Create an m x n matrix with replicate(m, rnorm(n)) with m=10 column vectors of n=10 elements each,

constructed with rnorm(n), which creates random normal numbers.

> View(mydframe)

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> m=10; n=10;

> mymat<-replicate(m, rnorm(n)) # create matrix of normal random numbers

> df=data.frame(mymat)

> View(df)

> system.time(for (i in 1:m) {

+ for (j in 1:n) {

+ df[i,j]<-df[i,j] + 10\*sin(0.75\*pi)

+ }

+ }

+ )

Then we transform it into a dataframe (thus 10 observations of 10 variables) and perform an algebraic

operation on each element using a nested for loop: at each iteration, every element referred by the two

indexes is incremented by a sinusoidal function, compare the vectorized and non-vectorized form of creating the solution and report the system time differences.

m=10; n=10;

> mymat<-replicate(m, rnorm(n))

> df1=data.frame(mymat)

> system.time(df1<-df + 10\*sin(0.75\*pi))