Lecture Code

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Contents

This notebook contains all code presented in lectures and some experimental additions which I make myself. The notebook will be split into sections and subsections for each lecture and topic respectively.

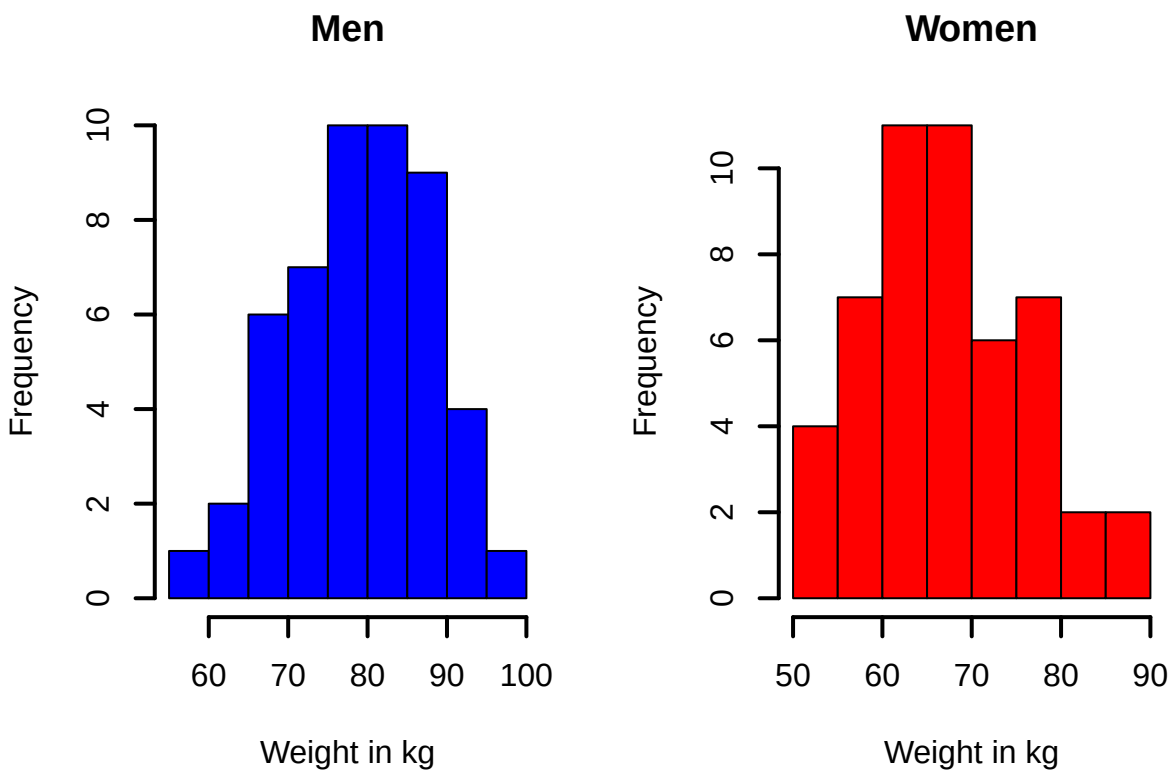
1 Introduction

1.1 Random Variables

Simple introduction to random variables using the weight of Belgian males and females in kgs.

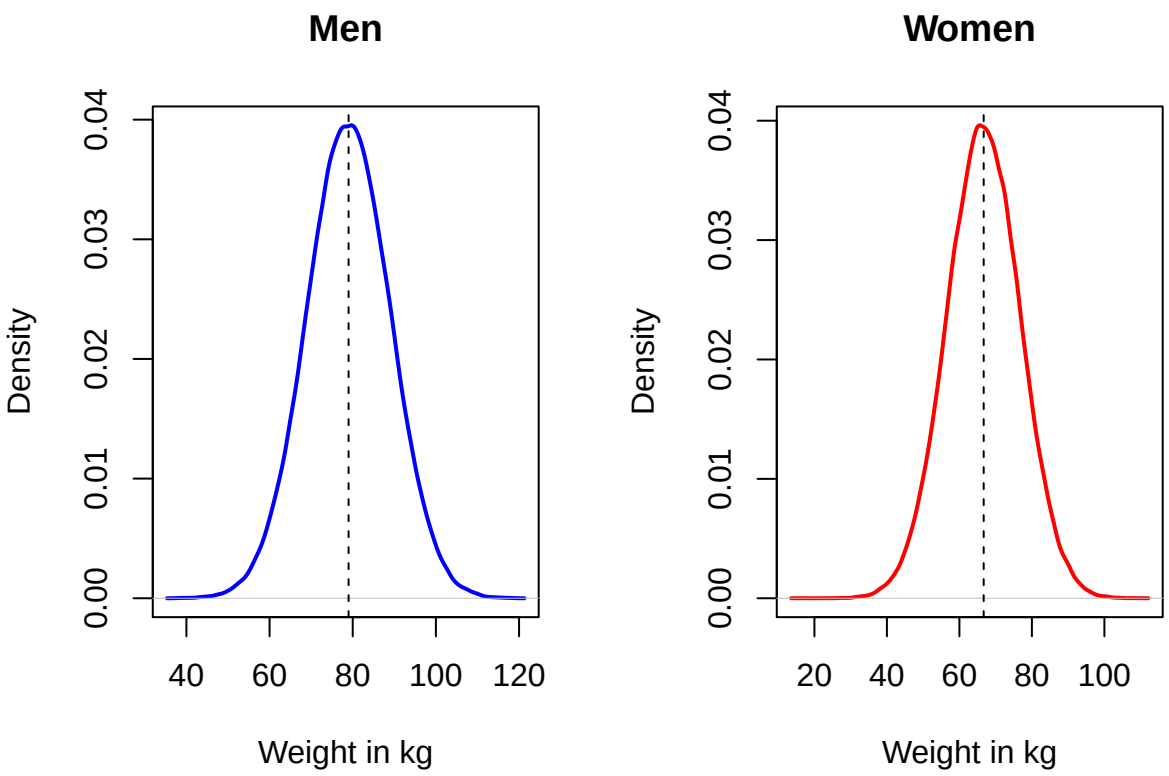
```
# Male: sample 50 values from a univariate normal distribution with mean = 79 and std = 10
par(mfrow = c(1,2))
weight_male = rnorm(50, mean=79, sd=10)
hist(weight_male, xlab="Weight in kg", main="Men", lwd=2, col="blue")

# Female: sample 50 values from a univariate normal distribution with mean = 66.7 and std = 10
weight_female = rnorm(50, mean=66.7, sd=10)
hist(weight_female, xlab="Weight in kg", main="Women", lwd=2, col="red")
```




```r
#plot densities
#Male: sample 100000 values from a univariate normal distribution with mean=79 and std=10
par(mfrow=c(1,2))
weight_male = rnorm(100000, mean=79, sd=10)
dens_weight_male = density(weight_male)
plot(dens_weight_male, xlab="Weight in kg", main="Men", lwd=2, col="blue")
abline(v=79, lty="dashed")

#Female: sample 100000 values from a univariate normal distribution with mean=66.7 and std=10
weight_female = rnorm(100000, mean=66.7, sd=10)
dens_weight_female = density(weight_female)
plot(dens_weight_female, xlab="Weight in kg", main="Women", lwd=2, col="red")
abline(v=66.7, lty="dashed")
```


Men
Density
0.00
0.01
0.02
0.03
0.04
40
60
80
100
120
Weight in kg
Women
Density
0.00
0.01
0.02
0.03
0.04
20
40
60
80
100
Weight in kg