Practical – 7
(Merging & Appending Datasets)

Roll No.: S054	Name: Rabiya qureshi jalil
Class: SYIT	Batch: 1
Date of Assignment: 17/1/2026	Date/Time of Submission: 17/1/2026

7 Performing one-way ANOVA using aov() (R).

Code

```r
# Sample data
plant_data <- data.frame(
  growth = c(20, 22, 19, 25, 27, 26, 23, 24, 21),
  fertilizer = factor(rep(c("A", "B", "C"), each = 3))
)

# Perform one-way ANOVA
anova_model <- aov(growth ~ fertilizer, data = plant_data)

# View ANOVA table
summary(anova_model)
```

Output:-

```r
> # Sample data
> plant_data <- data.frame(
+   growth = c(20, 22, 19, 25, 27, 26, 23, 24, 21),
+   fertilizer = factor(rep(c("A", "B", "C"), each = 3))
+ )
> # Perform one-way ANOVA
> anova_model <- aov(growth ~ fertilizer, data = plant_data)
> # View ANOVA table
> summary(anova_model)
            Df Sum Sq Mean Sq F value  Pr(>F)
fertilizer   2  48.67  24.333   12.88 0.00674 **
Residuals    6  11.33   1.889
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
>
```

Practical – 8
(Merging & Appending Datasets)

Roll No.: S054	Name: Rabiya
Class: SYIT	Batch: 1
Date of Assignment: 17/1/2026	Date/Time of Submission: 17/1/2026

8 Performing two-way ANOVA using aov() (R).

Code

```
data(ToothGrowth)
# View first few rows
head(ToothGrowth)
model <- aov(len ~ supp * dose, data = ToothGrowth)
summary(model)
```

Output

```
> data(ToothGrowth)
> # View first few rows
> head(ToothGrowth)
   len supp dose
1  4.2   VC  0.5
2 11.5   VC  0.5
3  7.3   VC  0.5
4  5.8   VC  0.5
5  6.4   VC  0.5
6 10.0   VC  0.5
> model <- aov(len ~ supp * dose, data = ToothGrowth)
> summary(model)
            Df Sum Sq Mean Sq F value   Pr(>F)
supp         1  205.4   205.4  12.317 0.000894 ***
dose         1 2224.3  2224.3 133.415  < 2e-16 ***
supp:dose    1   88.9    88.9   5.333 0.024631 *
Residuals   56  933.6    16.7
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
>
```

Practical – 9
(Merging & Appending Datasets)

Roll No.: S054	Name: Rabiya
Class: SYIT	Batch: 1
Date of Assignment: 17/1/2026	Date/Time of Submission: 17/1/2026

9 Conducting Chi-square tests using chisq.test() (R)
code:-

```
data(HairEyeColor)
tbl <- margin.table(HairEyeColor, c(1,2))
chisq.test(tbl)
```

Output:-

```
> data(HairEyeColor)
> tbl <- margin.table(HairEyeColor, c(1,2))
> chisq.test(tbl)

        Pearson's Chi-squared test

data:  tbl
X-squared = 138.29, df = 9, p-value < 2.2e-16
```