# Tree Analisys

*Ana Cecilia Montes & Ayra Reyla*

*2 october 2015*

## Introduction

In this assisment, we analyse the characteristic of both Black Cherry Trees and Loblobly Pine Trees combining two different dataframes built-in R Studio. The first data frame cointans information about the growth of Loblolly trees. This specie is common in the Southern US. According to the data, loblolly pine tress has on average 32.3644048 fts (see Table 1). The second data frame provides measurements of the girth, height and volume of black cherry trees, also native tree in North America. This specie are on average two times bigger than Loblolly trees. Their hight on average is ‘r mean(trees$Height, na.rm = TRUE) fts (see Table 2). ###Table 1.Loblolly trees summary Statistics

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##    3.46   10.47   34.00   32.36   51.36   64.10
```

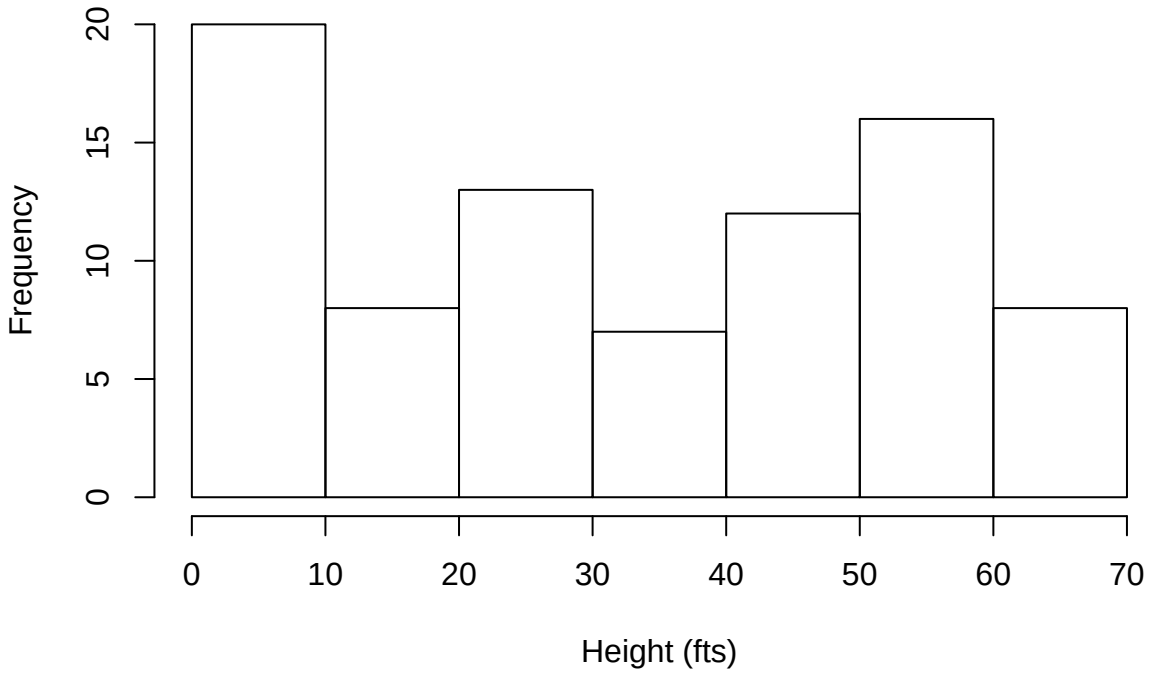
**Table 2. Cherry trees summary Statistics**

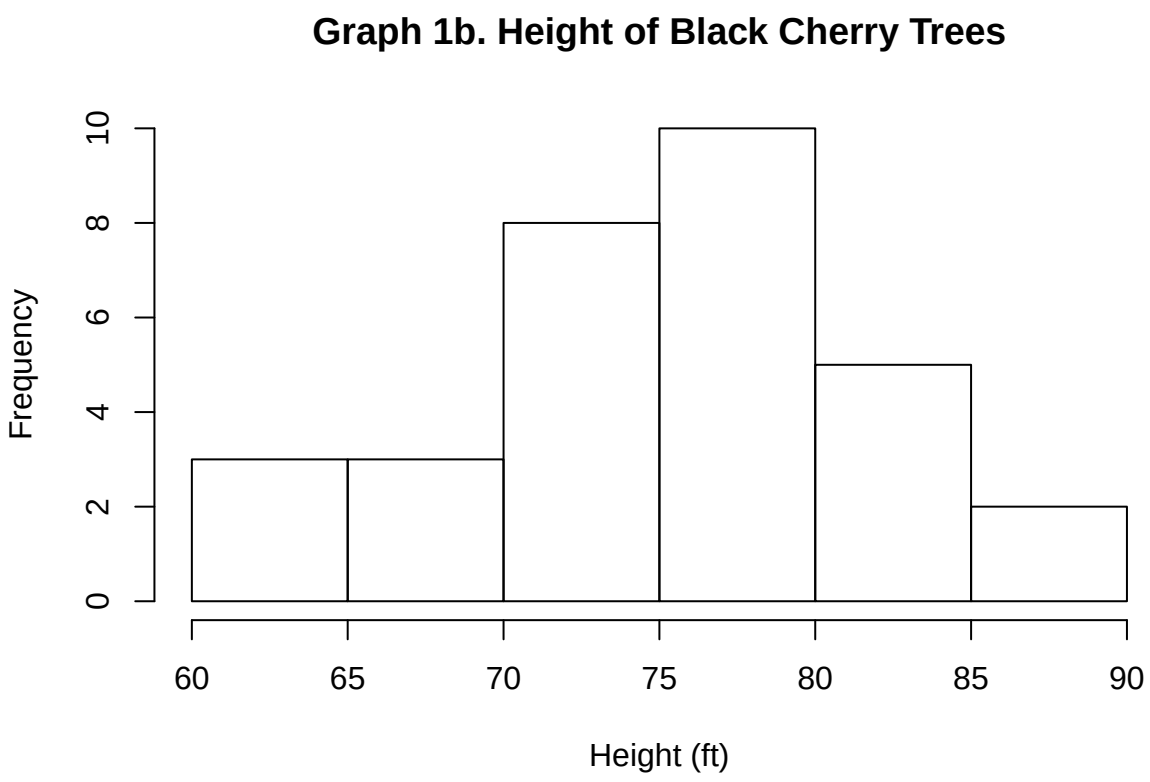
```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##      63      72      76      76      80      87
```

## Tree Height Distribution

A major diference between Loblolly and Cherry is the height distribution. While, Lobloly trees height can range from 3 to 70 fts, for Cherry trees the height ranges from 60 to 90 fts. We observe that the variance of loblolly tree’s is much higher than cherry trees. Lobloly tree’s variance is equal to 427.3979334, while for Cherry tree’s height is 40.6. Moreover, the standard deviation of the first is 20.6736048, while the standard deviation of second is 6.3718129. Moreover, We observe that Black Cherry Trees’ height follows a normal distribution. This is not the case for Loblolly trees’ height. ###Graph 1. Histogram

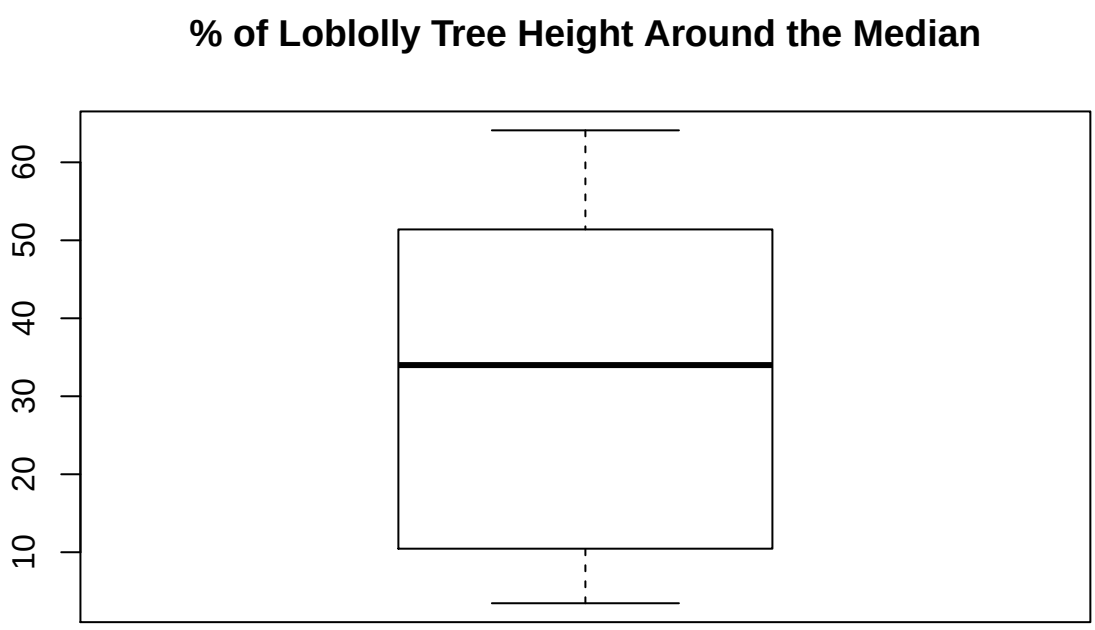
**Graph 1a. Histogram of Loblolly Pine Tree height**

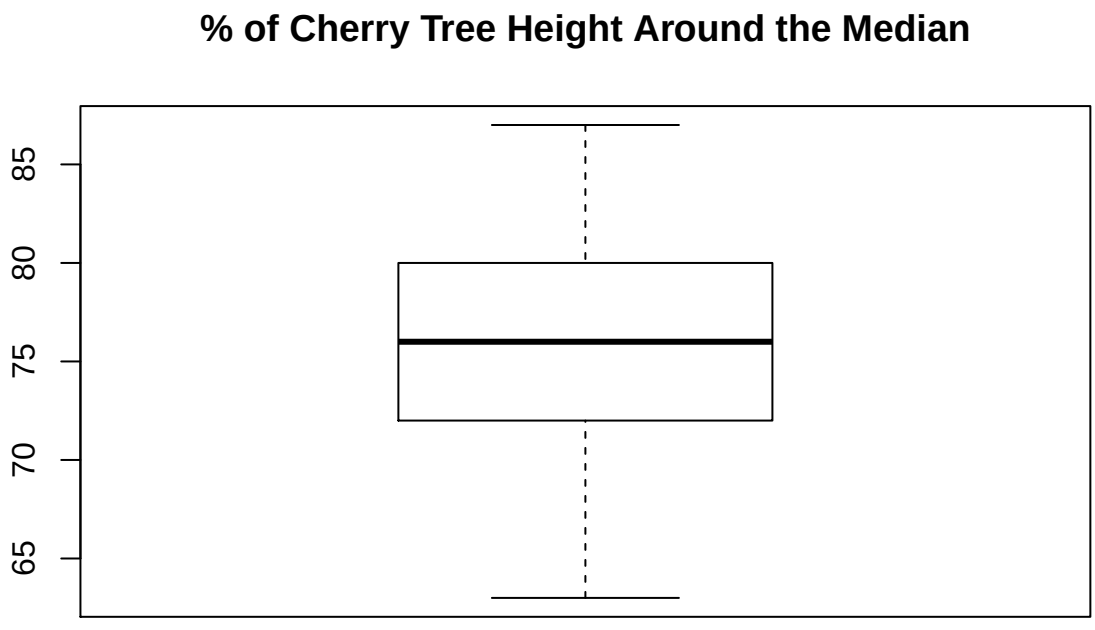





## Box Plots

Box plots or whisker plots graphically ilustrates the groups of numerical data through quartiles. The bottom and top of the box are always the first and third quartiles and the band inside the box is the second quartile or the median. The box plots shows similar results as before. Loblolly trees' height varies largerly comparing to cherry trees. Cherry trees height concentrates around the median.


% of Loblolly Tree Height Around the Median
10
20
30
40
50
60


% of Cherry Tree Height Around the Median
65
70
75
80
85

## Height and age.

Older trees are observed to be taller. Graph 2 shows the relationship between heigh and age for trees. We observe a progresssive heigh growth as the tree gets older with no evidence of stagnation in size after a certain age.

**Graph 2. Heigh and age reelationship**

```
## geom_smooth: method="auto" and size of largest group is <1000, so using loess. Use 'method = x' to ch
```