Program Summary - Assignment4_OutlierDetection_Rajbhandari.sas

Execution Environment

Author:	u63043980
File:	/home/u63043980/Assignment4_OutlierDetection_Rajbhandari.sas
SAS Platform:	Linux LIN X64 3.10.0-1062.9.1.el7.x86_64
SAS Host:	ODAWS04-USW2.ODA.SAS.COM
SAS Version:	9.04.01M7P08062020
SAS Locale:	en_US
Submission Time:	4/4/2023, 12:02:17 PM
Browser Host:	LNSM1-TORONTOXN-142-116-118-179.INTERNET.VIRGINMOBILE.CA
User Agent:	Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/111.0.0.0 Safari/537.36
Application Server:	ODAMID00-USW2.ODA.SAS.COM

Code: Assignment4_OutlierDetection_Rajbhandari.sas

```
/*1.1 Use proc import to load csv data into sas dataset*/

proc import datafile= '/home/u63043980/BAN 130/New Folder/day.csv'
DBMS= csv
out= bike_rental replace;
run;


/*1.2 print the first five observations*/
proc print data= Bike_rental (obs=5);
run;


/*2 use proc means to examine the list of variables, their minimum and maximum*/
title "List of variables, thier minimun and maximum";
proc means data= bike_rental;
run;

title 'Distribution of hum';
  proc sgplot data=bike_rental;
  histogram hum;
  density hum;
run;

title "Box plot of humidity from bike dataset";
proc sgplot data=bike_rental;
   vbox hum;
run;


title "Scatter plot of humidity from bike dataset" ;
proc sgplot data= bike_rental;
    scatter x=hum  y=cnt /;
    xaxis grid;
    yaxis grid;
run;


/* 3. Output the outliers for the variable hum based on 2 standard deviation*/

*Use PROC MEANS to Output means and standard deviations to a data set;
proc means data= bike_rental noprint;
var hum;
output out=Mean_Std(drop=_type_ _freq_)
mean=
std= / autoname;
run;
```

```
title "Outliers for Hum Based on 2 Standard Deviations";
data _null_;
file print;
set bike_rental (keep= instant hum);
***bring in the means and standard deviations;
if _n_ = 1 then set Mean_Std;
if hum lt hum_Mean - 2*hum_StdDev and not missing (hum)
or hum gt hum_Mean + 2*hum_StdDev then put instant= hum=;
run;

/*4.Output the outliers for the variable hum based on the interquantile range method.*/

title "Outliers Based on Interquartile Range for HUM";
proc means data= bike_rental noprint;
var hum;
output out=Tmp
Q1=
Q3=
QRange= / autoname;
run;

data _null_;
file print;
set bike_rental(keep= instant hum);
if _n_ = 1 then set Tmp;
if hum le hum_Q1 - 1*hum_QRange and not missing(hum) or
hum ge hum_Q3 + 1*hum_QRange then
put "Possible Outlier for input " instant "Value of hum is " hum;
run;

/*5. Modify your code of the previous question and
delete the outliers. Give the dataset a new name bike_OutliersRemoved.*/

proc means data= bike_rental noprint;
var hum;
output out=Tmp
Q1=
Q3=
QRange= / autoname;
run;

/* Create new dataset without outliers */
data bike_outliersremoved;
set bike_rental;
if _n_ = 1 then set Tmp;
if  hum ge hum_Q1 - 1*hum_QRange and hum le hum_Q3 + 1*hum_QRange and not missing(hum);
run;

/*!!!!!!! NEED TO CHECK!!!!!!!!!!!*/


/*6.Box plot humidity from bike_outliersRemoved*/

title "Box plot of humidity from bike_outliersremoved dataset";
proc sgplot data= bike_outliersremoved;
   vbox hum;
run;

/*7. Output the outliers for the variable windspeed based on the interquantile range method.*/

title "Outliers Based on Interquartile Range for Windspeed";
proc means data= bike_rental noprint;
var windspeed;
output out=Tmp
Q1=
Q3=
QRange= / autoname;
```

```
run;
```

```
data _null_;
file print;
set bike_rental(keep= instant windspeed);
if _n_ = 1 then set Tmp;
if windspeed le windspeed_Q1 - 1.5*hum_QRange and not missing(windspeed) or
windspeed ge windspeed_Q3 + 1.5*windspeed_QRange then
put "Possible Outlier for instant " instant "Value of windspeed is " windspeed;
run;
```

Log: Assignment4_OutlierDetection_Rajbhandari.sas

Notes (49)

```
1          OPTIONS NONOTES NOSTIMER NOSOURCE NOSYNTAXCHECK;
68
69         /*1.1 Use proc import to load csv data into sas dataset*/
70
71         proc import datafile= '/home/u63043980/BAN 130/New Folder/day.csv'
72         DBMS= csv
73         out= bike_rental replace;
74         run;

NOTE: Unable to open parameter catalog: SASUSER.PARMS.PARMS.SLIST in update mode. Temporary parameter values will be saved to
WORK.PARMS.PARMS.SLIST.
75          /*************************************************************************
76          *   PRODUCT:   SAS
77          *   VERSION:   9.4
78          *   CREATOR:   External File Interface
79          *   DATE:      04APR23
80          *   DESC:      Generated SAS Datastep Code
81          *   TEMPLATE SOURCE:  (None Specified.)
82          *************************************************************************/
83             data WORK.BIKE_RENTAL    ;
84             %let _EFIERR_ = 0; /* set the ERROR detection macro variable */
85             infile '/home/u63043980/BAN 130/New Folder/day.csv' delimiter = ',' MISSOVER DSD lrecl=32767 firstobs=2 ;
86                informat instant best32. ;
87                informat dteday yymmdd10. ;
88                informat season best32. ;
89                informat yr best32. ;
90                informat mnth best32. ;
91                informat holiday best32. ;
92                informat weekday best32. ;
93                informat workingday best32. ;
94                informat weathersit best32. ;
95                informat temp best32. ;
96                informat atemp best32. ;
97                informat hum best32. ;
98                informat windspeed best32. ;
99                informat casual best32. ;
100               informat registered best32. ;
101               informat cnt best32. ;
102               format instant best12. ;
103               format dteday yymmdd10. ;
104               format season best12. ;
105               format yr best12. ;
106               format mnth best12. ;
107               format holiday best12. ;
108               format weekday best12. ;
109               format workingday best12. ;
110               format weathersit best12. ;
111               format temp best12. ;
112               format atemp best12. ;
113               format hum best12. ;
114               format windspeed best12. ;
115               format casual best12. ;
116               format registered best12. ;
117               format cnt best12. ;
```

```
118           input
119                       instant
120                       dteday
121                       season
122                       yr
123                       mnth
124                       holiday
125                       weekday
126                       workingday
127                       weathersit
128                       temp
129                       atemp
130                       hum
131                       windspeed
132                       casual
133                       registered
134                       cnt
135           ;
136           if _ERROR_ then call symputx('_EFIERR_',1);  /* set ERROR detection macro variable */
137           run;

NOTE: The infile '/home/u63043980/BAN 130/New Folder/day.csv' is:
      Filename=/home/u63043980/BAN 130/New Folder/day.csv,
      Owner Name=u63043980,Group Name=oda,
      Access Permission=-rw-r--r--,
      Last Modified=30Mar2023:16:13:54,
      File Size (bytes)=57569

NOTE: 731 records were read from the infile '/home/u63043980/BAN 130/New Folder/day.csv'.
      The minimum record length was 61.
      The maximum record length was 81.
NOTE: The data set WORK.BIKE_RENTAL has 731 observations and 16 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              10537.09k
      OS Memory           29980.00k
      Timestamp           04/04/2023 04:02:10 PM
      Step Count                        29  Switch Count  2
      Page Faults                       0
      Page Reclaims                     200
      Page Swaps                        0
      Voluntary Context Switches        12
      Involuntary Context Switches      0
      Block Input Operations            0
      Block Output Operations           272


731 rows created in WORK.BIKE_RENTAL from /home/u63043980/BAN 130/New Folder/day.csv.



NOTE: WORK.BIKE_RENTAL data set was successfully created.
NOTE: The data set WORK.BIKE_RENTAL has 731 observations and 16 variables.
NOTE: PROCEDURE IMPORT used (Total process time):
      real time           0.11 seconds
      user cpu time       0.06 seconds
      system cpu time     0.03 seconds
      memory              10537.09k
      OS Memory           30240.00k
      Timestamp           04/04/2023 04:02:10 PM
      Step Count                        29  Switch Count  8
      Page Faults                       18
      Page Reclaims                     5554
      Page Swaps                        0
      Voluntary Context Switches        118
      Involuntary Context Switches      0
      Block Input Operations            8704
      Block Output Operations           368


138
139
140        /*1.2 print the first five observations*/
141        proc print data= Bike_rental (obs=5);
```

```
142        run;

NOTE: There were 5 observations read from the data set WORK.BIKE_RENTAL.
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              1318.81k
      OS Memory           25000.00k
      Timestamp           04/04/2023 04:02:10 PM
      Step Count                        30  Switch Count  0
      Page Faults                       0
      Page Reclaims                     400
      Page Swaps                        0
      Voluntary Context Switches        0
      Involuntary Context Switches      0
      Block Input Operations            0
      Block Output Operations           0


143
144
145        /*2 use proc means to examine the list of variables, their minimum and maximum*/
146        title "List of variables, thier minimun and maximum";
147        proc means data= bike_rental;
148        run;

NOTE: There were 731 observations read from the data set WORK.BIKE_RENTAL.
NOTE: PROCEDURE MEANS used (Total process time):
      real time           0.06 seconds
      user cpu time       0.06 seconds
      system cpu time     0.01 seconds
      memory              6683.75k
      OS Memory           30908.00k
      Timestamp           04/04/2023 04:02:10 PM
      Step Count                        31  Switch Count  1
      Page Faults                       0
      Page Reclaims                     1712
      Page Swaps                        0
      Voluntary Context Switches        23
      Involuntary Context Switches      0
      Block Input Operations            0
      Block Output Operations           0


149
150        title 'Distribution of hum';
151          proc sgplot data=bike_rental;
152          histogram hum;
153          density hum;
154        run;

NOTE: PROCEDURE SGPLOT used (Total process time):
      real time           2.30 seconds
      user cpu time       0.06 seconds
      system cpu time     0.01 seconds
      memory              8570.96k
      OS Memory           32560.00k
      Timestamp           04/04/2023 04:02:12 PM
      Step Count                        32  Switch Count  1
      Page Faults                       13
      Page Reclaims                     2674
      Page Swaps                        0
      Voluntary Context Switches        337
      Involuntary Context Switches      0
      Block Input Operations            5952
      Block Output Operations           576

NOTE: There were 731 observations read from the data set WORK.BIKE_RENTAL.

155
156        title "Box plot of humidity from bike dataset";
157        proc sgplot data=bike_rental;
158           vbox hum;
159        run;
```

```
NOTE: PROCEDURE SGPLOT used (Total process time):
      real time           0.17 seconds
      user cpu time       0.03 seconds
      system cpu time     0.00 seconds
      memory              2117.43k
      OS Memory           32560.00k
      Timestamp           04/04/2023 04:02:13 PM
      Step Count                        33  Switch Count  1
      Page Faults                       0
      Page Reclaims                     375
      Page Swaps                        0
      Voluntary Context Switches        169
      Involuntary Context Switches      0
      Block Input Operations            0
      Block Output Operations           416

NOTE: There were 731 observations read from the data set WORK.BIKE_RENTAL.

160
161
162         title "Scatter plot of humidity from bike dataset" ;
163         proc sgplot data= bike_rental;
164         scatter x=hum  y=cnt /;
165         xaxis grid;
166         yaxis grid;
167         run;

NOTE: PROCEDURE SGPLOT used (Total process time):
      real time           0.21 seconds
      user cpu time       0.04 seconds
      system cpu time     0.00 seconds
      memory              2011.87k
      OS Memory           32560.00k
      Timestamp           04/04/2023 04:02:13 PM
      Step Count                        34  Switch Count  1
      Page Faults                       0
      Page Reclaims                     315
      Page Swaps                        0
      Voluntary Context Switches        133
      Involuntary Context Switches      1
      Block Input Operations            0
      Block Output Operations           456

NOTE: There were 731 observations read from the data set WORK.BIKE_RENTAL.

168
169
170         /* 3. Output the outliers for the variable hum based on 2 standard deviation*/
171
172         *Use PROC MEANS to Output means and standard deviations to a data set;
173         proc means data= bike_rental noprint;
174         var hum;
175         output out=Mean_Std(drop=_type_ _freq_)
176         mean=
177         std= / autoname;
178         run;

NOTE: There were 731 observations read from the data set WORK.BIKE_RENTAL.
NOTE: The data set WORK.MEAN_STD has 1 observations and 2 variables.
NOTE: PROCEDURE MEANS used (Total process time):
      real time           0.01 seconds
      user cpu time       0.01 seconds
      system cpu time     0.01 seconds
      memory              7094.25k
      OS Memory           38096.00k
      Timestamp           04/04/2023 04:02:13 PM
      Step Count                        35  Switch Count  3
      Page Faults                       1
      Page Reclaims                     1698
      Page Swaps                        0
      Voluntary Context Switches        35
      Involuntary Context Switches      0
      Block Input Operations            200
      Block Output Operations           264
```

```
179
180         title "Outliers for Hum Based on 2 Standard Deviations";
181         data _null_;
182         file print;
183         set bike_rental (keep= instant hum);
184         ***bring in the means and standard deviations;
185         if _n_ = 1 then set Mean_Std;
186         if hum lt hum_Mean - 2*hum_StdDev and not missing (hum)
187         or hum gt hum_Mean + 2*hum_StdDev then put instant= hum=;
188         run;

NOTE: 25 lines were written to file PRINT.
NOTE: There were 731 observations read from the data set WORK.BIKE_RENTAL.
NOTE: There were 1 observations read from the data set WORK.MEAN_STD.
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              1026.03k
      OS Memory           31916.00k
      Timestamp           04/04/2023 04:02:13 PM
      Step Count                        36  Switch Count  0
      Page Faults                       0
      Page Reclaims                     144
      Page Swaps                        0
      Voluntary Context Switches        0
      Involuntary Context Switches      0
      Block Input Operations            0
      Block Output Operations           0


189
190         /*4.Output the outliers for the variable hum based on the interquantile range method.*/
191
192         title "Outliers Based on Interquartile Range for HUM";
193         proc means data= bike_rental noprint;
194         var hum;
195         output out=Tmp
196         Q1=
197         Q3=
198         QRange= / autoname;
199         run;

NOTE: There were 731 observations read from the data set WORK.BIKE_RENTAL.
NOTE: The data set WORK.TMP has 1 observations and 5 variables.
NOTE: PROCEDURE MEANS used (Total process time):
      real time           0.00 seconds
      user cpu time       0.00 seconds
      system cpu time     0.01 seconds
      memory              7160.81k
      OS Memory           38096.00k
      Timestamp           04/04/2023 04:02:13 PM
      Step Count                        37  Switch Count  3
      Page Faults                       0
      Page Reclaims                     1697
      Page Swaps                        0
      Voluntary Context Switches        30
      Involuntary Context Switches      0
      Block Input Operations            0
      Block Output Operations           264


200
201         data _null_;
202         file print;
203         set bike_rental(keep= instant hum);
204         if _n_ = 1 then set Tmp;
205         if hum le hum_Q1 - 1*hum_QRange and not missing(hum) or
206         hum ge hum_Q3 + 1*hum_QRange then
207         put "Possible Outlier for input " instant "Value of hum is " hum;
208         run;

NOTE: 12 lines were written to file PRINT.
NOTE: There were 731 observations read from the data set WORK.BIKE_RENTAL.
NOTE: There were 1 observations read from the data set WORK.TMP.
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              1027.90k
      OS Memory           31916.00k
      Timestamp           04/04/2023 04:02:13 PM
      Step Count                        38  Switch Count  0
      Page Faults                       0
      Page Reclaims                     107
      Page Swaps                        0
      Voluntary Context Switches        0
      Involuntary Context Switches      0
      Block Input Operations            0
      Block Output Operations           8


209
210         /*5. Modify your code of the previous question and
211         delete the outliers. Give the dataset a new name bike_OutliersRemoved.*/
212
213         proc means data= bike_rental noprint;
214         var hum;
215         output out=Tmp
216         Q1=
217         Q3=
218         QRange= / autoname;
219         run;

NOTE: There were 731 observations read from the data set WORK.BIKE_RENTAL.
NOTE: The data set WORK.TMP has 1 observations and 5 variables.
NOTE: PROCEDURE MEANS used (Total process time):
      real time           0.00 seconds
      user cpu time       0.01 seconds
      system cpu time     0.00 seconds
      memory              7158.78k
      OS Memory           38096.00k
      Timestamp           04/04/2023 04:02:13 PM
      Step Count                        39  Switch Count  3
      Page Faults                       0
      Page Reclaims                     1674
      Page Swaps                        0
      Voluntary Context Switches        35
      Involuntary Context Switches      0
      Block Input Operations            0
      Block Output Operations           264


220
221         /* Create new dataset without outliers */
222         data bike_outliersremoved;
223         set bike_rental;
224         if _n_ = 1 then set Tmp;
225         if  hum ge hum_Q1 - 1*hum_QRange and hum le hum_Q3 + 1*hum_QRange and not missing(hum);
226         run;

NOTE: There were 731 observations read from the data set WORK.BIKE_RENTAL.
NOTE: There were 1 observations read from the data set WORK.TMP.
NOTE: The data set WORK.BIKE_OUTLIERSREMOVED has 719 observations and 21 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              1311.00k
      OS Memory           32176.00k
      Timestamp           04/04/2023 04:02:13 PM
      Step Count                        40  Switch Count  2
      Page Faults                       0
      Page Reclaims                     136
      Page Swaps                        0
      Voluntary Context Switches        10
      Involuntary Context Switches      0
      Block Input Operations            0
      Block Output Operations           264


227
```

```
228        /*!!!!!!! NEED TO CHECK!!!!!!!!!!!*/
229
230
231        /*6.Box plot humidity from bike_outliersRemoved*/
232
233        title "Box plot of humidity from bike_outliersremoved dataset";
234        proc sgplot data= bike_outliersremoved;
235           vbox hum;
236        run;

NOTE: PROCEDURE SGPLOT used (Total process time):
      real time           0.09 seconds
      user cpu time       0.04 seconds
      system cpu time     0.00 seconds
      memory              2460.15k
      OS Memory           32816.00k
      Timestamp           04/04/2023 04:02:13 PM
      Step Count                        41  Switch Count  1
      Page Faults                       0
      Page Reclaims                     327
      Page Swaps                        0
      Voluntary Context Switches        165
      Involuntary Context Switches      0
      Block Input Operations            0
      Block Output Operations           416

NOTE: There were 719 observations read from the data set WORK.BIKE_OUTLIERSREMOVED.

237
238        /*7. Output the outliers for the variable windspeed based on the interquantile range method.*/
239
240        title "Outliers Based on Interquartile Range for Windspeed";
241        proc means data= bike_rental noprint;
242        var windspeed;
243        output out=Tmp
244        Q1=
245        Q3=
246        QRange= / autoname;
247        run;

NOTE: There were 731 observations read from the data set WORK.BIKE_RENTAL.
NOTE: The data set WORK.TMP has 1 observations and 5 variables.
NOTE: PROCEDURE MEANS used (Total process time):
      real time           0.00 seconds
      user cpu time       0.00 seconds
      system cpu time     0.01 seconds
      memory              7160.50k
      OS Memory           38352.00k
      Timestamp           04/04/2023 04:02:13 PM
      Step Count                        42  Switch Count  3
      Page Faults                       0
      Page Reclaims                     1674
      Page Swaps                        0
      Voluntary Context Switches        29
      Involuntary Context Switches      0
      Block Input Operations            0
      Block Output Operations           264


248
249        data _null_;
250        file print;
251        set bike_rental(keep= instant windspeed);
252        if _n_ = 1 then set Tmp;
253        if windspeed le windspeed_Q1 - 1.5*hum_QRange and not missing(windspeed) or
254        windspeed ge windspeed_Q3 + 1.5*windspeed_QRange then
255        put "Possible Outlier for instant " instant "Value of windspeed is " windspeed;
256        run;

NOTE: Variable hum_QRange is uninitialized.
NOTE: 13 lines were written to file PRINT.
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).
      731 at 253:30   731 at 253:35
NOTE: There were 731 observations read from the data set WORK.BIKE_RENTAL.
NOTE: There were 1 observations read from the data set WORK.TMP.
```

```
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              1045.15k
      OS Memory           32172.00k
      Timestamp           04/04/2023 04:02:13 PM
      Step Count                        43  Switch Count  0
      Page Faults                       0
      Page Reclaims                     102
      Page Swaps                        0
      Voluntary Context Switches        0
      Involuntary Context Switches      0
      Block Input Operations            0
      Block Output Operations           0


257
258
259
260
261
262
263
264        OPTIONS NONOTES NOSTIMER NOSOURCE NOSYNTAXCHECK;
274
```

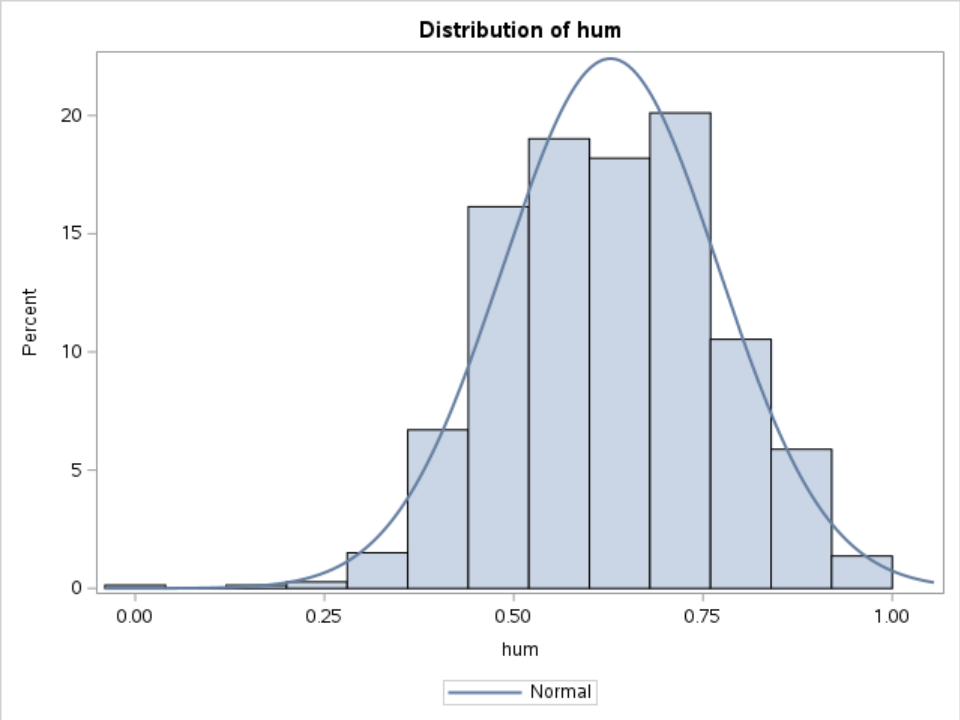
Results: Assignment4_OutlierDetection_Rajbhandari.sas

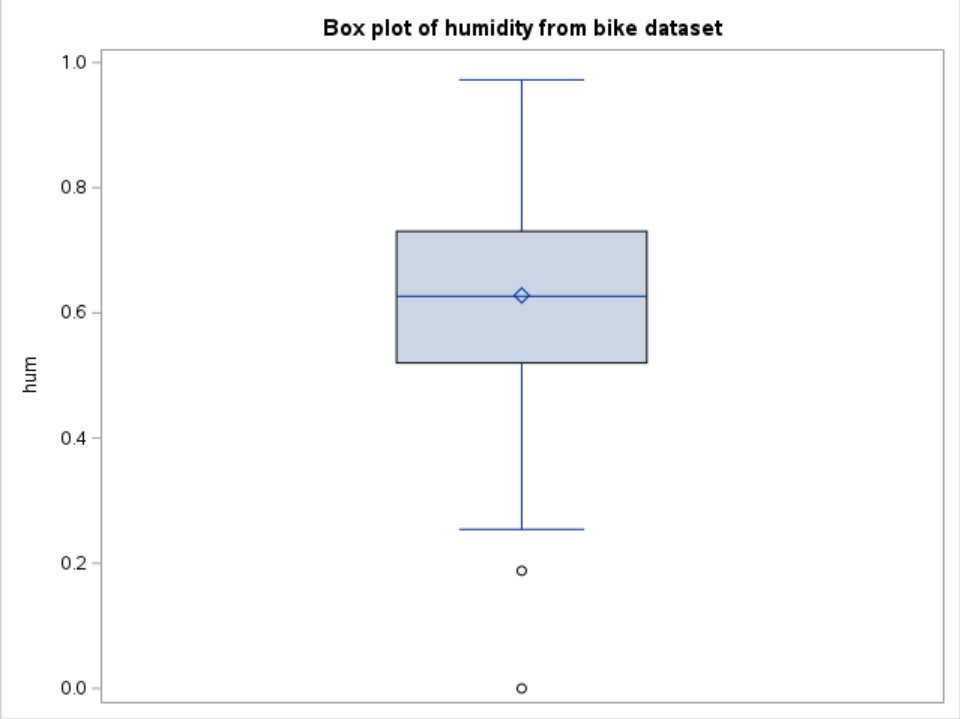
Obs	instant	dteday	season	yr	mnth	holiday	weekday	workingday	weathersit	temp	atemp	hum	windspeed	casual	registered	cnt
1	1	2011-01-01	1	0	1	0	6	0	2	0.344167	0.363625	0.805833	0.160446	331	654	985
2	2	2011-01-02	1	0	1	0	0	0	2	0.363478	0.353739	0.696087	0.248539	131	670	801
3	3	2011-01-03	1	0	1	0	1	1	1	0.196364	0.189405	0.437273	0.248309	120	1229	1349
4	4	2011-01-04	1	0	1	0	2	1	1	0.2	0.212122	0.590435	0.160296	108	1454	1562
5	5	2011-01-05	1	0	1	0	3	1	1	0.226957	0.22927	0.436957	0.1869	82	1518	1600

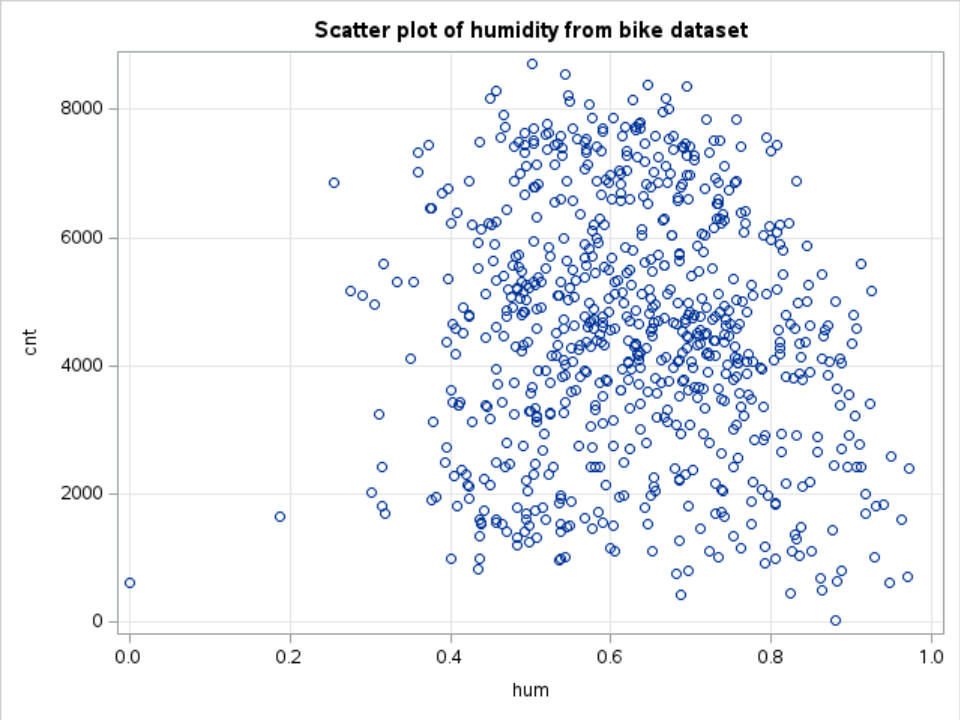
List of variables, thier minimun and maximum

The MEANS Procedure

Variable	N	Mean	Std Dev	Minimum	Maximum
instant	731	366.0000000	211.1658116	1.0000000	731.0000000
dteday	731	18993.00	211.1658116	18628.00	19358.00
season	731	2.4965800	1.1108071	1.0000000	4.0000000
yr	731	0.5006840	0.5003419	0	1.0000000
mnth	731	6.5198358	3.4519128	1.0000000	12.0000000
holiday	731	0.0287278	0.1671547	0	1.0000000
weekday	731	2.9972640	2.0047869	0	6.0000000
workingday	731	0.6839945	0.4652334	0	1.0000000
weathersit	731	1.3953488	0.5448943	1.0000000	3.0000000
temp	731	0.4953848	0.1830510	0.0591304	0.8616670
atemp	731	0.4743540	0.1629612	0.0790696	0.8408960
hum	731	0.6278941	0.1424291	0	0.9725000
windspeed	731	0.1904862	0.0774979	0.0223917	0.5074630
casual	731	848.1764706	686.6224883	2.0000000	3410.00
registered	731	3656.17	1560.26	20.0000000	6946.00
cnt	731	4504.35	1937.21	22.0000000	8714.00


Distribution of hum
Percent
20
15
10
5
0
0.00
0.25
0.50
0.75
1.00
hum
Normal


Box plot of humidity from bike dataset
hum
1.0
0.8
0.6
0.4
0.2
0.0

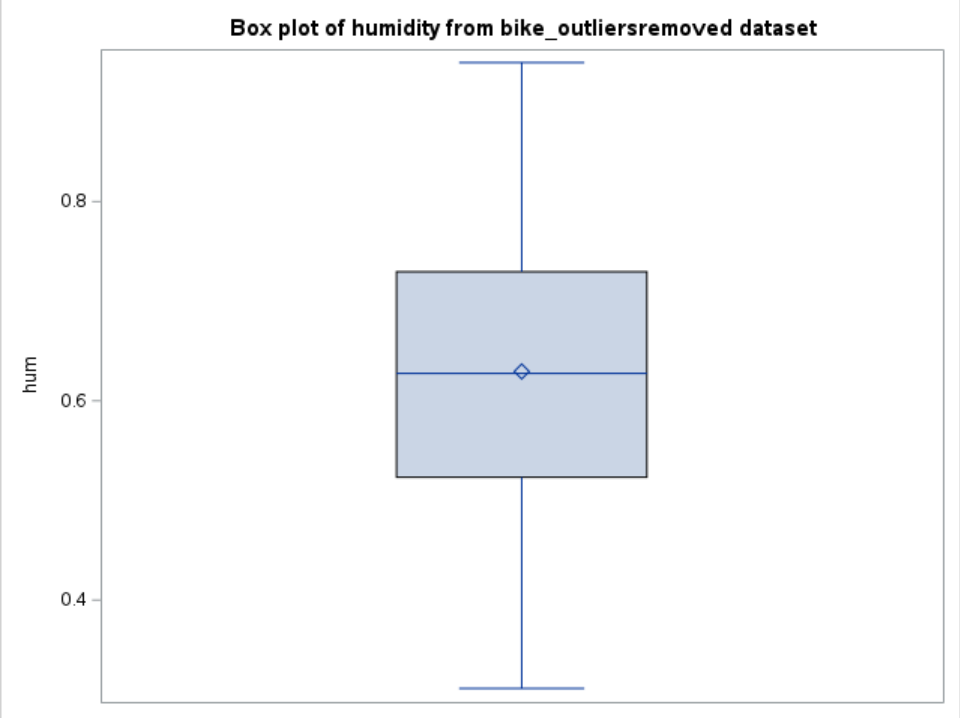


Outliers for Hum Based on 2 Standard Deviations

```
instant=36 hum=0.929167
instant=46 hum=0.314348
instant=50 hum=0.187917
instant=62 hum=0.318333
instant=65 hum=0.948261
instant=69 hum=0
instant=87 hum=0.302174
instant=88 hum=0.314167
instant=90 hum=0.918333
instant=134 hum=0.9225
instant=153 hum=0.305
instant=250 hum=0.917083
instant=251 hum=0.939565
instant=266 hum=0.9725
instant=320 hum=0.93
instant=326 hum=0.9625
instant=340 hum=0.949583
instant=341 hum=0.970417
instant=394 hum=0.31125
instant=452 hum=0.29
instant=463 hum=0.254167
instant=464 hum=0.275833
instant=465 hum=0.3175
instant=678 hum=0.333478
instant=710 hum=0.925
```

Outliers Based on Interquartile Range for HUM

```
Possible Outlier for input 50 Value of hum is 0.187917
Possible Outlier for input 65 Value of hum is 0.948261
Possible Outlier for input 69 Value of hum is 0
Possible Outlier for input 87 Value of hum is 0.302174
Possible Outlier for input 153 Value of hum is 0.305
Possible Outlier for input 266 Value of hum is 0.9725
Possible Outlier for input 326 Value of hum is 0.9625
Possible Outlier for input 340 Value of hum is 0.949583
Possible Outlier for input 341 Value of hum is 0.970417
Possible Outlier for input 452 Value of hum is 0.29
Possible Outlier for input 463 Value of hum is 0.254167
Possible Outlier for input 464 Value of hum is 0.275833
```



Outliers Based on Interquartile Range for Windspeed

```
Possible Outlier for instant 45 Value of windspeed is 0.417908
Possible Outlier for instant 50 Value of windspeed is 0.507463
Possible Outlier for instant 94 Value of windspeed is 0.385571
Possible Outlier for instant 95 Value of windspeed is 0.388067
Possible Outlier for instant 293 Value of windspeed is 0.422275
Possible Outlier for instant 383 Value of windspeed is 0.415429
Possible Outlier for instant 408 Value of windspeed is 0.409212
Possible Outlier for instant 421 Value of windspeed is 0.421642
Possible Outlier for instant 433 Value of windspeed is 0.441563
Possible Outlier for instant 434 Value of windspeed is 0.4148
Possible Outlier for instant 451 Value of windspeed is 0.386821
Possible Outlier for instant 667 Value of windspeed is 0.398008
Possible Outlier for instant 722 Value of windspeed is 0.407346
```