```
histnorm <- function(x)
{
  # make a histogram of the variable x
  stdev <- sd(x)
  average <- mean(x)
  bins <- sqrt(length(x))
  binsize <- (max(x)-min(x))/bins
  #binsize <- IQR(x)/2
  mymin <- min(x)-2*stdev
  mymax <- max(x)+ 2*stdev
  #make a red histogram with the normal curve
  mybins <- seq(mymin, mymax, binsize)
  hist(x, col="turquoise", freq=FALSE, breaks=mybins, xlim=c(mymin, mymax))
  # freq=FALSE ensures the area under the histogram=1
  # generate normally distributed data with "average" and "stdev"
  z <- seq(mymin, mymax,length=10000)
  y<- dnorm(z, average, stdev)
  lines(z,y, lwd=1,col="red") # plot the normal curve
}
histnorm(x)
```