```
R version 4.3.1 (2023-06-16 ucrt) -- "Beagle Scouts"
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Platform: x86_64-w64-mingw32/x64 (64-bit)

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  Natural language support but running in an English locale

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Type 'demo()' for some demos, 'help()' for on-line help, or
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Type 'q()' to quit R.

[Previously saved workspace restored]

> rm(list = ls())
> x0 <- c(103.4,172.9,103.8,174,196.9,39.1,22.3,52.7,14.8,73.5,80.5,2.2,53.3,84.9,4.9,25.3,85.2,5
4.2,0,46.7,83.6,42.9,0,129.1,78.9,52.6,63.7,103.1,160,230.6,41.7,58.8,171,165.9,101.8,17.2,86.6,1
38.8,33.2,21.7,99.6,28.7,0.6,51.3,64.9,2.4,36.5,139.1,44.8,5.2,97.6,121.8,2.4,4.6,30.8,44.3,0,8,3
4.7,0,0,0,0.6,3.5,0.4,20.4,6.3,19.5,25.3,130,56.2,156.4,41.5,11.3,42.2,100.8,6.8,7.2,123.7,83.5,1
.4,77,80.9,18.8,12.4,89.2,72.1,1.2,3.2,64.9,40.8,0,0,68.4,26,0,6.8,75.7,23.6,0,50.7,102.8,60.2,98
.2,4.1,0,178.7,200,22.7,74.7,27.2,63.8,31.7,4.6,100.8,71.4,11.2,20.4,73.6,102.2,14.8,63.9,142.1,2
6.5,124.8,76.4,56.5,100.3,78.9,2,55.3,107.5,91,31.9,59.4,77.1,35.1,137,113.2,112,55.7,70,135.5,21
.5,39.3,4.4,7.6,14,0,6.5,2.6,27,93.2,0.6,36.2,71,62.2,0,112.8,77.2,4.3,26,73.7,67.6,176,169.8,160
.4,1.4,105,69,53.9,109.4,105.3,138.3,29.5,68.9,76.8,50.9,0,65.3,51.5,4.8,10.4,174.8,102.8,0.2,25,
101,19.8,7.3,157.1,72.4,2.6,16.8,64,0,0.6,46.5,66.7,9.2,23.9,0,1.8,73.2,12.4,19.8,109.4,32.8,112.
7,95.2,71.1,66.9,118.3,32.3,42.2,58.3,35.5,18.4,37.9,98.2,0,7.2,82.5,5.1,0,23.1,71,0,0,72.2,51.9,
0,6,53.9,72.2,24.4,0,3.6,99.8,22.7,12.4,102,107.6,54.4,5.4,169.7,88.2,89.5,10.2,139.9,103,14.5,17
.8,39.9,12.7,0.4,64.7,4.6,0.2,14.5,20.8,1.6,0,61.1,7.3,6,7,4.6,7.4,16.2,0.8,0.8,5.2,0.8,3.4,1.8,0
,20.2,0.6,0,23.7,123.1,57.3,41.9,46.4,5.4,59.9,92.4,130.1,8.4,0,16.2,25.1,0,3.7,1.5,12.4,0,4.4,4.
2)
> x1 <- c(35.5,0.2,9.2,0,0,0,0,0,0,0,0,2.6,0.4,1.4,0.4,29.4,2.5,45.5,138.2,75.3,181.1,36.9,89.1,1
60.5,38.3,36.5,42.3,69,53.6,0,17.6,109.9,25.3,0,9.2,39.3,1.2,0,75.1,2.6,1.6,13.4,6.7,39.9,58.5,11
0.9,12.5,3.1,26.9,74.6,6,0,7.2,18.2,0,0,50.6,45.5,13.3,61.6,7.6,48.5,22.2,58.5,2.7,2.8,8.7,4.1,0.
2,48.4,19.6,1.2,1,53.9,68.1,0,13,28.9,28.1,1,6.4,20.6,1.8,3.8,5.1,12.8,0.2,4,0,0,0,0,2.6,2,0.8,23
.2,66,75.4)
> x <- c(x0,x1)
> y0 <- c(0.7545,0.66425,0.5295,0.9925,0.8965,0.34,0.42125,0.428,0.0295,0.058,0.24025,0.00025,0.0
005,0.00075,0,0,0.00225,0.001,0,0.0335,0.3845,0.0915,0.0025,0.97325,0.958,0.56625,0.7915,0.72225,
0.98575,0.29325,0.6115,0.05125,0.0895,0.95,0.97525,0.00175,0.01175,0.91675,0.6285,0,0.01825,0.000
5,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0.00625,0,0,0.115,0.49925,0,0,0.19175,0.33275,0.5
1125,0.955,0.08275,0.17,0.84725,0.99325,0.00025,0.03475,0.59575,0.4295,0,0.01475,0.05775,0.01275,
0,0.00025,0,0,0,0.002,0.00025,0,0.00825,0.2465,0.01975,0.00075,0.69625,0.93525,0.9245,0.58375,0.7
17,0.42325,0.60225,0.968,0.49625,0.39175,0.8625,0.8135,0.05025,0.01875,0.67125,0.17225,0,0,0.0062
5,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0.014,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0.001,0.288,0.0005,0,
0.874,0.826,0.00025,0.0055,0.96,0.17175,0.0555,0.0115,0.019,0,0,0,0,0,0,0,0,0,0.0015,0,0,0.058,0.
0105,0,0.01525,0.81125,0.4345,0.001,0.22525,0.93875,0.11875,0.06,0.94775,0.10675,0.0005,0.03225,0
.00525,0,0,0,0.04275,0,0.00225,0,0,0.00025,0.032,0.00225,0.00125,0.0115,0.227,0.4545,0.72325,0.93
2,0.6155,0.0295,0.55075,0.778,0.166,0.0095,0.1925,0.7515,0.00125,0.0005,0.0745,0.0905,0,0,0.014,0
,0,0,0,0,0.00075,0.0005,0.00125,0.00025,0.047,0.10125,0.04675,0.00175,0.98975,0.95825,0.9465,0.
60775,0.99,0.66125,0.8605,0.90725,0.99975,0.6885,0.00025,0.16775,0.71425,0.12775,0.0005,0.64075,0
.87975,0.01475,0.00875,0.927,0.68725,0,0.45225,0.7405,0.0955,0.00825,0.00275,0,0.0005,0.00425,0.0
025,0,0.0025,0.13675,0,0,0.007,0.05375,0,0,0.03825,0.28075,0.04075,0,0,0,0,0.00025,0,0,0,0,0,0,0,
0.003,0,0,0)
> y1 <- c(0.0005,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0.061,0,0,0.0005,0.00025,0.15175,0.1365,0.7725,0.978
75,0.5015,0.01675,0.02125,0.1655,0.00025,0,0.00025,0,0,0,0,0,0,0,0,0,0,0,0,0.01275,0.02475,0.0415
,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0.0005,0.0115,0,0,0.00025,0,0,0.18075,0.14275,0,0.004,0.
307,0.00075,0,0,0.00375,0,0,0,0,0,0,0,0,0,0,0,0.01625,0.008,0.052,0.322,0.89775)
> y <- c(y0,y1)
> cor.test(x, y,alternative = "two.sided", method = "spearman", exact=FALSE )

        Spearman's rank correlation rho

data:  x and y
```

```
S = 5513178, p-value < 2.2e-16
alternative hypothesis: true rho is not equal to 0
sample estimates:
      rho
0.4753052

> # ---- Confidence interval ----
> if(!"RVAideMemoire" %in% installed.packages()){install.packages("RVAideMemoire")}
> library(RVAideMemoire)
*** Package RVAideMemoire v 0.9-83-3 ***
> spearman.ci(x,y)

        Spearman's rank correlation

data:  x and y
1000 replicates

95 percent confidence interval:
 0.3935608 0.5535030
sample estimates:
      rho
0.4753052

>
```