Untitled

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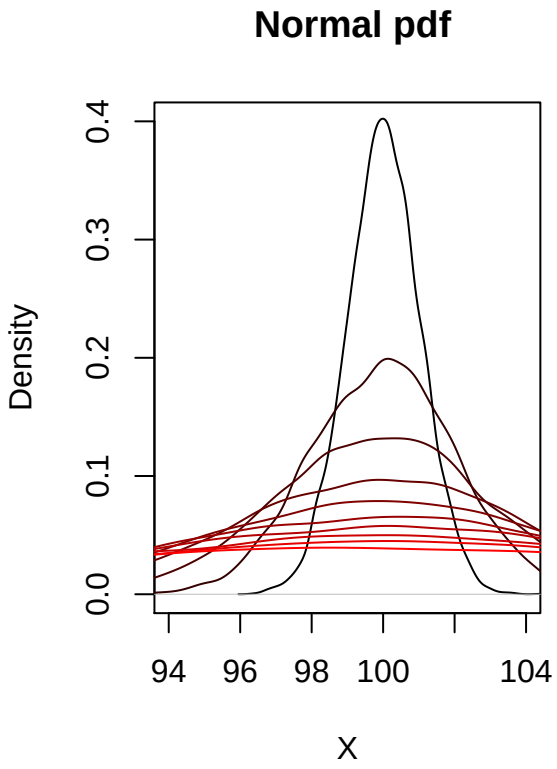
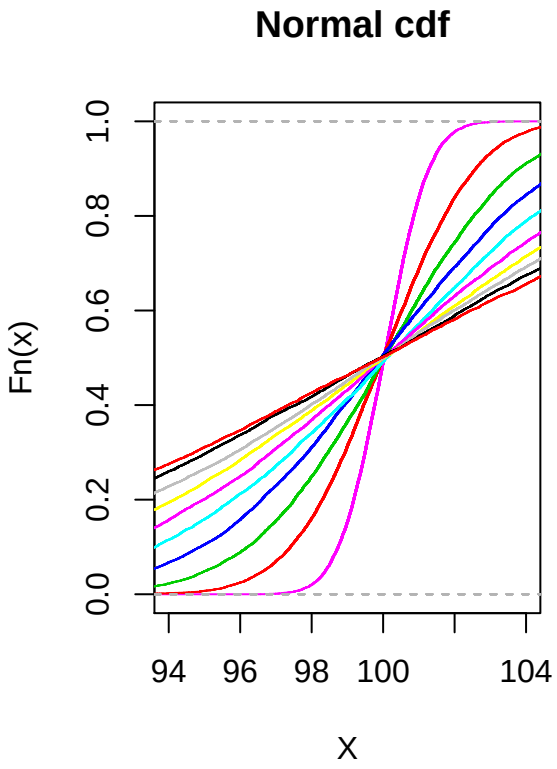
I want to simulate 10000 random observation from normal distribution with mean 100 and the standard deviation(sd) which vary for each data from 1 t0 10 and then plot both pdf and cdf. In order to do this,I use my function which is function.change() , then I need to use loop to change the sd in each argument and by using rgb in my code I can change the color of each plot.This is done in the following R codes.

```
#name the function distribution.change()
distribution.change<-function(n,m,sd=sd){
  n<-10000
  X<-rnorm(n,m,sd)
  return(X)
}
#pdf of normal
par(mfrow=c(1,2))
for(i in 1:10){
  f<-distribution.change(10000,100,sd=i)
  if(i==1){
    plot(density(f),col=rgb(0,0,0),xlab = "X",main = " Normal pdf",xlim=c(94,104),ylim=c(0,0.4))

  }else{
    lines(density(f),col=rgb(i/10,0,0))
  }

}

#cdf of normal
for(i in 1:10){
  f<-distribution.change(10000,100,i)
  if(i==1){
    plot(ecdf(f),col=rgb(1,0,i),xlab = "X",main = " Normal cdf",xlim=c(94,104),ylim=c(0,1))

  }else{
    lines(ecdf(f),col=i)
  }

}
```


Normal pdf
Density
0.0
0.1
0.2
0.3
0.4
94
96
98
100
104
X


Normal cdf
Fn(x)
0.0
0.2
0.4
0.6
0.8
1.0
94
96
98
100
104
X