

Practical 1

Aim:-

Linear Regression

Code:-

```

x=c(151,174,138,186,128,136,179,163,152,131)
y=c(63,81,56,91,47,54,76,72,62,48)
relation=lm(y~x)
print(relation)
print(summary(relation))
a=data.frame(x=170)
result=predict(relation,a)
print(result)
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")

```

Output:-

```

> x=c(151,174,138,186,128,136,179,163,152,131)
> y=c(63,81,56,91,47,54,76,72,62,48)
> relation=lm(y~x)
> print(relation)

Call:
lm(formula = y ~ x)

Coefficients:
(Intercept)          x
   -40.8462         0.6882

> print(summary(relation))

Call:
lm(formula = y ~ x)

Residuals:
    Min       1Q   Median       3Q      Max
-6.3428 -1.0427  0.2977  1.7178  3.8397

Coefficients:
              Estimate Std. Error t value Pr(>|t|)
(Intercept) -40.84617    7.30772   -5.589 0.000517 ***
x              0.68821    0.04712   14.604 4.74e-07 ***
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Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 2.953 on 8 degrees of freedom
Multiple R-squared:  0.9638,    Adjusted R-squared:  0.9593
F-statistic: 213.3 on 1 and 8 DF,  p-value: 4.741e-07

> a=data.frame(x=170)
> result=predict(relation,a)
> print(result)
      1
76.14895
> 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")
> |

```