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/* 2장 연습문제 */
/* 1-1 */

data Ex1;
infile "C:\Users\CBNU\Desktop\energy.txt";
input Region Division State $ Type Expenditures @@;
drop State Expenditures;
proc print;
run;

data Ex2;
infile "C:\Users\CBNU\Desktop\energy.txt";
input Region Division State $ Type Expenditures @@;
keep Region State Expenditures;
proc print;
run;


/* 1-2 */

data Energy_;
infile "C:\Users\CBNU\Desktop\energy.txt";
input Region Division State $ Type Expenditures @@;
label
Region ='지역'
Division ='권역'
State ='주이름'
Type ='사용처'
Expenditures ='소비량'
;
proc print label;
run;


/* 1-3 */

data Energy_3;
set Energy_;
proc format;
 value regfmt 1='Northeast'
              2='South'
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                              3='Midwest'
                              4='west';
  value divfmt 1='New England'
               2='Middle Atlantic'
                              3='Mountain'
                              4='pacific';
  value typetmf 1='주거용'
                2='산업용';
run;
proc print data=Energy_3;
format region regfmt. Division divfmt. Type typetmf. ;
run;


/* 1-4 */

data Energy_Ca_1;
set Energy_;
  if ( Expenditures >= 184) and (Expenditures <= 300) then category = 1;
    if ( Expenditures >= 301) and (Expenditures <= 700) then category =
2;
     if ( Expenditures >= 701) and (Expenditures <= 1500) then category
= 3;
           if ( Expenditures >= 1501) and (Expenditures <= 10000) then
category = 4;
               if ( Expenditures >= 10001) then category = 5;
proc sort data=Energy_Ca_1;
by category;
proc print;
run;

data Energy_Ca_2;
set Energy_;
  if ( Expenditures >= 184) and (Expenditures <= 300) then category = 1;
    if ( Expenditures >= 301) and (Expenditures <= 700) then category =
2;
     if ( Expenditures >= 701) and (Expenditures <= 1500) then category
= 3;
           if ( Expenditures >= 1501) and (Expenditures <= 10000) then
category = 4;
               if ( Expenditures >= 10001) then category = 5;
```

```
proc sort data=Energy_Ca_2;
by category;
proc print;
by category;
run;


/* 1-5 */

data Dwelling;
set Energy_Ca_1;
if (type = 1);
proc print;
title 'Dwelling(type = 1)';
run;

data Indust;
set Energy_Ca_1;
if (type = 2);
proc print;
title 'Indust(type = 2)';
run;


/* 1-6 */

proc sort data=Ex1;
by Region;
proc sort data=Ex2;
by Region;
data Ex3_1;
merge Ex1 Ex2;
by Region;
proc print data=Ex3_1;
title 'merge 가로 결합';
run;

data Ex3_2;
set Ex1;
set Ex2;
proc print data=Ex3_2;
```

```
title 'set 가로 결합';
run;


/* 2-1 */

data sales_;
infile "C:\Users\CBNU\Desktop\Sales.txt";
input Region $ CitySize $ Popuiation Product $ SaleType $ Units NetSales
@@;
retain sum 0;
sum = sum + NetSales;
proc print data=sales_;
run;


/* 2-2 */

data sales_S;
set sales_;
if (CitySize = 'S') ;
retain sum_s 0;
sum_s = sum_s + NetSales;
drop sum;
proc print data=sales_S ;
run;

data sales_M;
set sales_;
if (CitySize = 'M') ;
retain sum_m 0;
sum_m = sum_m + NetSales;
drop sum;
proc print data=sales_M ;
run;

data sales_L;
set sales_;
if (CitySize = 'L') ;
retain sum_l 0;
sum_l = sum_l + NetSales;
```

```
drop sum;
proc print data=sales_L ;
run;


/* 2-3 */

data sales_r;
set sales_;
proc sort data=sales_r nodupkey out=sales_r1;
by Region;
proc rank data=sales_r1 out=sales_r2 ties = high;
/* ties는 기입을 안했을 때 기본값은 mean 이며,high 는 올림, low는 내림을 하여 랭
킹을 표시한다. */
  var NetSales;
  ranks NetSales_R;
proc print data=sales_r2;
run;

data sales_c;
set sales_;
proc sort data=sales_c nodupkey out=sales_c1;
by CitySize;
proc rank data=sales_c1 out=sales_c2;
/* ties는 기입을 안했을 때 기본값은 mean 이며,high 는 올림, low는 내림을 하여 랭
킹을 표시한다. */
  var NetSales;
  ranks NetSales_R;
proc print data=sales_c2;
run;

data sales_p;
set sales_;
proc sort data=sales_p nodupkey out=sales_p1;
by Popuiation;
proc rank data=sales_p1 out=sales_p2;
/* ties는 기입을 안했을 때 기본값은 mean 이며,high 는 올림, low는 내림을 하여 랭
킹을 표시한다. */
  var NetSales;
  ranks NetSales_R;
proc print data=sales_p2;
```

```
run;


/* 2-4 */

data sales_q;
set sales_;
Quantity = NetSales/Units;
proc print;
  format Quantity 10. ; /* round 를 배우지 않아 FORMAT으로 대체함 */
run;

data Retail;
set sales_q;
if (SaleType = 'R');
retain sum_r 0 ;
sum_r = sum_r + Quantity;
proc print;
format sum_r 10.0;
run;

data Whole;
set sales_q;
if (SaleType = 'W');
retain sum_w 0 ;
sum_w = sum_w + Quantity;
proc print;
format sum_w 10.0;
run;


/* 2-5 */

data sales_ps;
set sales_q;
if (Popuiation >= 5000 ) and (Popuiation <=50000 ) then Psize = 1;
  if (Popuiation >= 50001 ) and (Popuiation <=150000 ) then Psize = 2;
    if (Popuiation >= 150001 ) and (Popuiation <=300000 ) then Psize = 3;
         if Popuiation >= 300001 then Psize = 4;
proc print data=sales_ps;
run;
```

```
proc sort data=sales_ps;
by Psize;
proc print data=sales_ps;
by Psize;
run;


/* 2-6 */

data sales_U;
set sales_q;
if (Units = 350) ;
proc print;
run;
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