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Chapter 1 & 2 homework

08.31.2017

**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 |