HW7 401

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R Markdown

This is an R Markdown document. Markdown is a simple formatting syntax for authoring HTML, PDF, and MS Word documents. For more details on using R Markdown see http://rmarkdown.rstudio.com.

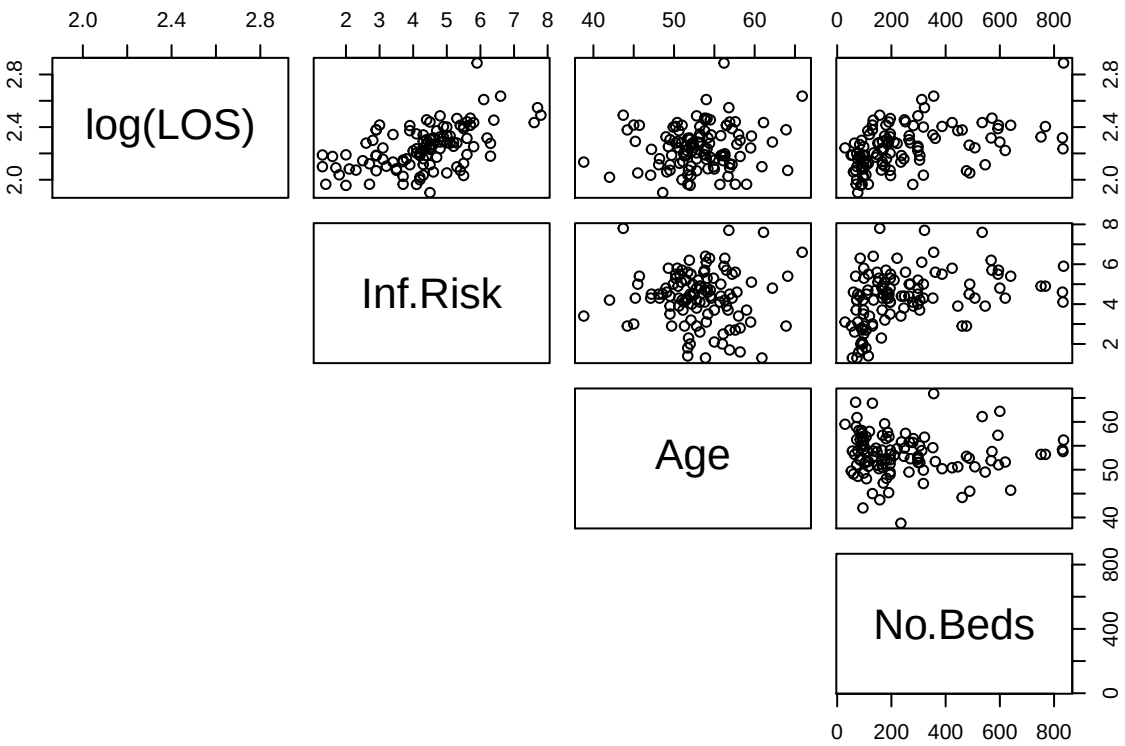
When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
rate = read.table("LOS.txt", header = T)
#head(rate)

attach(rate)
```

Fit Model

```
pairs(~log(LOS) + Inf.Risk + Age + No.Beds, data=rate, lower.panel = NULL)
```



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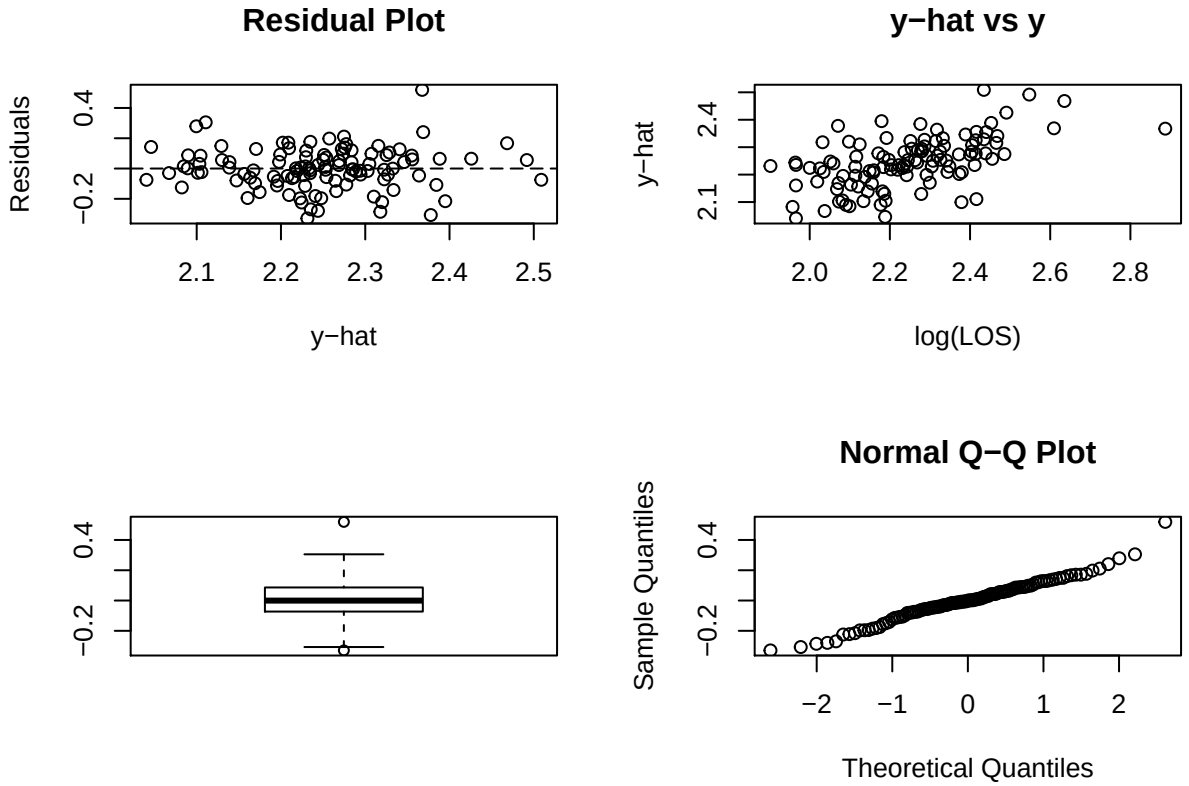
```
model <- lm(log(LOS)~Inf.Risk + Age, data = rate)
summary(model)
```

```
##
```

```
## Call:
## lm(formula = log(LOS) ~ Inf.Risk + Age, data = rate)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.32929 -0.07284 -0.00053  0.08630  0.51948
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept) 1.659718   0.163620  10.144  < 2e-16 ***
## Inf.Risk    0.067158   0.009788   6.862 4.46e-10 ***
## Age         0.005544   0.002947   1.882   0.0626 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1373 on 108 degrees of freedom
## Multiple R-squared:  0.3169, Adjusted R-squared:  0.3042
## F-statistic: 25.05 on 2 and 108 DF,  p-value: 1.158e-09
```

```r
par(mfrow = c(2,2))
y.hat.log <- fitted(model)
ep.hat.log <- resid(model)
plot(y.hat.log, ep.hat.log, main = "Residual Plot", ylab = "Residuals", xlab = "y-hat")
abline(h=0, lty = 5)

plot(log(rate$LOS), y.hat.log, main = "y-hat vs y", xlab = "log(LOS)", ylab = "y-hat")
boxplot(ep.hat.log)
qqnorm(ep.hat.log)
```



```r
round(confint(model, level = 0.95), digits = 5)
```

```
##                 2.5 %  97.5 %
## (Intercept)  1.33540 1.98404
## Inf.Risk     0.04776 0.08656
## Age         -0.00030 0.01139
```