**INPUT :**

#make this example reproducible

set.seed(1)

#create simple function to generate random last names

randomNames <- function(n=5000){do.call(paste0,replicate(5,sample(LETTERS,n,TRUE),FALSE))}

#create data frame

df <- data.frame(last\_name=randomNames(500),gpa=rnorm(500,mean=82,sd=3))

#view first six rows of data frame

head(df)

#define function to obtain systematic sample

obtain\_sys = function(N,n)

{

k= ceiling(N/n)

r= sample(1:k,1)

seq(r,r+k\*(n-1),k)

}

#obtain systematic sample

sys\_sample\_df = df[obtain\_sys(nrow(df),100),]

#view first six rows of data frame

head(sys\_sample\_df)

#view dimensions of data frame

dim(sys\_sample\_df)

**OUTPUT:**

> head(df)

last\_name gpa

1 YLGRG 74.66755

2 DCVUK 80.74210

3 GZXSE 80.89685

4 ARZOG 80.31026

5 BNVRR 77.83073

6 WMWJM 80.10269

> head(sys\_sample\_df)

last\_name gpa

5 BNVRR 77.83073

10 SBTFE 81.51290

15 VPJTO 80.63059

20 OVQCE 83.80557

25 NLJRM 83.35642

30 YMCZO 82.31994

> dim(sys\_sample\_df)

[1] 100 2