Practical One

2025-02-05

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Practical One of Statistical Computing .This practical consists of 4 questions .

2 Question One

```
rowsNA <-which((is.na(airquality)))
```

```
 [1]   5  10  25  26  27  32  33  34  35  36  37  39  42  43  45  46  52  53  54
[20]  55  56  57  58  59  60  61  65  72  75  83  84 102 103 107 115 119 150 158
[39] 159 164 180 249 250 251
```

3 Question Two

```
tempmean <- mean(airquality$Temp,na.rm=TRUE)
```

```
[1] 77.88235
```

```
tempsd <- sd(airquality$Temp,na.rm=TRUE)
```

```
[1] 9.46527
```

```
 tempmin <- min(airquality$Temp,na.rm=TRUE)
```

```
[1] 56
```

```
tempmax <- max(airquality$Temp,na.rm=TRUE)
```

```
[1] 97
```

```
ozonemean <- mean(airquality$Ozone,na.rm=TRUE)
```

```
[1] 42.12931
```

```
ozonesd <- sd(airquality$Ozone,na.rm=TRUE)
```

```
[1] 32.98788
```

```
ozonemin <- min(airquality$Ozone,na.rm=TRUE)
```

```
[1] 1
```

```r
ozonemax <- max(airquality$Ozone,na.rm=TRUE)
```

```
[1] 168
```

4 Question Three

```
beta <- solve(t(xmatrix)%*%xmatrix)%*%t(xmatrix)%*%ymatrix
```

```
           [,1]
[1,] -17.579095
[2,]   3.932409
```

5 Question Four

```r
modelfit <- lm(dist~speed,data=cars)
summary(modelfit)
```

```
Call:
lm(formula = dist ~ speed, data = cars)

Residuals:
    Min      1Q  Median      3Q     Max
-29.069  -9.525  -2.272   9.215  43.201

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept) -17.5791     6.7584  -2.601   0.0123 *
speed         3.9324     0.4155   9.464 1.49e-12 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 15.38 on 48 degrees of freedom
Multiple R-squared:  0.6511,    Adjusted R-squared:  0.6438
F-statistic: 89.57 on 1 and 48 DF,  p-value: 1.49e-12
```