023 04:22:39 AM
      Step Count                      187  Switch Count  0
      Page Faults                     0
      Page Reclaims                   396
      Page Swaps                      0
      Voluntary Context Switches      0
      Involuntary Context Switches    0
      Block Input Operations          0
      Block Output Operations         0


140        ods excel close;
NOTE: Writing EXCEL file: /home/u63559709/sasuser.v94/Week 7/percentiles.xlsx
141
142        ***Problem 2***;
143        *Part 1*;
144        data sectiona;
145            input score @@;
146            datalines;

NOTE: SAS went to a new line when INPUT statement reached past the end of a line.
```

```
NOTE: The data set WORK.SECTIONA has 5 observations and 1 variables.
NOTE: DATA statement used (Total process time):
      real time             0.00 seconds
      user cpu time         0.00 seconds
      system cpu time       0.01 seconds
      memory                667.96k
      OS Memory             33452.00k
      Timestamp             10/15/2023 04:22:39 AM
      Step Count                      188  Switch Count  2
      Page Faults                     0
      Page Reclaims                   91
      Page Swaps                      0
      Voluntary Context Switches      15
      Involuntary Context Switches    0
      Block Input Operations          0
      Block Output Operations         264


148          ;
149
150          data sectionb;
151              input score @@;
152              datalines;

NOTE: SAS went to a new line when INPUT statement reached past the end of a line.
NOTE: The data set WORK.SECTIONB has 5 observations and 1 variables.
NOTE: DATA statement used (Total process time):
      real time             0.00 seconds
      user cpu time         0.00 seconds
      system cpu time       0.00 seconds
      memory                681.31k
      OS Memory             33452.00k
      Timestamp             10/15/2023 04:22:39 AM
      Step Count                      189  Switch Count  2
      Page Faults                     0
      Page Reclaims                   94
      Page Swaps                      0
      Voluntary Context Switches      15
      Involuntary Context Switches    0
      Block Input Operations          0
      Block Output Operations         264


154          ;
155
156          proc univariate data = sectiona;
157              var score;
158          run;

NOTE: PROCEDURE UNIVARIATE used (Total process time):
      real time             0.03 seconds
      user cpu time         0.03 seconds
      system cpu time       0.00 seconds
      memory                781.18k
      OS Memory             33452.00k
      Timestamp             10/15/2023 04:22:40 AM
      Step Count                      190  Switch Count  0
      Page Faults                     0
      Page Reclaims                   58
      Page Swaps                      0
      Voluntary Context Switches      0
      Involuntary Context Switches    0
      Block Input Operations          0
      Block Output Operations         16


159
160          proc univariate data = sectionb;
161          var score;
162          run;

NOTE: PROCEDURE UNIVARIATE used (Total process time):
      real time             0.03 seconds
      user cpu time         0.03 seconds
      system cpu time       0.00 seconds
      memory                781.21k
      OS Memory             33452.00k
      Timestamp             10/15/2023 04:22:40 AM
      Step Count                      191  Switch Count  0
      Page Faults                     0
      Page Reclaims                   56
      Page Swaps                      0
      Voluntary Context Switches      0
```

```
                Involuntary Context Switches     0
                Block Input Operations           0
                Block Output Operations          16


163
164        *I agree with the professor, Section A did better than section B on average.*;
165
166        *Part 2*;
167        data BloodPressure;
168            input Test $ Pressure @@;
169            datalines;

NOTE: SAS went to a new line when INPUT statement reached past the end of a line.
NOTE: The data set WORK.BLOODPRESSURE has 12 observations and 2 variables.
NOTE: DATA statement used (Total process time):
      real time            0.00 seconds
      user cpu time        0.00 seconds
      system cpu time      0.00 seconds
      memory               695.06k
      OS Memory            33452.00k
      Timestamp            10/15/2023 04:22:40 AM
      Step Count                        192  Switch Count  2
      Page Faults                       0
      Page Reclaims                     91
      Page Swaps                        0
      Voluntary Context Switches        13
      Involuntary Context Switches      0
      Block Input Operations            0
      Block Output Operations           264


172        ;
173
174        proc ttest;
175            class Test;
176            var Pressure;
177        run;

NOTE: PROCEDURE TTEST used (Total process time):
      real time            0.29 seconds
      user cpu time        0.13 seconds
      system cpu time      0.05 seconds
      memory               10084.34k
      OS Memory            40152.00k
      Timestamp            10/15/2023 04:22:40 AM
      Step Count                        193  Switch Count  48
      Page Faults                       0
      Page Reclaims                     25692
      Page Swaps                        0
      Voluntary Context Switches        1011
      Involuntary Context Switches      0
      Block Input Operations            0
      Block Output Operations           1008


178
179        *The data does indeed provide enough evidence to indicate the mean blood pressure did
180        decrease after the training.*;
181
182        ***Problem 3***;
183        DATA Shows;
184            INPUT Show $ Gender $ Count;
185            DATALINES;

NOTE: The data set WORK.SHOWS has 6 observations and 3 variables.
NOTE: DATA statement used (Total process time):
      real time            0.00 seconds
      user cpu time        0.00 seconds
      system cpu time      0.00 seconds
      memory               670.03k
      OS Memory            34484.00k
      Timestamp            10/15/2023 04:22:40 AM
      Step Count                        194  Switch Count  2
      Page Faults                       0
      Page Reclaims                     93
      Page Swaps                        0
      Voluntary Context Switches        12
      Involuntary Context Switches      0
      Block Input Operations            0
      Block Output Operations           264
```

```
192          ;
193          RUN;
194
195          PROC FREQ DATA=Shows;
196              TABLE Show * Gender/ CHISQ  EXPECT NOCOL NOROW NOPERCENT;
197              WEIGHT Count;
198          RUN;
```

NOTE: There were 6 observations read from the data set WORK.SHOWS.
NOTE: PROCEDURE FREQ used (Total process time):
      real time   0.02 seconds
      user cpu time   0.02 seconds
      system cpu time   0.01 seconds
      memory   1207.75k
      OS Memory   35004.00k
      Timestamp   10/15/2023 04:22:40 AM
      Step Count   195 Switch Count 4
      Page Faults   0
      Page Reclaims   215
      Page Swaps   0
      Voluntary Context Switches   25
      Involuntary Context Switches   0
      Block Input Operations   0
      Block Output Operations   528


```
199
200          *The Chi-Square test p-value is under .05 so you cannot
201          say boys preferences for tv programs vary from girls.*;
202
203          OPTIONS NONOTES NOSTIMER NOSOURCE NOSYNTAXCHECK;
213
```