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Chapter 1 & 2 homework

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I.1. Identify which of the following variable names are valid SAS names:

Height	Valid
HeightInCentimeters	Valid
Height_in_centimeters	Valid
Wt-Kg	Invalid
X123y456	Valid
76Trombones	Invalid
MiXeDCasE	Valid

I.2. In the following list, classify each data set name as valid or invalid:

Clinic	Valid
Clinic	Valid
Work	Valid
hyphens-in-the-name	Invalid
123GO	Invalid
Demographics_2006	Valid

II. Given the program here, add the necessary statements to compute four new variables:

a. Weight in kilograms (1 kg = 2.2 pounds). Name this variable WtKg.

b. Height in centimeters (1 inch = 2.54 cm). Name this variable HtCm.

c. Average blood pressure (call it AveBP) equal to the diastolic blood pressure plus one-third the difference of the systolic blood pressure minus the diastolic blood pressure.

d. A variable (call it HtPolynomial) equal to 2 times the height squared plus 1.5 times the height cubed.

```
data prob2;
input ID $
Height /* in inches */
Weight /* in pounds */
SBP /* systolic BP */
DBP /* diastolic BP */;
WtKg = Weight/2.2;
HtCm = Height/2.54;
AveBP = (SBP-DBP)/3;
HtPolynomial = 2*(Height**)+1.5*(Height***);
datalines;
001 68 150 110 70
002 73 240 150 90
003 62 101 120 80
;
title "Listing of PROB2";
proc print data=prob2;
run;
```

Listing of PROB2

Obs	ID	Height	Weight	SBP	DBP	WtKg	HtCm	AveBP	HtPolynomial
1	001	68	150	110	70	68.182	26.7717	13.3333	480896.0
2	002	73	240	150	90	109.091	28.7402	20.0000	594183.5
3	003	62	101	120	80	45.909	24.4094	13.3333	365180.0

III. Class Generated Data (self-introduction):

Write a SAS program for directly reading our class self-introduction data. Do not import an excel or text files. Use a DATALINES statement, which enables you to include the input data directly in the program. You will gather this information directly from the discussion board.

Your variables will be:

- **FRSTNAME - First name**
- **LASTNAME - Last name**
- **MAJOR- Major of the student.**

For consistency, use the first and last names as in the classlist (under the COMMUNICATION tab). Consider only those students that introduced themselves on the discussion board.

Using SAS command, sort your data by FRSTNAME and print it. Obtain a frequency table for MAJOR.

```
data prob3;
LENGTH FRSTNAME $25;
LENGTH LASTNAME $25;
LENGTH MAJOR $45;
infile datalines delimiter=',';
input FRSTNAME $ LASTNAME $ MAJOR $;
datalines;
Nathan, Remmich, Mathematics
Thomas, Pattara, Mathematics
Walter, Citterman, Mathematics
Ali, Lacey, Mathematics
April, Zhang, Accounting
Jon, Sax, Mathematics
Derek, Johanson, Mathematics
Elizabeth, Rust, Mathematics
Nathan, Thirsten, Mathematics
Taylor, Deutsch, Mathematics
Alex, Wieseler, Mathematics
```

```
Jonathan,Hedman,Computer Science
Alexander, Wade, Mathematics
Audrey, Bunge, Mathematics
Riley, Haug, Mathematics
Allison, Bodvig, Mathematics
Allison, Bodvig, Computer Science
Jake, Larson, Mathematics
Hannah, Huss, Mathematics
Jacie, McDonald, Mathematics
Zachary, Shroeder, Mathematics
Josh, Buttke, Mathematics
Paige, Hinton, Mathematics
Shea, Olson, Mathematics
Nicole, Kneip, Mathematics
Tim, Slavik, Mathematics
Drue, Miller, Mathematics
Kory, Heier, Mathematics
Amanda, Peterson, Mathematics
Wesley, Bowen, Mathematics
Courtney, Anderson, Athletic Training
Samuel, Ivanecky, Mathematics
Samuel, Ivanecky, Computer Science
;
title "List of FA17 SAS Students";
proc sort data=prob3;
by FRSTNAME;
run;
proc print data=prob3;
run;
```

```
title "Major Frequencies";

proc freq data=prob3;

tables MAJOR;

run;
```

List of FA17 SAS Students

Obs	FRSTNAME	LASTNAME	MAJOR
1	Alex	Wieseler	Mathematics
2	Alexander	Wade	Mathematics
3	Ali	Lacey	Mathematics
4	Allison	Bodvig	Mathematics
5	Allison	Bodvig	Computer Science
6	Amanda	Peterson	Mathematics
7	April	Zhang	Accounting
8	Audrey	Bunge	Mathematics
9	Courtney	Anderson	Athletic Training
10	Derek	Johanson	Mathematics
11	Drue	Miller	Mathematics
12	Elizabeth	Rust	Mathematics
13	Hannah	Huss	Mathematics
14	Jacie	McDonald	Mathematics
15	Jake	Larson	Mathematics
16	Jon	Sax	Mathematics
17	Jonathan	Hedman	Computer Science
18	Josh	Buttke	Mathematics
19	Kory	Heier	Mathematics
20	Nathan	Remmich	Mathematics
21	Nathan	Thirsten	Mathematics
22	Nicole	Kneip	Mathematics
23	Paige	Hinton	Mathematics
24	Riley	Haug	Mathematics
25	Samuel	Ivanecky	Mathematics
26	Samuel	Ivanecky	Computer Science
27	Shea	Olson	Mathematics
28	Taylor	Deutsch	Mathematics
29	Thomas	Pattara	Mathematics
30	Tim	Slavik	Mathematics
31	Walter	Citterman	Mathematics
32	Wesley	Bowen	Mathematics
33	Zachary	Shroeder	Mathematics

Major Frequencies

The FREQ Procedure

MAJOR	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Accounting	1	3.03	1	3.03
Athletic Training	1	3.03	2	6.06
Computer Science	3	9.09	5	15.15
Mathematics	28	84.85	33	100.00