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# Draw a boxplot or whisker plot to show the association between "Mutation Signatures" and "Smoking status"

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> require(reshape2)

> df <- read.csv("input\_data.csv", header=T)

> df

> require(reshape2)

> df.m <- melt(df, id.var = "smoking")

> df.m

> require(ggplot2)

> ggplot(data= df.m, aes(x=variable, y=value)) + geom\_boxplot(aes(fill=smoking)) + xlab("Signature") + ylab("Mutation\_counts") + ggtitle("Association between Mutation Signature and smoking status" )+ guides(fill=guide\_legend(title="")) + theme(axis.text = element\_text(face = "bold", colour = "black")) + theme(title = element\_text(face = "bold", size = 12))