```
-------------------------------------------------------------------------------
      name:  <unnamed>
       log:  C:\Users\saiomkark\OneDrive - The University of Chicago\AdvStats\
> PS3\Sai_Omkar_Kandukuri_PS3.log
  log type:  text
 opened on:  22 Oct 2021, 22:33:56

. 
. set obs 50
number of observations (_N) was 0, now 50

. 
. generate p1 = runiform()

. 
. generate x = 1 if p1 <= 0.3
(31 missing values generated)

. generate y = 1 if p1 <= 0.25
(37 missing values generated)

. 
. replace x = 2 if p1 > 0.3 & p1 <= 0.7
(17 real changes made)

. replace x = 3 if p1 > 0.7 & p1 <= 1
(14 real changes made)

. 
. 
. replace y = 2 if p1 > 0.25 & p1 <= 0.4
(9 real changes made)

. replace y = 3 if p1 >0.4 & p1 <= 0.6
(12 real changes made)

. replace y = 4 if p1 > 0.6 & p1 <= 1
(16 real changes made)

. 
. sum x, detail

                            x
-------------------------------------------------------------
      Percentiles      Smallest
 1%             1              1
 5%             1              1
10%             1              1       Obs                  50
25%             1              1       Sum of Wgt.          50

50%             2                      Mean                1.9
                        Largest       Std. Dev.       .814411
75%             3              3
90%             3              3       Variance       .6632653
95%             3              3       Skewness       .1831898
99%             3              3       Kurtosis       1.560473

. sum y, detail

                            y
-------------------------------------------------------------
      Percentiles      Smallest
 1%             1              1
 5%             1              1
10%             1              1       Obs                  50
25%             1              1       Sum of Wgt.          50
```

```
50%            3                       Mean               2.62
                        Largest       Std. Dev.      1.193349
75%            4               4
90%            4               4       Variance       1.424082
95%            4               4       Skewness      -.1784097
99%            4               4       Kurtosis         1.5315

.
. tabulate x y

           |                    y
         x |         1          2          3          4 |     Total
-----------+--------------------------------------------+----------
         1 |        13          6          0          0 |        19
         2 |         0          3         12          2 |        17
         3 |         0          0          0         14 |        14
-----------+--------------------------------------------+----------
     Total |        13          9         12         16 |        50

.
. correlate x y, covariance
(obs=50)

             |        x        y
-------------+------------------
           x |  .663265
           y |       .9  1.42408


.
. pwcorr x y

             |        x        y
-------------+------------------
           x |   1.0000
           y |   0.9260   1.0000

.
.
.
.
.
. clear

.
. set more off

.
.
.
. set seed 18112021

.
. set obs 500
number of observations (_N) was 0, now 500

.
. generate p1 = runiform()

.
```

```
. generate x = 1 if p1 <= 0.3
(357 missing values generated)

. replace x = 2 if p1 > 0.3 & p1 <= 0.7
(200 real changes made)

. replace x = 3 if p1 > 0.7 & p1 <= 1
(157 real changes made)

.
. generate y = 1 if p1 <= 0.25
(375 missing values generated)

. replace y = 2 if p1 > 0.25 & p1 <= 0.4
(72 real changes made)

. replace y = 3 if p1 >0.4 & p1 <= 0.6
(109 real changes made)

. replace y = 4 if p1 > 0.6 & p1 <= 1
(194 real changes made)

.
. sum x, detail

                            x
-------------------------------------------------------------
      Percentiles      Smallest
 1%            1              1
 5%            1              1
10%            1              1       Obs                 500
25%            1              1       Sum of Wgt.         500

50%            2                      Mean              2.028
                        Largest       Std. Dev.      .7748657
75%            3              3
90%            3              3       Variance       .6004168
95%            3              3       Skewness      -.0481971
99%            3              3       Kurtosis       1.670152

. sum y, detail

                            y
-------------------------------------------------------------
      Percentiles      Smallest
 1%            1              1
 5%            1              1
10%            1              1       Obs                 500
25%          1.5              1       Sum of Wgt.         500

50%            3                      Mean              2.744
                        Largest       Std. Dev.      1.212189
75%            4              4
90%            4              4       Variance       1.469403
95%            4              4       Skewness       -.345174
99%            4              4       Kurtosis       1.545386

.
.
. tabulate x y

           |                    y
         x |         1          2          3          4 |     Total
-----------+--------------------------------------------+----------
         1 |       125         18          0          0 |       143
         2 |         0         54        109         37 |       200
         3 |         0          0          0        157 |       157
-----------+--------------------------------------------+----------
     Total |       125         72        109        194 |       500
```

```
.
. correlate x y, covariance
(obs=500)

             |        x        y
-------------+------------------
           x |  .600417
           y |  .858886   1.4694


.
. pwcorr x y

             |        x        y
-------------+------------------
           x |   1.0000
           y |   0.9144   1.0000

.
.
.
.
.
. clear

.
. set more off

.
.
.
. set seed 18112021

.
. set obs 10000
number of observations (_N) was 0, now 10,000

.
. generate p1 = runiform()

.
. generate y = 1 if p1 <= 0.25
(7,495 missing values generated)

. generate x = 1 if p1 <= 0.3
(6,991 missing values generated)

. replace y = 2 if p1 > 0.25 & p1 <= 0.4
(1,467 real changes made)

. replace y = 3 if p1 >0.4 & p1 <= 0.6
(2,086 real changes made)

. replace x = 2 if p1 > 0.3 & p1 <= 0.7
(4,020 real changes made)

. replace y = 4 if p1 > 0.6 & p1 <= 1
(3,942 real changes made)

. replace x = 3 if p1 > 0.7 & p1 <= 1
(2,971 real changes made)
```

```
.
.
.
.
.
. sum x, detail

                            x
-------------------------------------------------------------
      Percentiles      Smallest
 1%            1              1
 5%            1              1
10%            1              1       Obs              10,000
25%            1              1       Sum of Wgt.      10,000

50%            2                      Mean             1.9962
                        Largest       Std. Dev.      .7733339
75%            3              3
90%            3              3       Variance       .5980454
95%            3              3       Skewness       .0065246
99%            3              3       Kurtosis       1.672305

. sum y, detail

                            y
-------------------------------------------------------------
      Percentiles      Smallest
 1%            1              1
 5%            1              1
10%            1              1       Obs              10,000
25%            1              1       Sum of Wgt.      10,000

50%            3                      Mean             2.7465
                        Largest       Std. Dev.      1.216053
75%            4              4
90%            4              4       Variance       1.478786
95%            4              4       Skewness      -.3424367
99%            4              4       Kurtosis       1.532367

.
.
. tabulate x y

           |                    y
         x |         1          2          3          4 |     Total
-----------+--------------------------------------------+----------
         1 |     2,505        504          0          0 |     3,009
         2 |         0        963      2,086        971 |     4,020
         3 |         0          0          0      2,971 |     2,971
-----------+--------------------------------------------+----------
     Total |     2,505      1,467      2,086      3,942 |    10,000

.
. correlate x y, covariance
(obs=10,000)

             |        x        y
-------------+------------------
           x |  .598045
           y |  .847621  1.47879
```

```
.
. pwcorr x y

             |        x        y
-------------+------------------
           x |   1.0000
           y |   0.9013   1.0000

.
.
. log close
      name:  <unnamed>
       log:  C:\Users\saiomkark\OneDrive - The University of Chicago\AdvStats\
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