

## COSC6323 - Exercise 5

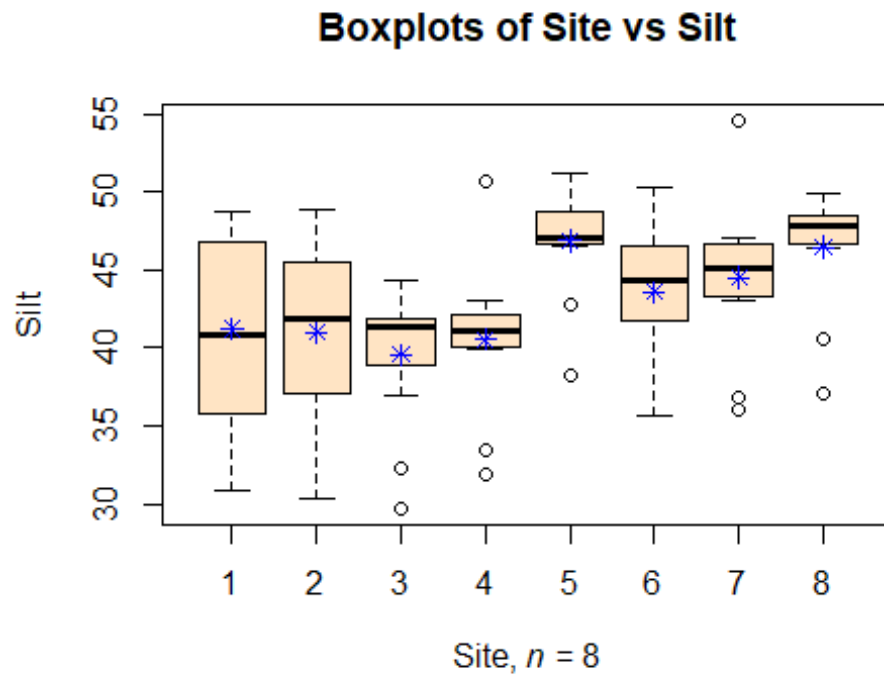
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3/5/2021

```
setwd('D:/Statistical Methods/Assignments/Assignment 5')
siltData <- read.csv("SiltDataset.csv")
#Factor
siteFactor <- factor(siltData$site)
#ANOVA
analysis <- aov(siltData$silt ~ siteFactor)
#Summary
summary(analysis)

##              Df Sum Sq Mean Sq F value    Pr(>F)
## siteFactor    7  600.1    85.73    3.432 0.00293 **
## Residuals   80 1998.4    24.98
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

#Boxplot
customTitle <- expression(paste("Site, ", italic("n"), " = 8"))
bPlot<-boxplot(siltData$silt~siteFactor,xlab=customTitle,
              ylab="Silt",
              border = par("fg"), col = "bisque", log = "",
              main="Boxplots of Site vs Silt")
means <- tapply(siltData$silt, siteFactor, mean)
points( means, pch=8, col="blue")
```



Since the p-value ( $0.00293 < 0.05$ ) is less than 0.05, the difference in means is statistically significant. Therefore, there is difference in silt content among the soils from different sites.