```r
set.seed(2)


#create matrix
mf_1<- replicate(10,rnorm(10))
Mf1

#transform into data frame
df_1= data.frame(mat_1)
df_1<- df_1 + 10*sin(0.75*pi)


#non-vectorized form
set.seed(2)
#create matrix
mat_1<- replicate(10,rnorm(10))
#transform into data frame
df_1= data.frame(mat_1)


for(i in 1:10){
  for(j in 1:10){
    df_1[i,j]<- df_1[i,j] + 10*sin(0.75*pi)
    print(df_1)
    }
}


#time difference


system.time(
      df_1[i,j]<- df_1[i,j] + 10*sin(0.75*pi)
)


system.time(
  for(i in 1:10){
  for(j in 1:10){
    df_1[i,j]<- df_1[i,j] + 10*sin(0.75*pi)
   }
  }
 )
```