# Reproducible Reporting

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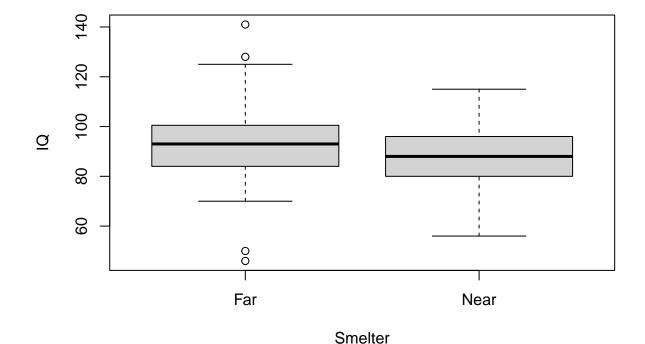
### Reproducible Reporting

```
dat <- read.csv('C:/Users/Eddie/OneDrive/Desktop/BIOSTAT/BIOS 6621/Week 6/lead-iq-01.csv')
outlier <- which(dat$IQ==999)
dat$IQ[outlier] <- 99</pre>
```

### Make graph

```
boxplot(IQ ~ Smelter, data = dat, main = 'IQ by Distance from Smelter', ylab = 'IQ')
```

## **IQ** by Distance from Smelter



#### Make table

```
mymod <- lm(IQ ~ as.factor(Smelter), data = dat)</pre>
summary(mymod)
##
## Call:
## lm(formula = IQ ~ as.factor(Smelter), data = dat)
##
## Residuals:
##
       Min
                1Q Median
                                 3Q
                                        Max
##
  -46.687 -9.193 -0.687
                              7.313
                                     48.313
##
## Coefficients:
##
                          Estimate Std. Error t value Pr(>|t|)
## (Intercept)
                             92.687
                                         1.754 52.847
                                                          <2e-16 ***
## as.factor(Smelter)Near
                             -3.494
                                         2.587 -1.351
                                                           0.179
## Signif. codes: 0 '*** 0.001 '** 0.01 '* 0.05 '.' 0.1 ' 1
## Residual standard error: 14.36 on 122 degrees of freedom
## Multiple R-squared: 0.01473,
                                     Adjusted R-squared:
## F-statistic: 1.824 on 1 and 122 DF, p-value: 0.1793
df <- data.frame(</pre>
  estimate = c(92.687, -3.494),
  SE = c(1.754, 2.587),
 teststat \leftarrow c(52.847, -1.351),
  pval <- c('<0.0001', '0.179')</pre>
colnames(df) = c('Estimate', 'SE', 'Test Statistic', 'P-Value')
df %>% kable(caption = "Model Output of mymod")
```

Table 1: Model Output of mymod

Estimate	SE	Test Statistic	P-Value
92.687	11101	52.847	<0.0001
-3.494		-1.351	0.179

We clearly see from our boxplot that the outlier is gone. From our simple linear regression model, we see that children who are within 1 mile of the smelter are expected to have an IQ 3.494 points fewer when compared to children who live further than 1 mile from the smelter, although this difference is not statistically significant (p=0.179).

```
mean(dat$IQ)
```

```
## [1] 91.08065
```