Linear Regression Tutorial Sheet Solutions

```r
MYPEARSON<-read.csv("PearsonLeeSimple.csv")
Pearson_child_parent<-lm(child~parent,data=MYPEARSON)
summary(Pearson_child_parent)
```

```
##
## Call:
## lm(formula = child ~ parent, data = MYPEARSON)
##
## Residuals:
##      Min      1Q   Median      3Q     Max
## -12.9671  -3.5040   0.0329   3.1855  13.8013
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept) 41.06911    2.41880   16.98   <2e-16 ***
## parent       0.38422    0.03711   10.36   <2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 4.81 on 744 degrees of freedom
## Multiple R-squared:  0.126,  Adjusted R-squared:  0.1248
## F-statistic: 107.2 on 1 and 744 DF,  p-value: < 2.2e-16
```

```r
library(ggplot2)

Pearson_child_height_gp_model<-lm(child~parent,data=MYPEARSON)

summary(Pearson_child_height_gp_model)
```

```
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## Call:
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##
## Residuals:
##      Min      1Q   Median      3Q     Max
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```r
ggplot(MYPEARSON, aes(x=parent, y=child)) +ylab("Child Height (in)")+xlab("Parent Height (in)")+
    geom_point(shape=1) +
    scale_colour_hue(l=50) + # Use a slightly darker palette than normal
    geom_smooth(method=lm,   # Add linear regression lines
```

```
                    se=FALSE)+     # Don't add shaded confidence region
      scale_color_discrete(name = "Parent")
```

```
## Scale for 'colour' is already present. Adding another scale for
## 'colour', which will replace the existing scale.
```
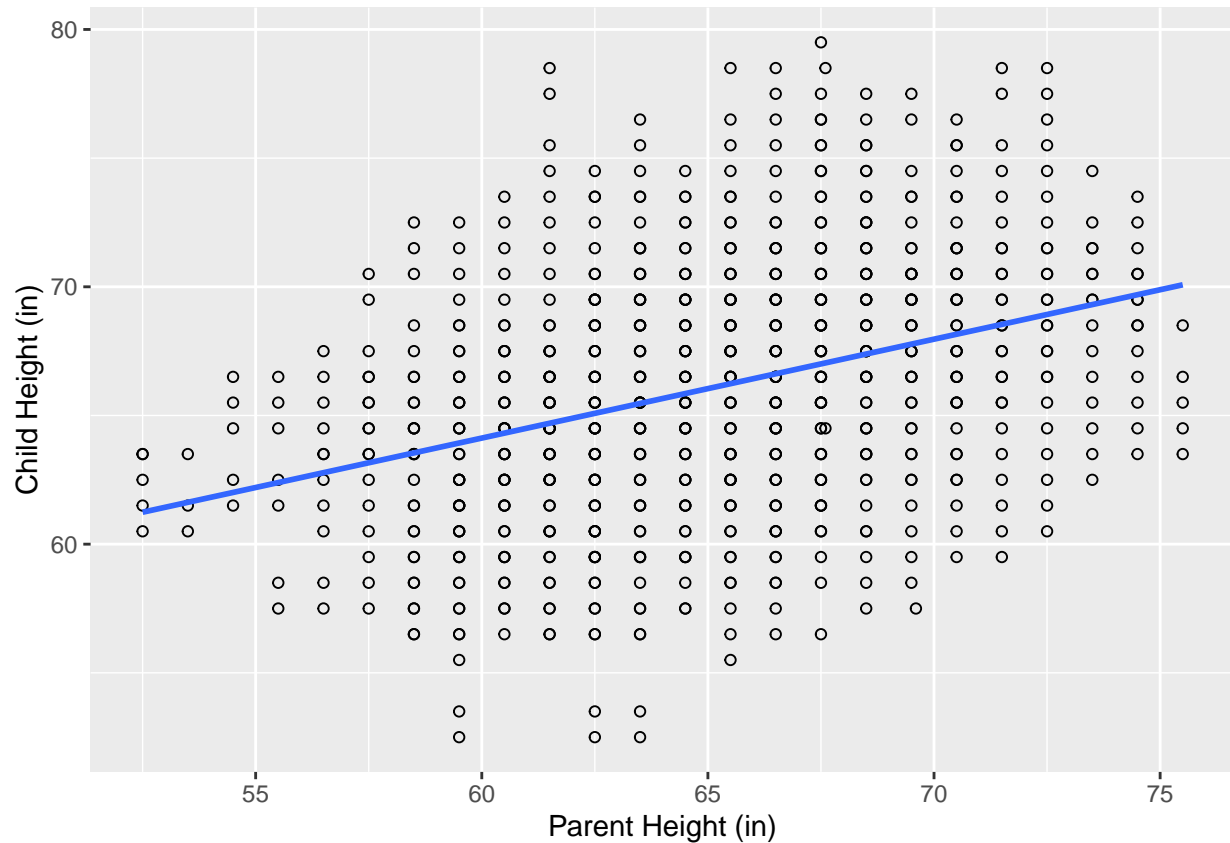


```
ggsave("Linear_Regression.png",dpi=300, width = 4, height = 2)
```