**The program (R):**  
 # import the library to test the normality of the distribution  
library(nortest)  
  
size = 100000  
  
u = runif(size)  
v = runif(size)  
  
x=rep(0,size)  
y=rep(0,size)  
  
for (i in 1:size){  
  x[i] = sqrt(-2\*log(u[i]))\*cos(2\*pi\*v[i])  
  y[i] = sqrt(-2\*log(u[i]))\*sin(2\*pi\*v[i])  
}  
  
#a test for normality  
lillie.test(c(x,y))  
  
#plot the estimation of the density  
plot(density(c(x,y)))

**Second code**

myrnorm<-function (n)

{

theta <- runif(n, 0, 2 \* pi)

rsq <- rexp(n, 0.5)

x <- sqrt(rsq) \* cos(theta)

x

}