

# MVLU COLLEGE.

## PRACTICAL NO :- 07

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

CODE :-

```
# Load dataset
```

```
salary_data <- read.csv("C:/Users/Arvind/Downloads/Salary_Data.csv")
```

```
str(salary_data)
```

```
# Convert Years.of.Experience to numeric
```

```
salary_data$Years.of.Experience <- as.numeric(salary_data$Years.of.Experience)
```

```
# Create Experience Groups
```

```
salary_data$Exp_Group <- cut(
```

```
    salary_data$Years.of.Experience,
```

```
    breaks = c(0, 3, 6, 10, 50),
```

```
    labels = c("Low", "Medium", "High", "Very High"),
```

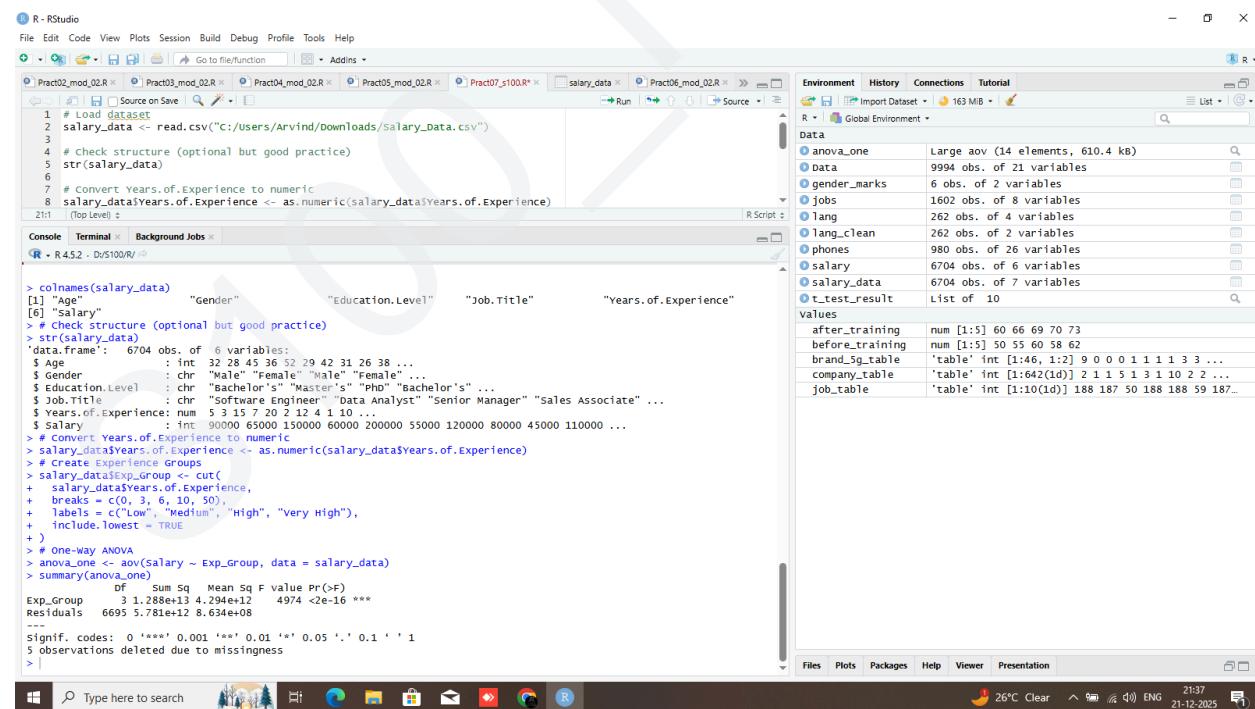
```
    include.lowest = TRUE
```

```
)
```

```
# One-Way ANOVA
```

```
anova_one <- aov(Salary ~ Exp_Group, data = salary_data)
```

```
summary(anova_one)
```



The screenshot shows the RStudio interface with the following details:

- File Menu:** File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help.
- Console:** Displays the R script and its output. The output shows the loading of the salary\_data dataset, conversion of Years.of.Experience to numeric, creation of Exp\_Group, and the execution of aov().
- Environment:** Shows the global environment with objects like anova\_one, data, gender\_marks, jobs, lang, lang\_clean, phones, salary, salary\_data, t\_test\_result, after\_training, before\_training, brand\_sq\_table, company\_table, and job\_table.
- Plots:** No plots are visible in this screenshot.
- Packages:** No packages are visible in this screenshot.
- Help:** No help is visible in this screenshot.
- Viewer:** No viewer is visible in this screenshot.
- Presentation:** No presentation is visible in this screenshot.
- Bottom Bar:** Shows system icons, a search bar, and system status (21°C Clear, ENG, 21-12-2025).

# MVLU COLLEGE.

## PRACTICAL NO :- 08

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

CODE :-

```
# Load dataset
```

```
phone <- read.csv("C:/Users/Arvind/Downloads/Smartphones_cleaned_dataset.csv")
```

```
colnames(phone)
```

```
# Convert factors
```

```
phone$brand_name <- as.factor(phone$brand_name)
```

```
phone$os <- as.factor(phone$os)
```

```
# Two-Way ANOVA
```

```
anova_two <- aov(price ~ brand_name * os, data = phone)
```

```
# Display result
```

```
summary(anova_two)
```

The screenshot shows the RStudio interface with the following details:

- R Script:** The code for performing a two-way ANOVA is displayed.
- Console:** The R console output is shown, including the command `summary(anova\_two)` and its results.
- Environment:** The environment browser shows various objects defined in the session, such as `anova\_one`, `anova\_two`, `Data`, `gender\_marks`, `jobs`, `lang`, `lang\_clean`, `lang\_data`, `lang\_table`, `phones`, `salaries`, `salary\_data`, and `t\_test\_result`.
- File Bar:** The file bar at the bottom shows the current workspace files: Pract03\_mod\_02.R, Pract04\_mod\_02.R, Pract05\_mod\_02.R, Pract07\_s100.R, Pract08\_mod2\_s100.R, salary\_da, and salary\_da.

# MVLU COLLEGE.

PRACTICAL NO :- 09

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

CODE :-

```
# Load dataset
lang_data <- read.csv("C:/Users/Arvind/Downloads/programming language trend over
time.csv")

# Check column names
colnames(lang_data)

# Create contingency table
lang_table <- rbind(
  Python = lang_data$Python,
  Java   = lang_data$Java,
  C     = lang_data$C..
)

# Chi-square test
chisq.test(lang_table)
```

The screenshot shows the RStudio interface with the following details:

- R Script:** The script window contains the R code provided above, including the loading of the dataset, checking of column names, creation of a contingency table, and execution of the chisq.test function.
- Console:** The console window shows the execution of the script. It highlights an error message: "Error in chisq.test(lang\_table) : at least one entry of 'x' must be positive".
- Environment:** The environment pane shows various objects defined in the session, such as 'lang\_data' (262 obs. of 4 variables), 'lang\_table' (int [1:3, 1:262] 55 55 18 52 50 16 56 56 17 56...), and 't\_test\_result' (List of 10).
- Plots:** No plots are visible in this screenshot.
- Session:** The session pane shows the history of commands entered.
- System:** The taskbar at the bottom includes icons for Start, Search, Task View, File Explorer, Edge, Mail, Photos, OneDrive, Google Chrome, and R.