```
R version 4.0.2 (2020-06-22) -- "Taking Off Again"
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Platform: x86_64-w64-mingw32/x64 (64-bit)

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  Natural language support but running in an English locale

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Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

[Previously saved workspace restored]

> #Experiment-7
> #Date-24/11/20
> #Slot-L1
> #Name-Amlan S Nayak
> #Reg no.-19BCD7143
> #corse-Mat1011
> #Score in zoology
> x=c(34,37,36,32,32,36,35,34,29,35)
> x
 [1] 34 37 36 32 32 36 35 34 29 35
> y=c(37,37,34,34,33,40,39,37,36,35)
> y
 [1] 37 37 34 34 33 40 39 37 36 35
> plot(x,y,col=c('blue'))
> sx<-sum(x)
> sx
[1] 340
> sy<-sum(y)
> sy
[1] 362
> sxy<-sum(x*y)
> sxy
[1] 12327
> sx2<-sum(x^2)
> sx2
[1] 11612
> numerator<-10*sxy-sx*sy
> numerator
[1] 190
> denom<-10*sx2-sx^2
> denom
[1] 520
> betal<-numerator/denom
> betal
[1] 0.3653846
> xbar<-mean(x)
> xbar
[1] 34
> ybar<-mean(y)
> ybar
[1] 36.2
> beta0<-ybar-betal*xbar
> beta0
[1] 23.77692
> y1=beta0+betal*x
> y1
 [1] 36.20000 37.29615 36.93077 35.46923 35.46923 36.93077 36.56538 36.20000
 [9] 34.37308 36.56538
> y-y1
 [1]  0.8000000 -0.2961538 -2.9307692 -1.4692308 -2.4692308  3.0692308
 [7]  2.4346154  0.8000000  1.6269231 -1.5653846
> lines(x,y1,type="1",lty=1,lwd=3,col=c('green'))
Error in plot.xy(xy.coords(x, y), type = type, ...) :
```

```
  invalid plot type '1'
> lines(x,y1,type="l",lty=l,lwd=3,col=c('green'))
Error in plot.xy(xy.coords(x, y), type = type, ...) :
  object 'l' not found
> lines(x,y1,type="l",lty=1,lwd=3,col=c('green'))
> lm(y~x)

Call:
lm(formula = y ~ x)

Coefficients:
(Intercept)            x
    23.7769       0.3654

> #botany score 28
> x1<-(28-beta0)/betal
> x1
[1] 11.55789
> lm(y~x)

Call:
lm(formula = y ~ x)

Coefficients:
(Intercept)            x
    23.7769       0.3654

> lm(x~y)

Call:
lm(formula = x ~ y)

Coefficients:
(Intercept)            y
    18.9167       0.4167

> x2=18.9167+0.4167*y
> x3<-18.197+0.4167*28
> x3
[1] 29.8646
> x4<-18.9167+0.4167*28
> x4
[1] 30.5843
> plot(y,x,col=c('blue'),main="linear regression fit")
> lines(y,x2,type="l"lty=2,lwd=2,col=c('red'))
Error: unexpected symbol in "lines(y,x2,type="l"lty"
> lines(y,x2,type="l",lty=2,lwd=2,col=c('red'))
> fit=lm(x~y)
> plot(fit)
Waiting to confirm page change...
Waiting to confirm page change...
Waiting to confirm page change...
Waiting to confirm page change...
> #the experiment of gathering a sample of observed values
> #of height and corresponding weight.
> #Assignment
> x <- c(151, 174, 138, 186, 128, 136, 179, 163, 152, 131)
> y <- c(63, 81, 56, 91, 47, 57, 76, 72, 62, 48)
>
> # Apply the lm() function.
> relation <- lm(y~x)
>
> print(relation)

Call:
lm(formula = y ~ x)

Coefficients:
(Intercept)            x
   -38.4551       0.6746

> print(summary(relation))

Call:
```

```
lm(formula = y ~ x)

Residuals:
    Min      1Q  Median      3Q     Max
-6.3002 -1.6629  0.0412  1.8944  3.9775

Coefficients:
             Estimate Std. Error t value Pr(>|t|)
(Intercept) -38.45509    8.04901  -4.778  0.00139 **
x             0.67461    0.05191  12.997 1.16e-06 ***
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 3.253 on 8 degrees of freedom
Multiple R-squared:  0.9548,    Adjusted R-squared:  0.9491
F-statistic: 168.9 on 1 and 8 DF,  p-value: 1.164e-06

> plot(y,x,col = "blue",main = "Height & Weight Regression",
+ abline(lm(x~y)),cex = 1.3,pch = 16,xlab = "Weight in Kg",ylab = "Height in cm")
>
```