

```

#=====
#                               Using R: Generating data and advanced density plots
#=====

#-----
#(a) Create a data frame df with 500 rows and 4 variables: a, b, c and, d ...
a <- rnorm(500, mean=13)
b <- rexp(500, rate=0.8)+5
c <- rlnorm(500, meanlog=0)+15
d <- runif(500, min=6, max=14)
df <- data.frame(a,b,c,d)

library(reshape2)
df2 <- melt(df, variable.name = "groupVar", value.name = "value")
#-----
#(b) Using df2, plot the densities of each distribution overlaid on each ...
library(ggplot2)
ggplot(df2, aes(x=value, fill=groupVar)) +
  geom_density(alpha=0.45) +
  labs(x = "Value", title = "Densities for Different Type of Random Variables")

```

