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      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, 21:27:32

```

```

. 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
5%                1
10%               1      Obs          50
25%               1      Sum of Wgt.    50

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

```

```

. sum y, detail

```

```

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

```

```

50%          3          Largest      Mean          2.62
75%          4          Std. Dev.    1.193349
90%          4          Variance     1.424082
95%          4          Skewness     -.1784097
99%          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
75%               3    Largest      3
90%               3          3    Mean          2.028
95%               3          3    Std. Dev.     .7748657
99%               3          3    Variance     .6004168
                                Skewness    -.0481971
                                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
75%               4    Largest      4
90%               4          4    Mean          2.744
95%               4          4    Std. Dev.     1.212189
99%               4          4    Variance     1.469403
                                Skewness    -.345174
                                Kurtosis     1.545386

```

```

.
.
. tabulate x y

```

```

-----+-----+-----+-----+-----+-----
              |           y
              |           1           2           3           4 |
-----+-----+-----+-----+-----+-----
x |           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		

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\
```

```
> PS3\Sai_Omkar_Kandukuri_PS3.log
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log type: text
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closed on: 22 Oct 2021, 21:27:32
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