Laxmi Charitable Trust's

Sheth L.U.J College of Arts & Sir M.V. College of Science and Commerce

Department of Information Technology (B.Sc.I.T Semester IV)

DA with SAS/SPSS/R

(Module-2)

Practical:7

Roll No.: S002	Name: Asmitha Mohan Raj
Class: SYIT	Batch:1
Date of Assignment: 17/01/2026	Date/Time of Submission: 17/01/2026

Aim: Performing one-way ANOVA using aov() (R).

Code:

```
data("PlantGrowth")
head(PlantGrowth)
data <- data.frame(score, method)
anova_mode <- aov(score ~ method, data = data)
summary(anova_mode)
```

Output:

```
> data("PlantGrowth")
> head(PlantGrowth)
  weight group
1   4.17  ctrl
2   5.58  ctrl
3   5.18  ctrl
4   6.11  ctrl
5   4.50  ctrl
6   4.61  ctrl
> data <- data.frame(score, method)
> anova_mode <- aov(score ~ method, data = data)
> summary(anova_mode)
            Df Sum Sq Mean Sq F value   Pr(>F)
method       2  451.6   225.8   32.25 0.000616 ***
Residuals    6   42.0     7.0
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

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Practical:8

Roll No.: S002	Name: Asmitha Mohan Raj
Class: SYIT	Batch:1
Date of Assignment: 17/01/2026	Date/Time of Submission: 17/01/2026

Aim: 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
```

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DA with SAS/SPSS/R

(Module-2)

Practical:9

Roll No.: S002	Name: Asmitha Mohan Raj
Class: SYIT	Batch:1
Date of Assignment: 17/01/2026	Date/Time of Submission: 17/01/2026

Aim: 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
```