

Rand__treatments.R

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```
# Rand_treatments.R
# Random assignment of Example 2 treatments

# Load necessary libraries
library(plyr)

# Read in data set
tttdata <- read.table(header=T,colClasses=c("factor","factor"),text="
nitrogen water
40 125
40 125
40 125
40 125
40 250
40 250
40 250
40 250
40 375
40 375
40 375
40 375
80 125
80 125
80 125
80 125
80 250
80 250
80 250
80 250
80 375
80 375
80 375
80 375
120 125
120 125
120 125
120 125
120 250
120 250
120 250
120 250
120 375
120 375
120 375
120 375
")
```

```
# Generate a uniform random variable
tttdata <- transform(tttdata,u=runif(dim(tttdata)[1]))
```

```
# Original order of treatments
tttdata
```

```
##      nitrogen water      u
## 1         40    125 0.287764219
## 2         40    125 0.301742461
## 3         40    125 0.845989788
## 4         40    125 0.738183371
## 5         40    250 0.090848588
## 6         40    250 0.903524004
## 7         40    250 0.191640181
## 8         40    250 0.681606060
## 9         40    375 0.224858403
## 10        40    375 0.542065916
## 11        40    375 0.796596350
## 12        40    375 0.799760530
## 13        80    125 0.683558705
## 14        80    125 0.955095974
## 15        80    125 0.328814761
## 16        80    125 0.001379971
## 17        80    250 0.398869662
## 18        80    250 0.086657446
## 19        80    250 0.811149434
## 20        80    250 0.819492767
## 21        80    375 0.707224090
## 22        80    375 0.747642646
## 23        80    375 0.601372289
## 24        80    375 0.737213701
## 25       120    125 0.611880529
## 26       120    125 0.462384349
## 27       120    125 0.982663219
## 28       120    125 0.700260823
## 29       120    250 0.444880785
## 30       120    250 0.915093032
## 31       120    250 0.967145698
## 32       120    250 0.231831603
## 33       120    375 0.241670795
## 34       120    375 0.887352676
## 35       120    375 0.209624938
## 36       120    375 0.673716036
```

```
# Sort treatments by value of u
tttsort <- arrange(tttdata,u)
```

```
# Randomly shuffled treatments
tttsort
```

```
##      nitrogen water      u
## 1         80    125 0.001379971
## 2         80    250 0.086657446
## 3         40    250 0.090848588
## 4         40    250 0.191640181
```

## 5	120	375	0.209624938
## 6	40	375	0.224858403
## 7	120	250	0.231831603
## 8	120	375	0.241670795
## 9	40	125	0.287764219
## 10	40	125	0.301742461
## 11	80	125	0.328814761
## 12	80	250	0.398869662
## 13	120	250	0.444880785
## 14	120	125	0.462384349
## 15	40	375	0.542065916
## 16	80	375	0.601372289
## 17	120	125	0.611880529
## 18	120	375	0.673716036
## 19	40	250	0.681606060
## 20	80	125	0.683558705
## 21	120	125	0.700260823
## 22	80	375	0.707224090
## 23	80	375	0.737213701
## 24	40	125	0.738183371
## 25	80	375	0.747642646
## 26	40	375	0.796596350
## 27	40	375	0.799760530
## 28	80	250	0.811149434
## 29	80	250	0.819492767
## 30	40	125	0.845989788
## 31	120	375	0.887352676
## 32	40	250	0.903524004
## 33	120	250	0.915093032
## 34	80	125	0.955095974
## 35	120	250	0.967145698
## 36	120	125	0.982663219