Package explanation

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From a master data set, a selected number of values are randomly picked. For example, in the following table, we see 10 groups of 3 values. Each value was randomly selected from a general pool. Notice that the amount of groups and values are options in the function.

Table 1: Groups of randomlly selected values. Each group represents 3 values randomlly selected from a 51 observations data set.

X1	X2	X3	X4	X5	X6	X7	X8	X9	X10
64	63	64	41	63	60	56	61	67	67
68	56	58	54	54	62	62	67	61	64
65	62	60	65	64	64	67	56	67	67

Once groups are formed, the function will run a parametric on side t.test (or non parametric). The selection between those two statistical analysis is optional in the function. Confidence intervals (99%, 95% and 90%) are also options to take, however t.test and 95% are the default values. Finally, the function will ask you for a "truth value" to witch you are comparing your samples. For a 99% CI non-parametric t.test comparing to a truth value of 50 (mu=50), code looks something like this:

if (test == "w.test" & ci == "0.99"){

```
Score<- apply(x, 2, wilcox.test, alternative = "two.sided"...
mu = 50, paired = FALSE, var.equal = FALSE, conf.level = 0.99)
```

}

Once the statistical tests are carried out, the function will arrange the tests in two groups: one with statistical p value >0.05 and one with statistical p value < 0.05. Finally, a table will be returned from the actual function.

```
library(psim)
Table<-psim(Data,1,5,60,100)
```

Table 2: Results of psim from Citizen Science data unsing 5 socres per group. 100 groups compared to a truth value of 60

Significant	No_significant
16	84