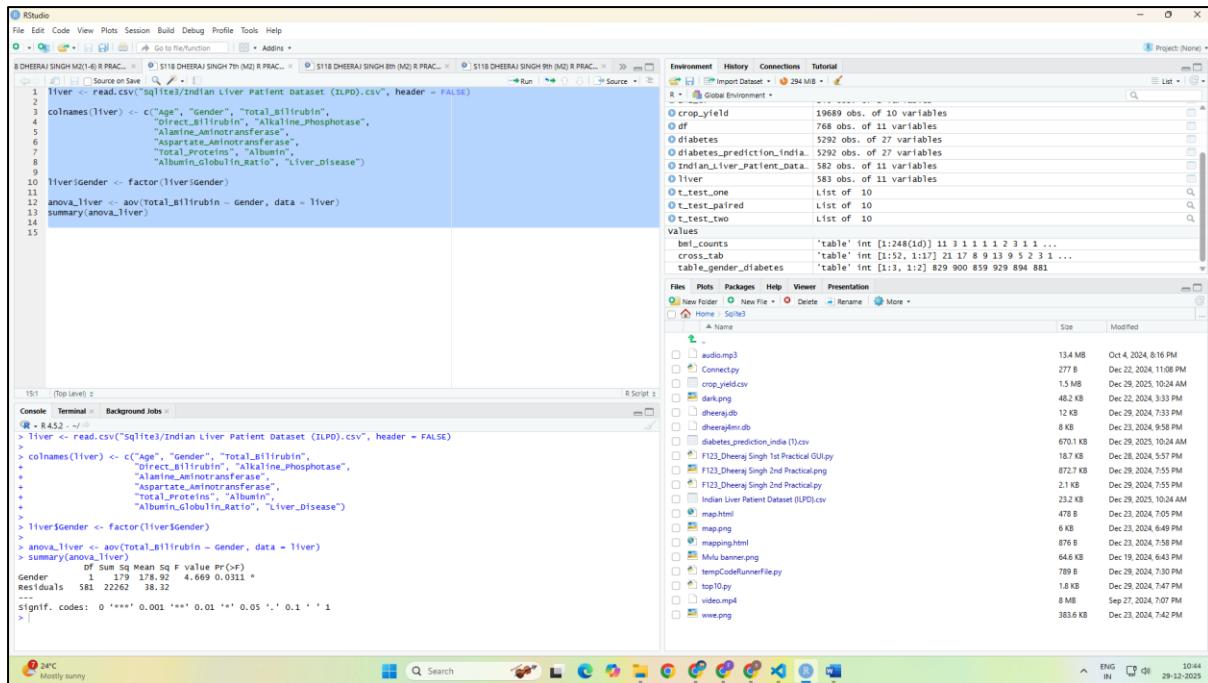


## PRACTICAL NO 7 (M2)

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

OUTPUT :



The screenshot shows the RStudio interface with the following details:

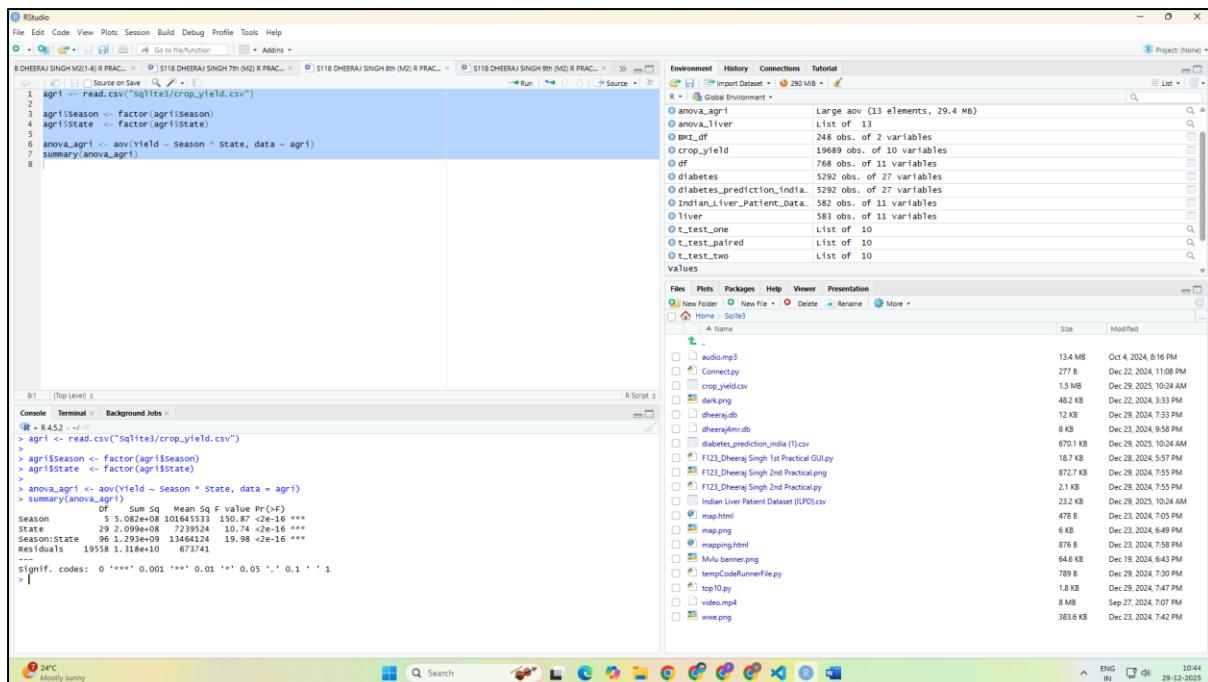
- Console:**

```
R> liver <- read.csv("Sqlite3/Indian Liver Patient dataset (ILPD).csv", header = FALSE)
R> colnames(liver) <- c("Age", "Gender", "Total_Bilirubin",
+ "Direct_Bilirubin", "Alkaline_Phosphotase",
+ "Alanine_Aminotransferase",
+ "Aspartate_Aminotransferase",
+ "Total_Proteins", "Albumin",
+ "Albumin_Globulin_Ratio", "Liver_Disease")
R> liver$Gender <- factor(liver$Gender)
R> anova_liver <- aov(Total_Bilirubin ~ Gender, data = liver)
R> summary(anova_liver)
R> gender <- factor(liver$Gender)
R> anova_liver <- aov(Total_Bilirubin ~ Gender, data = liver)
R> summary(anova_liver)
R> gender
R>   Df Sum Sq Mean Sq F value Pr(>F)
R> Gender  1  179 178.92  4.669 0.0311 *
R> Residuals 581 22262 38.52
R> 
R> signif. codes:  0 '****' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```
- Environment:** Shows various objects in the global environment, including `crop.yield` (19689 obs. of 10 variables), `df` (5292 obs. of 11 variables), `diabetes` (5292 obs. of 27 variables), `diabetes\_prediction.india` (5292 obs. of 27 variables), `liver` (582 obs. of 11 variables), `liver\$Gender` (List of 10), `t.t\_test\_one` (List of 10), `t.t\_test\_paired` (List of 10), `t.t\_test\_two` (List of 10), `values` (table), `bmi\_counts` (table), and `cross.tab` (table).
- Files:** Shows a list of files in the current directory, including `audio.mp3`, `Connectipy`, `crop.yield.csv`, `dark.png`, `dheerajdb`, `dheerajmrdb`, `diabetes\_prediction.india (1).csv`, `f123\_Dheeraj Singh 1st Practical GUI.py`, `f123\_Dheeraj Singh 2nd Practical.png`, `f123\_Dheeraj Singh 2nd Practical.py`, `indian liver Patient Dataset (ILPD).csv`, `map.html`, `meo.png`, `mapping.html`, `phu\_banner.png`, `tempCodeRunnerFile.py`, `top10.py`, `vdo.mp4`, and `www.png`.

### PRACTICAL NO 8 (M2)

AIM : Performing two-way ANOVA using aov() (R).

OUTPUT :



The screenshot shows the RStudio interface with the following details:

- Console:**

```

1 agr1 <- read.csv("Sqlite3/crop_yield.csv")
2
3 agr1$season <- factor(agr1$season)
4 agr1$state <- factor(agr1$state)
5
6 anova_agr1 <- aov(yield ~ season * state, data = agr1)
7 summary(anova_agr1)
  
```
- Environment:** Shows various objects loaded into memory, including `anova\_agr1` (aov), `anova\_agr1` (list), `bm1\_df` (data frame), `crop\_yield` (data frame), `df` (data frame), `diabetes` (data frame), `diabetes\_prediction\_india` (data frame), `Indian\_Liver\_Patient\_Data` (data frame), `liver` (data frame), `t\_ttest` (list), `t\_ttest\_paired` (list), and `t\_ttest\_two` (list).
- Files:** Shows a file tree with files like `audio.mp3`, `Connect.py`, `crop\_yield.csv`, `darkliver`, `dheerajdb`, `dheerajmrdrb`, `diabetes\_prediction\_india (1).csv`, `f123\_Dheeraj Singh 1st Practical GUI.py`, `f123\_Dheeraj Singh 2nd Practical.png`, `f123\_Dheeraj Singh 2nd Practical.py`, `Indian Liver Patient Dataset (ILPD).csv`, `map.html`, `map.png`, `mapping.html`, `phu banner.png`, `tempCodeRunnerFile.py`, `top10.py`, `video.mp4`, and `www.png`.
- Bottom Status Bar:** Shows the date (29-12-2025), time (10:44), and system status (ENG IN).

PRACTICAL 9 (M2)

## AIM : Conducting Chi-square tests using chisq.test() (R)

## **OUTPUT :**

RStudio

File Edit Code View Plots Session Build Debug Profile Tools Help

Source on Save | Run | Source | Environment History Connections Tutorial

Project (None)

diabetes <- read.csv("SQLite3/diabetes\_prediction\_India (1).csv")

diabetes\$Gender <- factor(diabetes\$Gender)

diabetes\$Diabetes\_Status <- factor(diabetes\$Diabetes\_Status)

table\_gender\_diabetes <- table(diabetes\$Gender, diabetes\$Diabetes\_Status)

chisq.test(table\_gender\_diabetes)

bmi\_counts

crosstab

table\_gender\_diabetes

Files Plots Packages Help Viewer Presentation

New Folder New File Delete Rename More

Home - Set(s)

Name Size Modified

audio.mp3 13.4 MB Oct 4, 2024 8:16 PM

Connect.py 277 B Dec 22, 2024 11:08 PM

crop\_yield.csv 1.5 MB Dec 29, 2025 10:24 AM

dark.png 482 kB Dec 22, 2024 9:50 AM

sheera.db 12 kB Dec 29, 2024 7:33 PM

sheeraJmR.db 8 kB Dec 23, 2024 9:58 PM

diabetes\_prediction\_India (1).csv 670.1 kB Dec 29, 2025 10:24 AM

F123\_Dheeraj Singh 1st Practical GUI.py 187 kB Dec 29, 2024 5:57 PM

F123\_Dheeraj Singh 2nd Practical.png 872.7 kB Dec 29, 2024 7:55 PM

F123\_Dheeraj Singh 2nd Practical.py 2.1 kB Dec 29, 2024 7:55 PM

Indian Liver Patient Dataset (ILPD).csv 23.2 kB Dec 29, 2025 10:24 AM

map.html 476 B Dec 23, 2024 7:05 PM

map.png 6 kB Dec 23, 2024 6:49 PM

mapping.html 876 B Dec 23, 2024 7:58 PM

Mulu banner.png 646 kB Dec 19, 2024 6:43 PM

tempCodeRunnerFile.py 789 B Dec 29, 2024 7:30 PM

top10.py 1.8 kB Dec 29, 2024 7:47 PM

video.mp4 8 MB Sep 27, 2024 7:07 PM

wave.png 383.6 kB Dec 23, 2024 7:42 PM

9:1 [Top Level] R Script

Console Terminal Background Jobs

R - R 4.5.2 - /

> diabetes <- read.csv("SQLite3/diabetes\_prediction\_India (1).csv")

>

> diabetes\$Gender <- factor(diabetes\$Gender)

> diabetes\$Diabetes\_Status <- factor(diabetes\$Diabetes\_Status)

> table\_gender\_diabetes <- table(diabetes\$Gender, diabetes\$Diabetes\_Status)

> chisq.test(table\_gender\_diabetes)

Pearson's Chi-squared test

data: table\_gender\_diabetes

X-squared = 3.4455, df = 2, p-value = 0.1786

> |