

randcoords.R

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# randcoords.R
# Generate random sampling coordinates

# Load necessary libraries
library(ggplot2)

# Generate n random coordinates along a c m transect
# Sample size n
n <- 20
# Uniform random variable with a=0, b=c
c <- 100
x <- runif(n,0,c)

# Print results
x

## [1] 44.047098 2.222444 49.062894 66.073131 15.874738 77.387714 90.293871
## [8] 24.825620 3.421082 88.956211 77.884073 10.435407 3.713543 92.419834
## [15] 31.201644 36.829652 33.979795 74.912451 87.558912 30.788319

# Generate n random coordinates within a 200 x 100 m area
n <- 200
c_x <- 200
c_y <- 100
x <- runif(n,0,c_x)
y <- runif(n,0,c_y)

# Make data frame for ggplot2
xydata <- as.data.frame(cbind(x,y))

# Print first 25 coordinates
xydata[1:25,]

##           x           y
## 1  36.300372 15.589958
## 2   3.942008 69.571346
## 3  23.168720 13.511706
## 4  28.963973 50.523832
## 5   6.971132  5.440034
## 6 121.007039 57.784589
## 7   4.023849 25.863150
## 8 114.686314 95.060515
## 9  79.261215 51.985867
## 10 183.474332 28.426091
## 11 192.527191 20.348921
## 12  99.795220 74.857825
## 13  62.387038 99.799408
## 14  49.954711 23.805323
```

```
## 15 129.526015 63.890796
## 16 10.047153 98.641339
## 17 110.098371 9.527863
## 18 46.328718 50.843343
## 19 139.344049 29.127085
## 20 55.221331 14.428898
## 21 62.955870 88.984174
## 22 177.453814 39.843422
## 23 134.030812 66.164936
## 24 41.627868 42.449175
## 25 90.850206 70.257444
```

```
# Plot the values
ggplot(xydata,aes(x,y))+
  geom_point(color="red",size=3)+
  ggtitle("Random sampling coordinates for rectangle")
```

