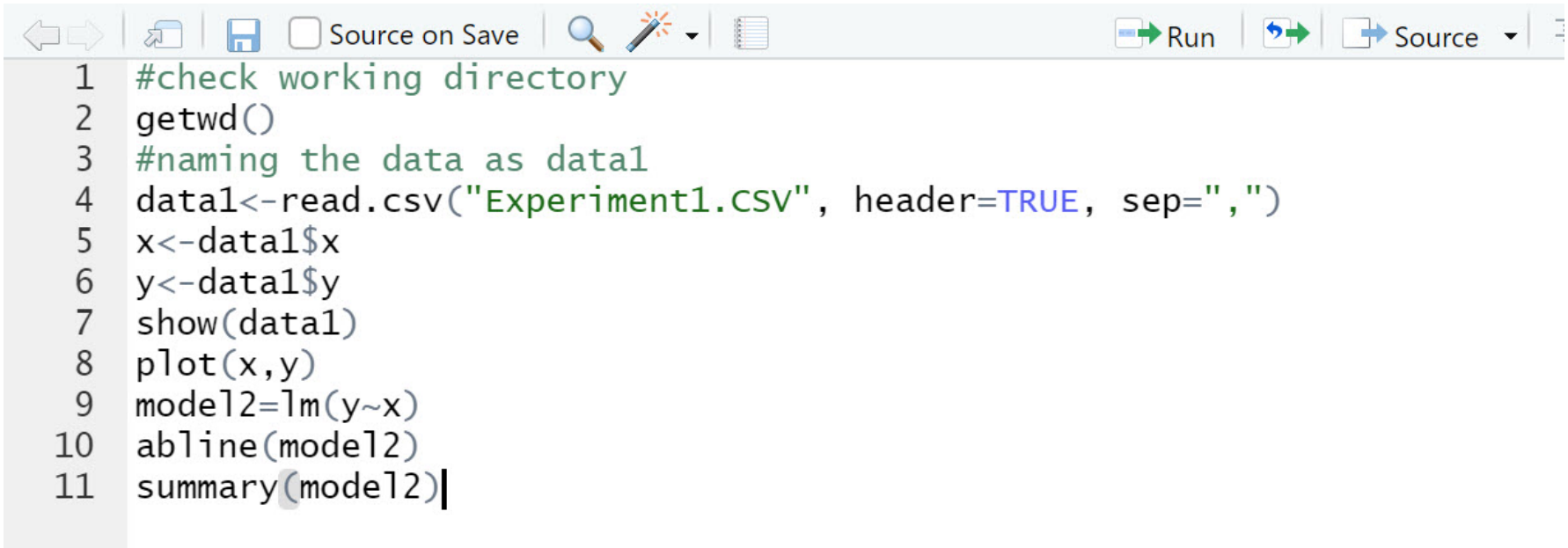
Simple Linear Regression

Dr. Kiah Wah Ong

Inferences Concerning β_0 and β_1 using R



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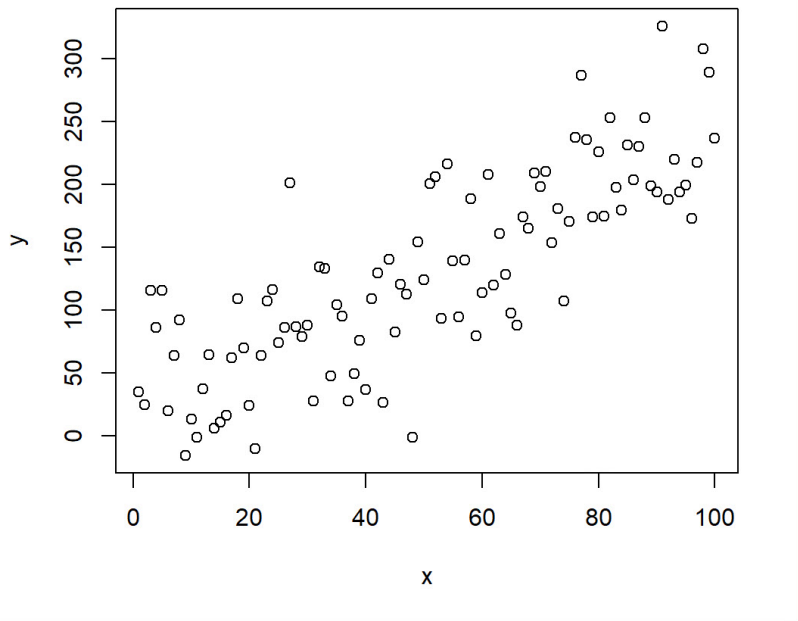

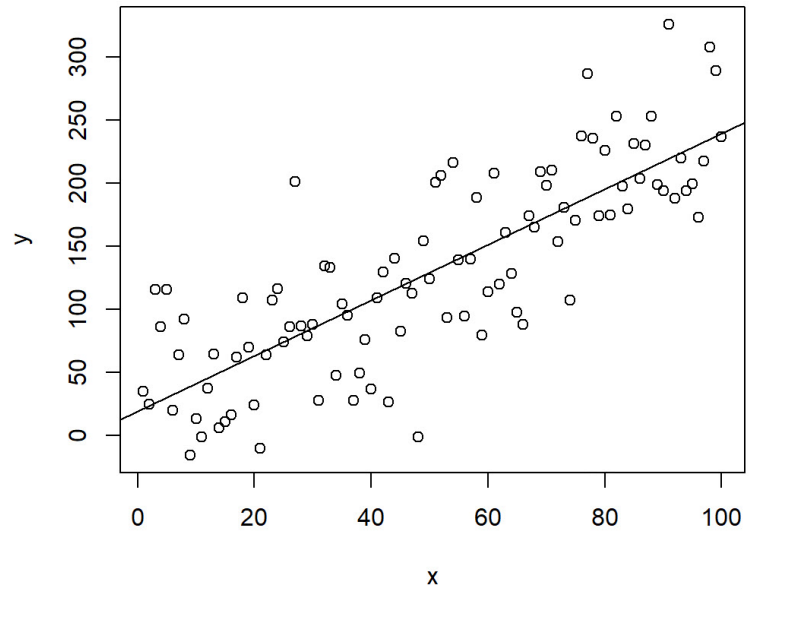

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```
Call:
lm(formula = y ~ x)

Residuals:
    Min      1Q  Median      3Q     Max
-125.78  -32.71   -2.81   31.49  122.62

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)  18.9446     9.4293   2.009   0.0473 *
x             2.2040     0.1621  13.596   <2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 46.79 on 98 degrees of freedom
Multiple R-squared:  0.6535,    Adjusted R-squared:   0.65
F-statistic: 184.9 on 1 and 98 DF,  p-value: < 2.2e-16
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Source on Save | Run | Source

```
1  #check working directory
2  getwd()
3  #naming the data as data1
4  data1<-read.csv("Experiment1.CSV", header=TRUE, sep=",")
5  x<-data1$x
6  y<-data1$y
7  show(data1)
8  plot(x,y)
9  model2=lm(y~x)
10 abline(model2)
11 summary(model2)
12 #confidence interval, name of the model, 95% confidence interval)
13 confint(model2, level=0.95)
```

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> confint(model2, level=0.95)
                2.5 %   97.5 %
(Intercept) 0.2323693 37.65683
x           1.8823229  2.52571
```