MAT2001 – Statistics for Engineers

Embedded Lab – R Statistical Software

WINTER SEMESTER – 2017_2018

L31+L32 SLOT

E-RECORD

Experiment No.:3

Submitted By

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SITE

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Linear Regression and Multiple Linear Regression

1. Write down the R code to obtain the equation of the regression line of X on Y from the following data:

X : 4.7 8.2 12.4 15.8 20.7 24.9 31.9 35.0 39.1 38.8

Y : 4.0 8.0 12.5 16.0 20.0 25.0 31.0 36.0 40.0 40.0

CODE:

```
> x=c(4.7,8.2,12.4,15.8,20.7,24.9,31.9,35.0,39.1,38.8)

 > y=c(4.0,8.0,12.5,16.0,20.0,25.0,31.0,36.0,40.0,40.0)

  > fit=lm(x~y)

 > fit

Call:  lm(formula = x ~ y)

Coefficients:  (Intercept)          y

                      0.7508       0.9634
```

2. Write down the R code to obtain the equation of the regression plane of Y on X1 and X2 from the following data:

X1 : 30 40 20 50 60 40 20 60

X2 : 11 10 7 15 19 12 8 14

Y : 110 80 70 120 150 90 70 120

CODE:

```
> x1=c(30,40,20,50,60,40,20,60)

  > x2=c(11,10,7,15,19,12,8,14)

> y=c(110,80,70,120,150,90,70,120)

  > D=data.frame(y,x1,x2)

  > D


 y x1 x2

1 110 30 11
```

2 80 40 10

3 70 20 7

4 120 50 15

5 150 60 19

6 90 40 12

7 70 20 8

8 120 60 14

```
> MultiReg=lm(y~x1+x2,data=D)
> MultiReg  Call:  lm(formula = y ~ x1 + x2, data = D)
 Coefficients:  (Intercept)          x1          x2
                    16.8314     -0.2442      7.8488
```

Experiment No : 3

Experiment title : Linear Regression & multiple Linear Regression.

Experiment date : 5/2/2018

Slot : L31 + L32

Name : Vivek. S

Register No : 16MIS0463

Output :

1) Coefficient , (Intercept)

0.7508

Y

0.9634

2) Coefficient (Intercept)

16.8314

x_1

−0.2442

x_2

7.2438