########### RUN THE FOLLOWING TO GENERATE DATA ##############

n.groups <- 3

n.sample <- 10

n <- n.groups\* n.sample

x <- rep(1:n.groups, rep(n.sample, n.groups))

pop <- factor(x, labels = c("Montpellier","Paris","Leon"))

shrub.M <- sort(runif(n.sample,0,1))

shrub.P <- sort(runif(n.sample,0,1))

shrub.L <- sort(runif(n.sample,0,1))

shrub <- c(shrub.M,shrub.P,shrub.L)

N <- round(runif(n,10,50))

Xmat <- model.matrix(~pop\*shrub)

#print(Xmat,dig=2)

beta.vec <- c(-4,1,2,1,2,6)

lin.pred <- Xmat[,]%\*%beta.vec

exp.p <- exp(lin.pred)/(1+exp(lin.pred))

C <- rbinom(n=n, size=N, prob=exp.p)

rodents <- as.data.frame(cbind(shrub,C,N,pop))

rodents$pop <- factor(rodents$pop)

levels(rodents$pop) <- c("Montpellier","Paris","Leon")

#### Do not chage anything above this line

####### Data for students ########

# C == location with capture

# N == total number of locations