
STAT 480: Homework 5

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September 30, 2018

1	Output Dataset: STAT480 Homework 3 Bonescore2 Data	2
2	21:08 Sunday, September 30, 2018	
3		

4	Obs	singh	ccratio	csi	calcar	bone	dpa	flag1	flag2	flag3	flag4	ourscore
5												
6	1	5	0.47	0.62	9	10	125.7	2	3	2	3	7
7	2	5	0.57	0.67	10	10	135.6	2	2	3	3	7
8	3	5	0.50	0.65	7	10	106.8	2	3	2	2	7
9	4	.	0.50	0.62	8	10	106.4	1	3	2	3	6
10	5	5	0.52	0.64	7	10	114.8	2	3	2	2	7
11	6	5	0.48	0.66	7	10	118.0	2	3	3	2	8
12	7	5	0.54	0.67	6	10	135.1	2	2	3	1	7
13	8	5	0.63	0.65	7	8	125.6	2	2	2	2	6
14	9	4	0.60	0.69	7	8	131.3	1	2	3	2	6
15	10	4	0.53	0.74	10	9	121.3	1	2	3	3	6
16	11	5	0.71	0.55	6	8	89.4	2	1	1	1	4
17	12	5	0.58	0.60	6	10	94.5	2	2	2	1	6
18	13	4	0.55	0.56	7	9	90.4	1	2	2	2	5
19	14	3	0.47	0.66	10	8	150.8	1	3	3	3	7
20	15	3	0.43	.	9	8	155.8	1	3	1	3	5
21	16	5	0.65	0.63	7	8	112.6	2	2	2	2	6
22	17	5	0.67	0.67	6	8	107.1	2	2	3	1	7
23	18	3	0.52	0.59	5	7	73.9	1	3	2	1	6
24	19	3	0.44	0.57	5	7	78.8	1	3	2	1	6
25	20	5	0.64	0.60	5	7	131.0	2	2	2	1	6
26	21	5	0.62	0.61	4	7	128.1	2	2	2	1	6
27	22	5	0.70	0.59	7	7	105.7	2	1	2	2	5
28	23	5	0.72	0.54	7	6	106.6	2	1	1	2	4
29	24	6	0.67	0.53	7	6	150.9	3	2	1	2	6
30	25	6	0.64	0.56	7	7	135.6	3	2	2	2	7
31	26	5	0.94	0.48	6	6	88.9	2	1	1	1	4
32	27	5	0.84	0.48	5	5	85.5	2	1	1	1	4
33	28	5	0.68	0.46	6	5	81.5	2	1	1	1	4
34	29	2	0.75	0.48	4	3	99.3	1	1	1	1	3
35	30	2	0.65	0.49	4	4	96.9	1	2	1	1	4

Listing 2: "Bonescore2 Dataset"

Part C)

The following is the output from printing the Bonescore3 dataset:

1	Output Dataset: STAT480 Homework 3 Bonescore3 Data											3
2	21:08 Sunday, September 30, 2018											
3												
4	Obs	singh	ccratio	csi	calcar	bone	dpa	flag1	flag2	flag3	flag4	ourscore
5												
6	1	5	0.47	0.62	9	10	125.7	2	3	2	3	7
7	2	5	0.57	0.67	10	10	135.6	2	2	3	3	7
8	3	5	0.50	0.65	7	10	106.8	2	3	2	2	7
9	4	.	0.50	0.62	8	10	106.4	.	3	2	3	.
10	5	5	0.52	0.64	7	10	114.8	2	3	2	2	7
11	6	5	0.48	0.66	7	10	118.0	2	3	3	2	8
12	7	5	0.54	0.67	6	10	135.1	2	2	3	1	7
13	8	5	0.63	0.65	7	8	125.6	2	2	2	2	6
14	9	4	0.60	0.69	7	8	131.3	1	2	3	2	6
15	10	4	0.53	0.74	10	9	121.3	1	2	3	3	6
16	11	5	0.71	0.55	6	8	89.4	2	1	1	1	4
17	12	5	0.58	0.60	6	10	94.5	2	2	2	1	6
18	13	4	0.55	0.56	7	9	90.4	1	2	2	2	5
19	14	3	0.47	0.66	10	8	150.8	1	3	3	3	7
20	15	3	0.43	.	9	8	155.8	1	3	.	3	.
21	16	5	0.65	0.63	7	8	112.6	2	2	2	2	6
22	17	5	0.67	0.67	6	8	107.1	2	2	3	1	7
23	18	3	0.52	0.59	5	7	73.9	1	3	2	1	6
24	19	3	0.44	0.57	5	7	78.8	1	3	2	1	6
25	20	5	0.64	0.60	5	7	131.0	2	2	2	1	6
26	21	5	0.62	0.61	4	7	128.1	2	2	2	1	6

27	22	5	0.70	0.59	7	7	105.7	2	1	2	2	5
28	23	5	0.72	0.54	7	6	106.6	2	1	1	2	4
29	24	6	0.67	0.53	7	6	150.9	3	2	1	2	6
30	25	6	0.64	0.56	7	7	135.6	3	2	2	2	7
31	26	5	0.94	0.48	6	6	88.9	2	1	1	1	4
32	27	5	0.84	0.48	5	5	85.5	2	1	1	1	4
33	28	5	0.68	0.46	6	5	81.5	2	1	1	1	4
34	29	2	0.75	0.48	4	3	99.3	1	1	1	1	3
35	30	2	0.65	0.49	4	4	96.9	1	2	1	1	4

Listing 3: "Bonescore3 Dataset"

SAS CODE

```
1  /*****
2  Kyle Salitrik
3  kps168
4  PSU ID: 997543474
5  Sept 14, 2018
6
7  This program covers Homework 5 for STAT 480.
8  *****/
9
10 LIBNAME STAT480 'C:\STAT480\';
11
12 /*** PART A ***/
13 DATA bonescore1;
14     * Read data using list input from raw data file;
15     INFILE 'C:\STAT480\Bonescor2.dat';
16     INPUT singh ccratio csi calcar bone dpa;
17
18     * Calculate flag 1;
19     IF (singh LE 4) THEN flag1=1;
20     ELSE IF (4 LT singh LE 5) THEN flag1=2;
21     ELSE IF (singh GT 5) THEN flag1=3;
22
23     * Calculate flag 2;
24     IF (ccratio GT 0.67) THEN flag2=1;
25     ELSE IF (0.52 LT ccratio LE 0.67) THEN flag2=2;
26     ELSE IF (ccratio LE 0.52) THEN flag2=3;
27
28     * Calculate flag 3;
29     IF (csi LE 0.55) THEN flag3=1;
30     ELSE IF (0.55 LT csi LE 0.65) THEN flag3=2;
31     ELSE IF (csi GT 0.65) THEN flag3=3;
32
33     * Calculate flag 4;
34     IF (calcar LE 6) THEN flag4=1;
35     ELSE IF (6 LT calcar LE 7) THEN flag4=2;
36     ELSE IF (calcar GT 7) THEN flag4=3;
37
38     * Calculate ourscore;
39     ourscore = flag1 + flag2 + flag3;
40 RUN;
41 PROC PRINT data=bonescore1;
42     /* Limit output width to 80 and center output */
43     OPTIONS LS=80 CENTER;
44     title 'Output Dataset: STAT480 Homework 3 Bonescore1 Data';
45 RUN;
46 /*** PART B ***/
47 DATA bonescore2;
48     * Read data using list input from raw data file;
49     INFILE 'C:\STAT480\Bonescor2.dat';
50     INPUT singh ccratio csi calcar bone dpa;
51
52     * Calculate flag 1;
53     IF (singh LE 4) THEN flag1=1;
54     ELSE IF (4 LT singh LE 5) THEN flag1=2;
55     ELSE IF (singh GT 5) THEN flag1=3;
56     ELSE IF (singh EQ .) THEN flag1=.;
57
58     * Calculate flag 2;
59     IF (ccratio GT 0.67) THEN flag2=1;
60     ELSE IF (0.52 LT ccratio LE 0.67) THEN flag2=2;
61     ELSE IF (ccratio LE 0.52) THEN flag2=3;
62     ELSE IF (ccratio EQ .) THEN flag2=.;
63
64     * Calculate flag 3;
```

```

65         IF (csi LE 0.55) THEN flag3=1;
66     ELSE IF (0.55 LT csi LE 0.65) THEN flag3=2;
67     ELSE IF (csi GT 0.65) THEN flag3=3;
68     ELSE IF (csi EQ .) THEN flag3=.;
69
70     * Calculate flag 4;
71         IF (calcar LE 6) THEN flag4=1;
72     ELSE IF (6 LT calcar LE 7) THEN flag4=2;
73     ELSE IF (calcar GT 7) THEN flag4=3;
74     ELSE IF (calcar EQ .) THEN flag4=.;
75
76     * Calculate ourscore;
77     ourscore = flag1 + flag2 + flag3;
78 RUN;
79 PROC PRINT data=bonescore2;
80     /* Limit output width to 80 and center output */
81     OPTIONS LS=80 CENTER;
82     title 'Output Dataset: STAT480 Homework 3 Bonescore2 Data';
83 RUN;
84 /** PART C **/
85 DATA bonescore3;
86     * Read data using list input from raw data file;
87     INFILE 'C:\STAT480\Bonescor2.dat';
88     INPUT singh ccratio csi calcar bone dpa;
89
90     * Calculate flag 1;
91         IF (singh EQ .) THEN flag1=.;
92     ELSE IF (singh LE 4) THEN flag1=1;
93     ELSE IF (4 LT singh LE 5) THEN flag1=2;
94     ELSE IF (singh GT 5) THEN flag1=3;
95
96     * Calculate flag 2;
97         IF (ccratio EQ .) THEN flag2=.;
98     ELSE IF (ccratio GT 0.67) THEN flag2=1;
99     ELSE IF (0.52 LT ccratio LE 0.67) THEN flag2=2;
100    ELSE IF (ccratio LE 0.52) THEN flag2=3;
101
102    * Calculate flag 3;
103        IF (csi EQ .) THEN flag3=.;
104    ELSE IF (csi LE 0.55) THEN flag3=1;
105    ELSE IF (0.55 LT csi LE 0.65) THEN flag3=2;
106    ELSE IF (csi GT 0.65) THEN flag3=3;
107
108    * Calculate flag 4;
109        IF (calcar EQ .) THEN flag4=.;
110    ELSE IF (calcar LE 6) THEN flag4=1;
111    ELSE IF (6 LT calcar LE 7) THEN flag4=2;
112    ELSE IF (calcar GT 7) THEN flag4=3;
113
114    * Calculate ourscore;
115    ourscore = flag1 + flag2 + flag3;
116 RUN;
117 PROC PRINT data=bonescore3;
118     /* Limit output width to 80 and center output */
119     OPTIONS LS=80 CENTER;
120     title 'Output Dataset: STAT480 Homework 3 Bonescore3 Data';
121 RUN;

```

SAS LOG FILE

```

1 1      /*****
2 2      Kyle Salitrik
3 3      kps168
4 4      PSU ID: 997543474

```

```

5 5   Sept 14, 2018
6 6
7 7   This program covers Homework 5 for STAT 480.
8 8   *****/
9 9
10 10  LIBNAME STAT480 'C:\STAT480\';
11 NOTE: Libref STAT480 was successfully assigned as follows:
12     Engine:          V9
13     Physical Name: C:\STAT480
14 11
15 12  /*** PART A ***/
16 13  DATA bonescore1;
17 14      * Read data using list input from raw data file;
18 15      INFILE 'C:\STAT480\Bonescor2.dat';
19 16      INPUT singh ccratio csi calcar bone dpa;
20 17
21 18      * Calculate flag 1;
22 19          IF (singh LE 4)          THEN flag1=1;
23 20      ELSE IF (4 LT singh LE 5)    THEN flag1=2;
24 21      ELSE IF (singh GT 5)        THEN flag1=3;
25 22
26 23      * Calculate flag 2;
27 24          IF (ccratio GT 0.67)    THEN flag2=1;
28 25      ELSE IF (0.52 LT ccratio LE 0.67) THEN flag2=2;
29 26      ELSE IF (ccratio LE 0.52)    THEN flag2=3;
30 27
31 28      * Calculate flag 3;
32 29          IF (csi LE 0.55)        THEN flag3=1;
33 30      ELSE IF (0.55 LT csi LE 0.65) THEN flag3=2;
34 31      ELSE IF (csi GT 0.65)       THEN flag3=3;
35 32
36 33      * Calculate flag 4;
37 34          IF (calcar LE 6)        THEN flag4=1;
38 35      ELSE IF (6 LT calcar LE 7)  THEN flag4=2;
39 36      ELSE IF (calcar GT 7)       THEN flag4=3;
40 37
41 38      * Calculate ourscore;
42 39      ourscore = flag1 + flag2 + flag3;
43 40  RUN;
44
45 NOTE: The infile 'C:\STAT480\Bonescor2.dat' is :
46     Filename=C:\STAT480\Bonescor2.dat,
47     RECFM=V,LRECL=32767,File Size (bytes)=690,
48     Last Modified=30Sep2018:20:38:28,
49     Create Time=30Sep2018:20:25:01
50
51 NOTE: 30 records were read from the infile 'C:\STAT480\Bonescor2.dat'.
52     The minimum record length was 21.
53     The maximum record length was 21.
54 NOTE: The data set WORK.BONESCORE1 has 30 observations and 11 variables.
55 NOTE: DATA statement used (Total process time):
56     real time          0.04 seconds
57     cpu time           0.04 seconds
58
59
60 41  PROC PRINT data=bonescore1;
61 42      /* Limit output width to 80 and center output */
62 43      OPTIONS LS=80 CENTER;
63 44      title 'Output Dataset: STAT480 Homework 3 Bonescore1 Data';
64 45  RUN;
65
66 NOTE: There were 30 observations read from the data set WORK.BONESCORE1.
67 NOTE: PROCEDURE PRINT used (Total process time):
68     real time          0.02 seconds
69     cpu time           0.03 seconds
70

```

```

71
72 46  /** PART B **/
73 47  DATA bonescore2;
74 48      * Read data using list input from raw data file;
75 49      INFILE 'C:\STAT480\Bonescor2.dat';
76 50      INPUT singh ccratio csi calcar bone dpa;
77 51
78 52      * Calculate flag 1;
79 53      IF (singh LE 4) THEN flag1=1;
80 54      ELSE IF (4 LT singh LE 5) THEN flag1=2;
81 55      ELSE IF (singh GT 5) THEN flag1=3;
82 56      ELSE IF (singh EQ .) THEN flag1=.;
83 57
84 58      * Calculate flag 2;
85 59      IF (ccratio GT 0.67) THEN flag2=1;
86 60      ELSE IF (0.52 LT ccratio LE 0.67) THEN flag2=2;
87 61      ELSE IF (ccratio LE 0.52) THEN flag2=3;
88 62      ELSE IF (ccratio EQ .) THEN flag2=.;
89 63
90 64      * Calculate flag 3;
91 65      IF (csi LE 0.55) THEN flag3=1;
92 66      ELSE IF (0.55 LT csi LE 0.65) THEN flag3=2;
93 67      ELSE IF (csi GT 0.65) THEN flag3=3;
94 68      ELSE IF (csi EQ .) THEN flag3=.;
95 69
96 70      * Calculate flag 4;
97 71      IF (calcar LE 6) THEN flag4=1;
98 72      ELSE IF (6 LT calcar LE 7) THEN flag4=2;
99 73      ELSE IF (calcar GT 7) THEN flag4=3;
100 74      ELSE IF (calcar EQ .) THEN flag4=.;
101 75
102 76      * Calculate ourscore;
103 77      ourscore = flag1 + flag2 + flag3;
104 78  RUN;
105
106 NOTE: The infile 'C:\STAT480\Bonescor2.dat' is:
107      Filename=C:\STAT480\Bonescor2.dat,
108      RECFM=V,LRECL=32767,File Size (bytes)=690,
109      Last Modified=30Sep2018:20:38:28,
110      Create Time=30Sep2018:20:25:01
111
112 NOTE: 30 records were read from the infile 'C:\STAT480\Bonescor2.dat'.
113      The minimum record length was 21.
114      The maximum record length was 21.
115 NOTE: The data set WORK.BONESCORE2 has 30 observations and 11 variables.
116 NOTE: DATA statement used (Total process time):
117      real time          0.03 seconds
118      cpu time           0.01 seconds
119
120
121 79  PROC PRINT data=bonescore2;
122 80      /* Limit output width to 80 and center output */
123 81      OPTIONS LS=80 CENTER;
124 82      title 'Output Dataset: STAT480 Homework 3 Bonescore2 Data';
125 83  RUN;
126
127 NOTE: There were 30 observations read from the data set WORK.BONESCORE2.
128 NOTE: PROCEDURE PRINT used (Total process time):
129      real time          0.00 seconds
130      cpu time           0.00 seconds
131
132
133 84  /** PART C **/
134 85  DATA bonescore3;
135 86      * Read data using list input from raw data file;
136 87      INFILE 'C:\STAT480\Bonescor2.dat';

```



```

137 88      INPUT singh ccratio csi calcar bone dpa;
138 89
139 90      * Calculate flag 1;
140 91          IF (singh EQ .)          THEN flag1=.;
141 92      ELSE IF (singh LE 4)          THEN flag1=1;
142 93      ELSE IF (4 LT singh LE 5)    THEN flag1=2;
143 94      ELSE IF (singh GT 5)        THEN flag1=3;
144 95
145 96      * Calculate flag 2;
146 97          IF (ccratio EQ .)          THEN flag2=.;
147 98      ELSE IF (ccratio GT 0.67)    THEN flag2=1;
148 99      ELSE IF (0.52 LT ccratio LE 0.67) THEN flag2=2;
149 100     ELSE IF (ccratio LE 0.52)    THEN flag2=3;
150 101
151 102     * Calculate flag 3;
152 103         IF (csi EQ .)          THEN flag3=.;
153 104     ELSE IF (csi LE 0.55)          THEN flag3=1;
154 105     ELSE IF (0.55 LT csi LE 0.65) THEN flag3=2;
155 106     ELSE IF (csi GT 0.65)          THEN flag3=3;
156 107
157 108     * Calculate flag 4;
158 109         IF (calcar EQ .)          THEN flag4=.;
159 110     ELSE IF (calcar LE 6)          THEN flag4=1;
160 111     ELSE IF (6 LT calcar LE 7)    THEN flag4=2;
161 112     ELSE IF (calcar GT 7)          THEN flag4=3;
162 113
163 114     * Calculate ourscore;
164 115     ourscore = flag1 + flag2 + flag3;
165 116 RUN;
166
167 NOTE: The infile 'C:\STAT480\Bonescor2.dat' is :
168     Filename=C:\STAT480\Bonescor2.dat ,
169     RECFM=V,LRECL=32767,File Size (bytes)=690,
170     Last Modified=30Sep2018:20:38:28 ,
171     Create Time=30Sep2018:20:25:01
172
173 NOTE: 30 records were read from the infile 'C:\STAT480\Bonescor2.dat'.
174     The minimum record length was 21.
175     The maximum record length was 21.
176 NOTE: Missing values were generated as a result of performing an operation on
177     missing values.
178     Each place is given by: (Number of times) at (Line):(Column).
179     1 at 115:22    1 at 115:30
180 NOTE: The data set WORK.BONESCORE3 has 30 observations and 11 variables.
181 NOTE: DATA statement used (Total process time):
182     real time          0.02 seconds
183     cpu time           0.03 seconds
184
185
186 117 PROC PRINT data=bonescore3;
187 118     /* Limit output width to 80 and center output */
188 119     OPTIONS LS=80 CENTER;
189 120     title 'Output Dataset: STAT480 Homework 3 Bonescore3 Data';
190 121 RUN;
191
192 NOTE: There were 30 observations read from the data set WORK.BONESCORE3.
193 NOTE: PROCEDURE PRINT used (Total process time):
194     real time          0.00 seconds
195     cpu time           0.00 seconds

```