```
/* x2_1.sas */
/* Purpose:  */

title1 'Example 2.1 (note: analysis on type=cov data)';

data a (type=cov);
  length _type_ $ 8 _name_ $ 8;
  input _type_ _name_ x y z;
cards;
COV X 1 2 2
COV Y 2 5 3
COV Z 2 3 5
;

proc print;
title2 'List of data.';

proc princomp data=a cov;
title2 'Compute eigenvalues and eigenvectors.';

run;
```

```
                 Example 2.1 (note: analysis on type=cov data)                 1
                                List of data.

                     Obs    _type_    _name_    x    y    z

                      1      COV        X       1    2    2
                      2      COV        Y       2    5    3
                      3      COV        Z       2    3    5

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                 Example 2.1 (note: analysis on type=cov data)                 2
                     Compute eigenvalues and eigenvectors.

                             The PRINCOMP Procedure

                            Observations       10000
                            Variables              3


                              Total Variance    11


                      Eigenvalues of the Covariance Matrix

                  Eigenvalue    Difference    Proportion    Cumulative

             1    9.00000000    7.00000000        0.8182        0.8182
             2    2.00000000    2.00000000        0.1818        1.0000
             3    0.00000000                      0.0000        1.0000


                                 Eigenvectors

                            Prin1         Prin2         Prin3

                  x      0.333333      0.000000      0.942809
                  y      0.666667      0.707107      -.235702
                  z      0.666667      -.707107      -.235702
```