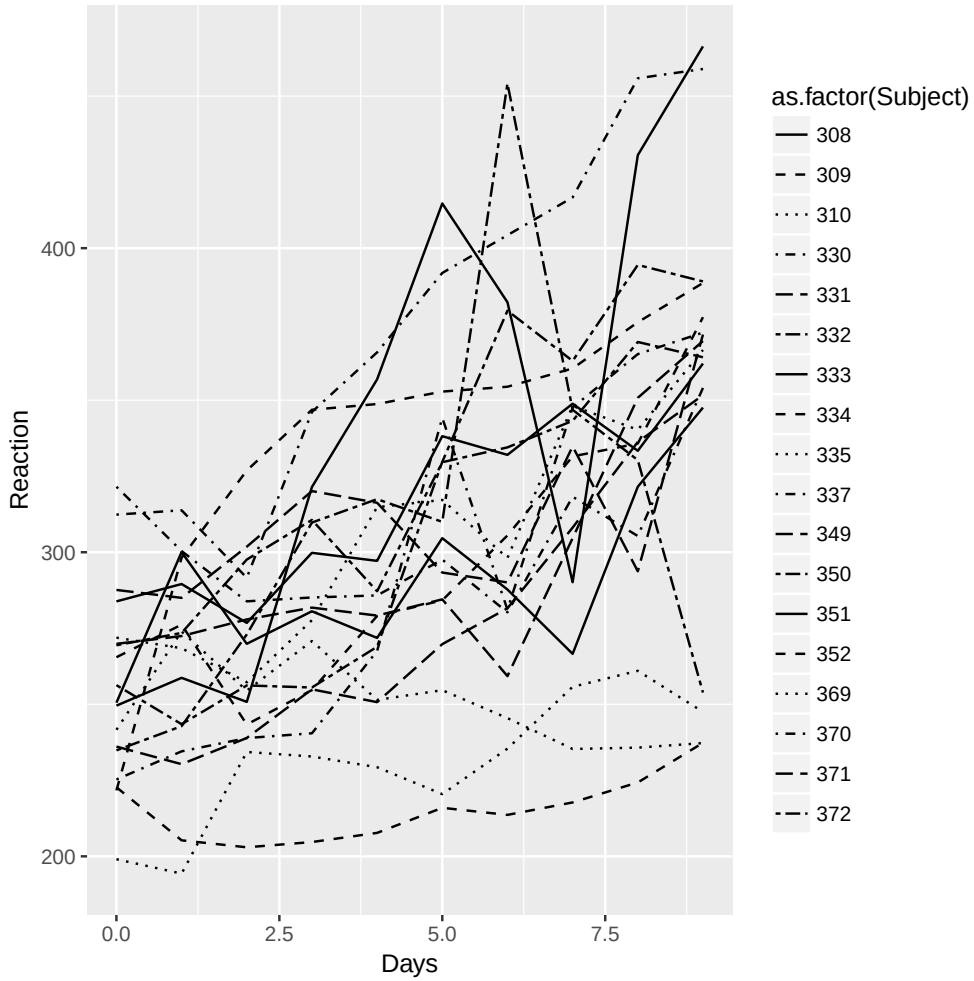
Statistics 3080
Homework 4
David Smith

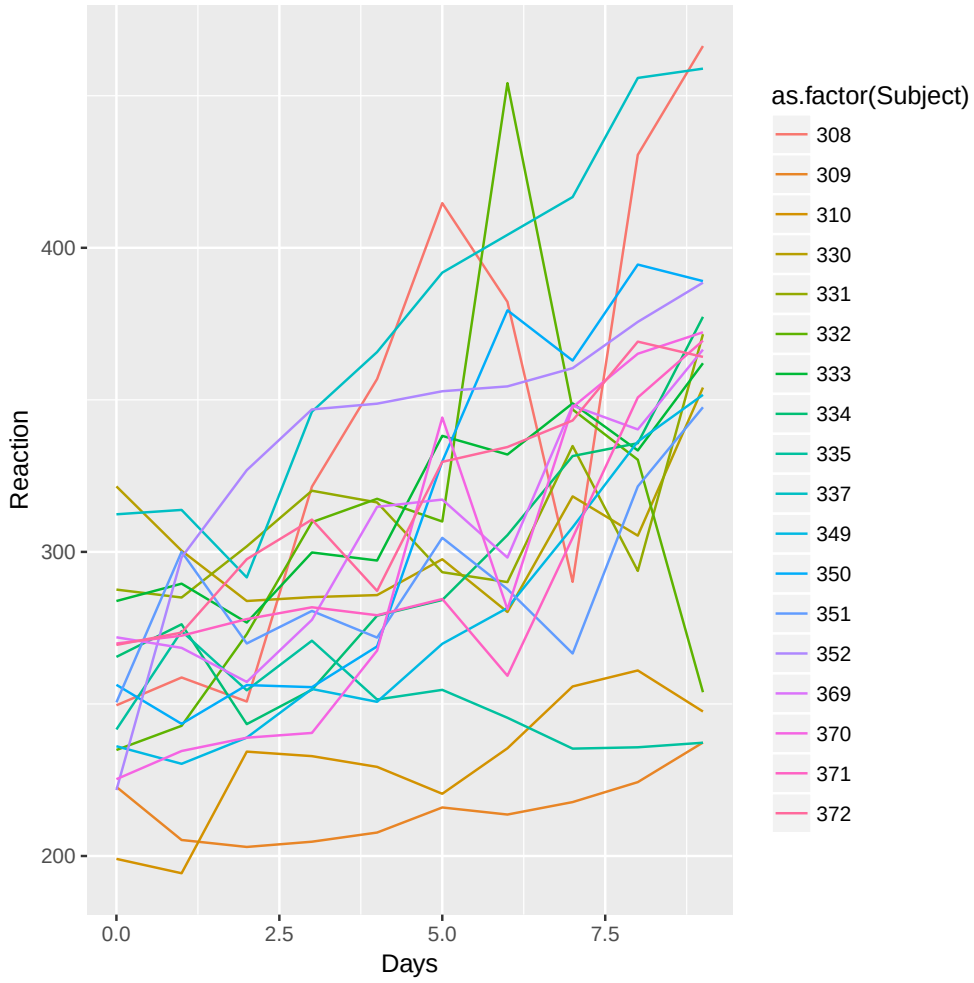
Problem 1a

```
> library(ggplot2)
> sleep_data <- read.table("sleep.txt", header=TRUE)
> ggplot(sleep_data, aes(x=Days, y=Reaction)) +
+   geom_line(aes(linetype=as.factor(Subject))) +
+   scale_linetype_manual(values=1:18)
```



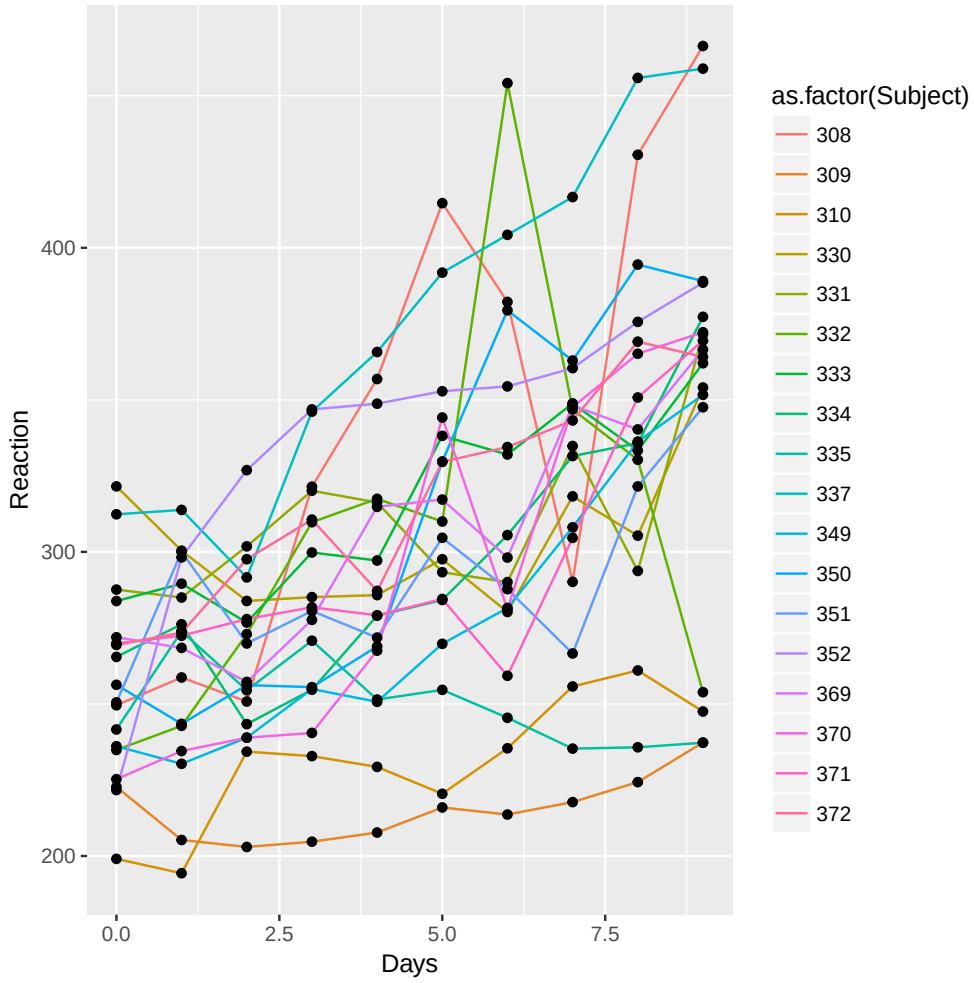
Problem 1b

```
> ggplot(sleep_data, aes(x=Days, y=Reaction)) +
+   geom_line(aes(colour=as.factor(Subject)))
```



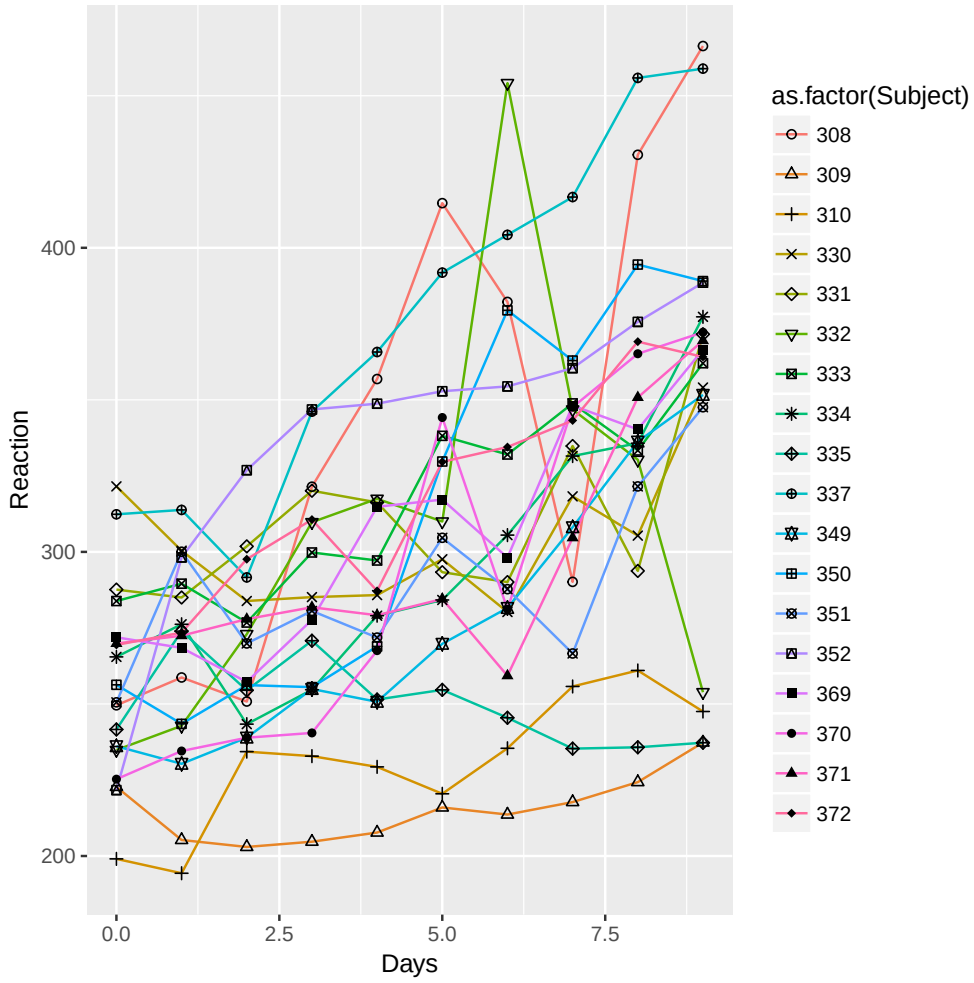
Problem 1c

```
> ggplot(sleep_data, aes(x=Days, y=Reaction)) +
+   geom_line(aes(colour=as.factor(Subject))) + geom_point()
```



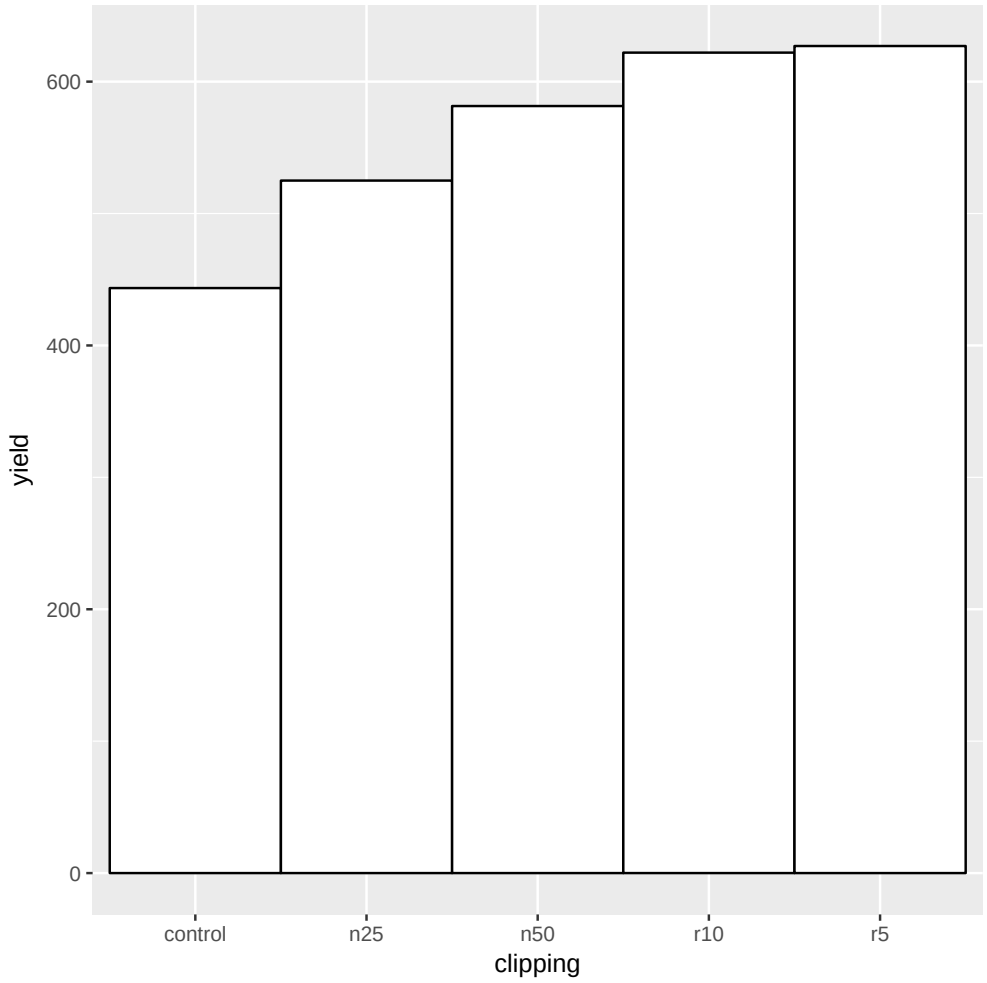
Problem 1d

```
> ggplot(sleep_data, aes(x=Days, y=Reaction)) +
+   geom_line(aes(colour=as.factor(Subject))) +
+   geom_point(aes(shape=as.factor(Subject))) +
+   scale_shape_manual(values=1:18)
```



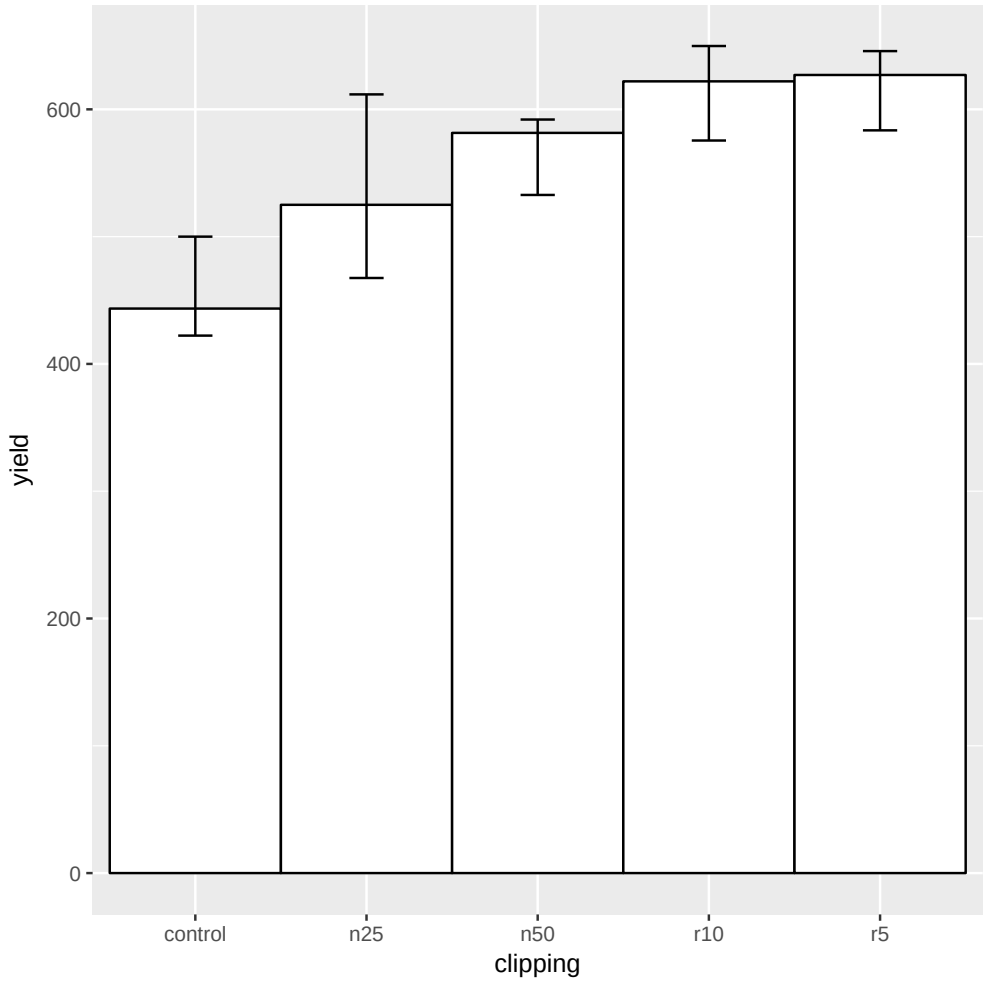
Problem 2a

```
> compexp <- read.table("compexp.txt", header=TRUE)
> ggplot(compexp, aes(x=clipping, y=yield)) +
+   stat_summary(fun.y=median, geom="bar", fill="white", colour="black", width=1)
```



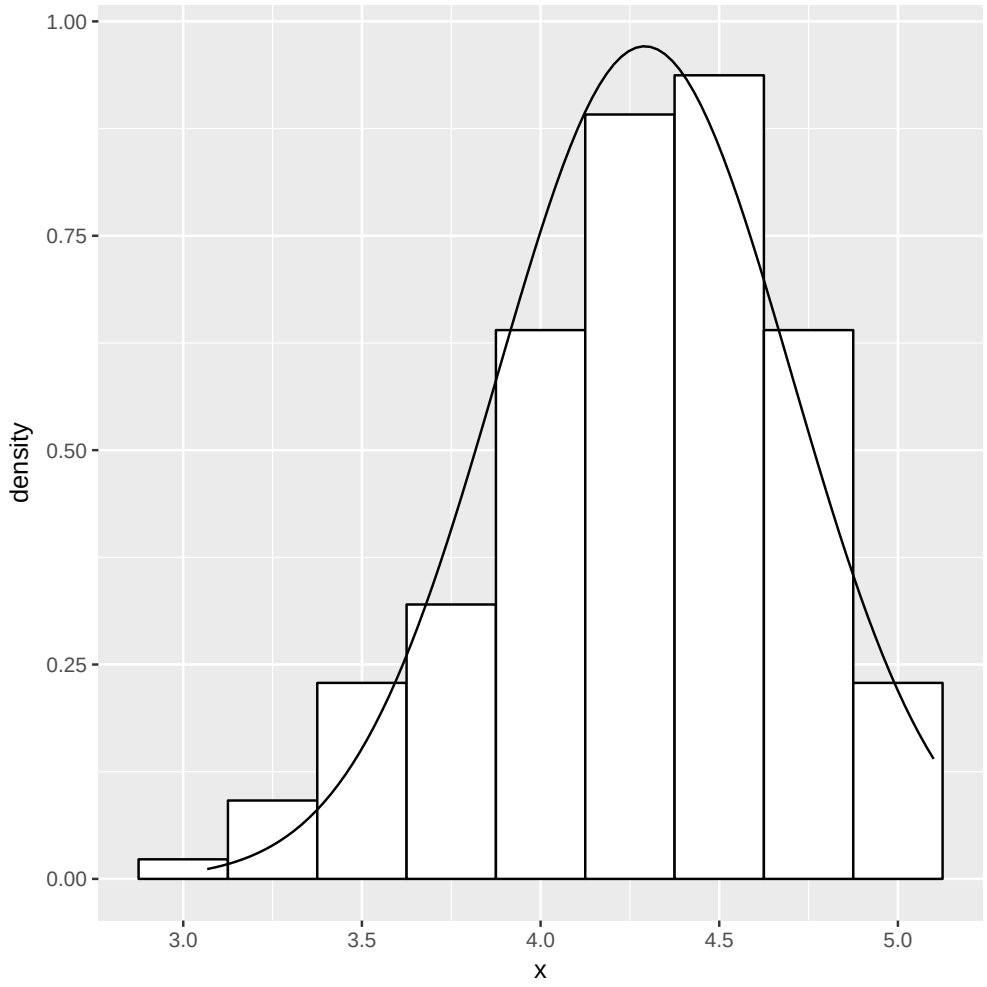
Problem 2b

```
> ggplot(compexp, aes(x=clipping, y=yield)) +
+   stat_summary(fun.y=median, geom="bar", fill="white", colour="black", width=1) +
+   stat_summary(fun.data=median_hilow, fun.args=(conf.int=0.5),
+   geom="errorbar", width=0.2)
```



Problem 3

```
> erupt <- read.table("erupt.txt", header=TRUE)
> xbar <- mean(erupt$x)
> std_dev <- sd(erupt$x)
> ggplot(erupt) + geom_histogram(aes(x=x, y=..density..), colour="black",
+   fill="white", binwidth=0.25) + stat_function(fun=dnorm,
+   args=list(mean=xbar, sd=std_dev))
```



References:

- https://stackoverflow.com/questions/28436467/interquartile-ranges-in-ggplot2