
STAT 480: Homework 4

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September 22, 2018

PROBLEM 1

The following is the output from printing the dietdata dataset:

1	Output Dataset: STAT480 Homework 4 Diet Data									1
2	00:54 Saturday, September 22, 2018									
3										
4										
5	Obs	subj	height	wt_init	wt_final	height_m	bmi_init	bmi_		
6								final	bmi_diff	
7	1	007	68	155	150	1.7272	23.6169	22.8551	-0.76184	
8	2	002	72	250	240	1.8288	33.9770	32.6179	-1.35908	
9	3	005	63	240	200	1.6002	42.6030	35.5025	-7.10050	
10	4	001	70	345	298	1.7780	49.6059	42.8480	-6.75790	
11	5	003	65	140	128	1.6510	23.3459	21.3449	-2.00108	
12	6	004	67	225	205	1.7018	35.3137	32.1747	-3.13899	

Listing 1: "BMI Calculation Results"

PROBLEM 2

The following is the output from printing the temp dataset:

1	Output Dataset: STAT480 Homework 4 Arithmetic Data										2
2	00:43 Saturday, September 22, 2018										
3											
4	Obs	abc	def	ghi	jkl	one	two	three	three_2	four	five
5											
6	1	10	5	2	4	17	9	17	11	16.5	2.5

Listing 2: "Arithmetic Calculations"

SAS CODE

```
1  /*****
2  Kyle Salitrik
3  kps168
4  PSU ID: 997543474
5  Sept 23, 2018
6
7  This program covers Homework 4 for STAT 480.
8  *****/
9
10 /*** PROBLEM 1 ***/
11 DATA dietdata;
12     * Read data using column input from raw data file;
13     INFILE 'C:\STAT480\dietdata.dat';
14     INPUT subj $ 1-3 height $ 4-5 wt_init 6-8 wt_final 9-11;
15     height_m = input(height, 2.)*0.0254; * Casts height to numeric value and converts
        to meters;
16     bmi_init = (wt_init/2.2)/(height_m**2); * Calculates initial BMI;
17     bmi_final = (wt_final/2.2)/(height_m**2); * Calculates final BMI;
18     bmi_diff = bmi_final - bmi_init; * Calculate difference of final minus initial
        BMI;
19 RUN;
20
21 PROC PRINT data=dietdata;
22     * Set line size to 80 and page size to 58 and print data;
23     OPTIONS LS=80 PS=58;
24     title 'Output Dataset: STAT480 Homework 4 Diet Data';
25 RUN;
26
27 /*** PROBLEM 2 ***/
28 DATA temp;
29     * Input temp data and run arithmetic calculations;
30     * Three was ambiguous saying "difference between" so I performed both
        calculations ;
31     INPUT abc def ghi jkl;
32     one = abc + def - ghi + jkl; /* 10+5-2+4 = 17*/
33     two = (abc + def) - (ghi + jkl); /*(10+5)-(2+4) = 15-6 = 9 */
34     three = abc + jkl + (def - ghi); /* 10+4+(5-2) = 14+3 = 17 */
35     three_2 = abc + jkl + (ghi - def); /* 10+4+(2-5) = 14-3 = 11 */
36     four = abc + jkl + def / ghi; /* 10+4+5/2 = 14+2.5 = 16.5 */
37     five = (abc + def)/(ghi + jkl); /*(10+5)/(2+4) = 15/6 = 2.5*/
38     DATALINES;
39         10 5 2 4
40     ;
41 RUN;
42
43 PROC PRINT data=temp;
44     * Set line size to 80 and page size to 58 and print data;
45     OPTIONS LS=80 PS=58;
46     title 'Output Dataset: STAT480 Homework 4 Arithmetic Data';
47 RUN;
```

SAS LOG FILE

```
1 1  /*****
2 2  Kyle Salitrik
3 3  kps168
4 4  PSU ID: 997543474
5 5  Sept 23, 2018
6 6
7 7  This program covers Homework 4 for STAT 480.
8 8  *****/
```

```

9 9
10 10  /*** PROBLEM 1 ***/
11 11  DATA dietdata;
12 12      * Read data using column input from raw data file;
13 13      INFILE 'C:\STAT480\dietdata.dat';
14 14      INPUT subj $ 1-3 height $ 4-5 wt_init 6-8 wt_final 9-11;
15 15      height_m = input(height, 2.)*0.0254; * Casts height to numeric value and
converts to meters;
16 16      bmi_init = (wt_init/2.2)/(height_m**2); * Calculates initial BMI;
17 17      bmi_final = (wt_final/2.2)/(height_m**2); * Calculates final BMI;
18 18      bmi_diff = bmi_final - bmi_init; * Calculate difference of final minus
initial BMI;
19 19  RUN;
20
21 NOTE: The infile 'C:\STAT480\dietdata.dat' is:
22      Filename=C:\STAT480\dietdata.dat,
23      RECFM=V,LRECL=32767,File Size (bytes)=76,
24      Last Modified=21Sep2018:15:18:45,
25      Create Time=21Sep2018:15:18:45
26
27 NOTE: 6 records were read from the infile 'C:\STAT480\dietdata.dat'.
28      The minimum record length was 11.
29      The maximum record length was 11.
30 NOTE: The data set WORK.DIETDATA has 6 observations and 8 variables.
31 NOTE: DATA statement used (Total process time):
32      real time          0.03 seconds
33      cpu time           0.03 seconds
34
35
36 20
37 21  PROC PRINT data=dietdata;
38 22      * Set line size to 80 and page size to 58 and print data;
39 23      OPTIONS LS=80 PS=58;
40 24      title 'Output Dataset: STAT480 Homework 4 Diet Data';
41 25  RUN;
42
43 NOTE: There were 6 observations read from the data set WORK.DIETDATA.
44 NOTE: PROCEDURE PRINT used (Total process time):
45      real time          0.03 seconds
46      cpu time           0.03 seconds
47
48
49 26
50 27  /*** PROBLEM 2 ***/
51 28  DATA temp;
52 29      * Input temp data and run arithmetic calculations;
53 30      * Three was ambiguous saying "difference between" so I performed both
54 30 ! calculations ;
55 31      INPUT abc def ghi jkl;
56 32      one = abc + def - ghi + jkl; /* 10+5-2+4 = 17*/
57 33      two = (abc + def) - (ghi + jkl); /*(10+5)-(2+4) = 15-6 = 9 */
58 34      three = abc + jkl + (def - ghi); /* 10+4+(5-2) = 14+3 = 17 */
59 35      three_2 = abc + jkl + (ghi - def); /* 10+4+(2-5) = 14-3 = 11 */
60 36      four = abc + jkl + def / ghi; /* 10+4+5/2 = 14+2.5 = 16.5 */
61 37      five = (abc + def)/(ghi + jkl); /*(10+5)/(2+4) = 15/6 = 2.5*/
62 38      DATALINES;
63
64 NOTE: The data set WORK.TEMP has 1 observations and 10 variables.
65 NOTE: DATA statement used (Total process time):
66      real time          0.01 seconds
67      cpu time           0.00 seconds
68
69
70 40      ;
71 41  RUN;
72 42

```

```
73 43 PROC PRINT data=temp;
74 44     * Set line size to 80 and page size to 58 and print data;
75 45     OPTIONS LS=80 PS=58;
76 46     title 'Output Dataset: STAT480 Homework 4 Arithmetic Data';
77 47 RUN;
78
79 NOTE: There were 1 observations read from the data set WORK.TEMP.
80 NOTE: PROCEDURE PRINT used (Total process time):
81     real time          0.00 seconds
82     cpu time           0.00 seconds
```
