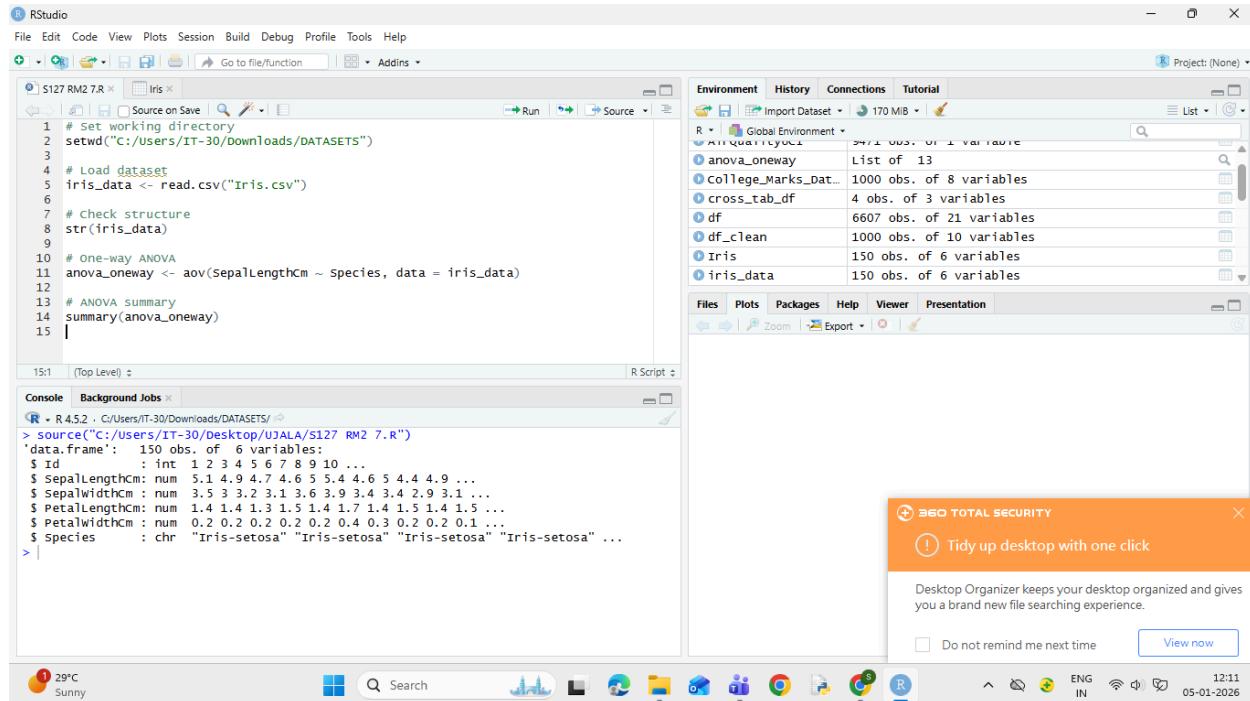


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### 7 Performing one-way ANOVA using aov() (R).



The screenshot shows the RStudio interface with the following details:

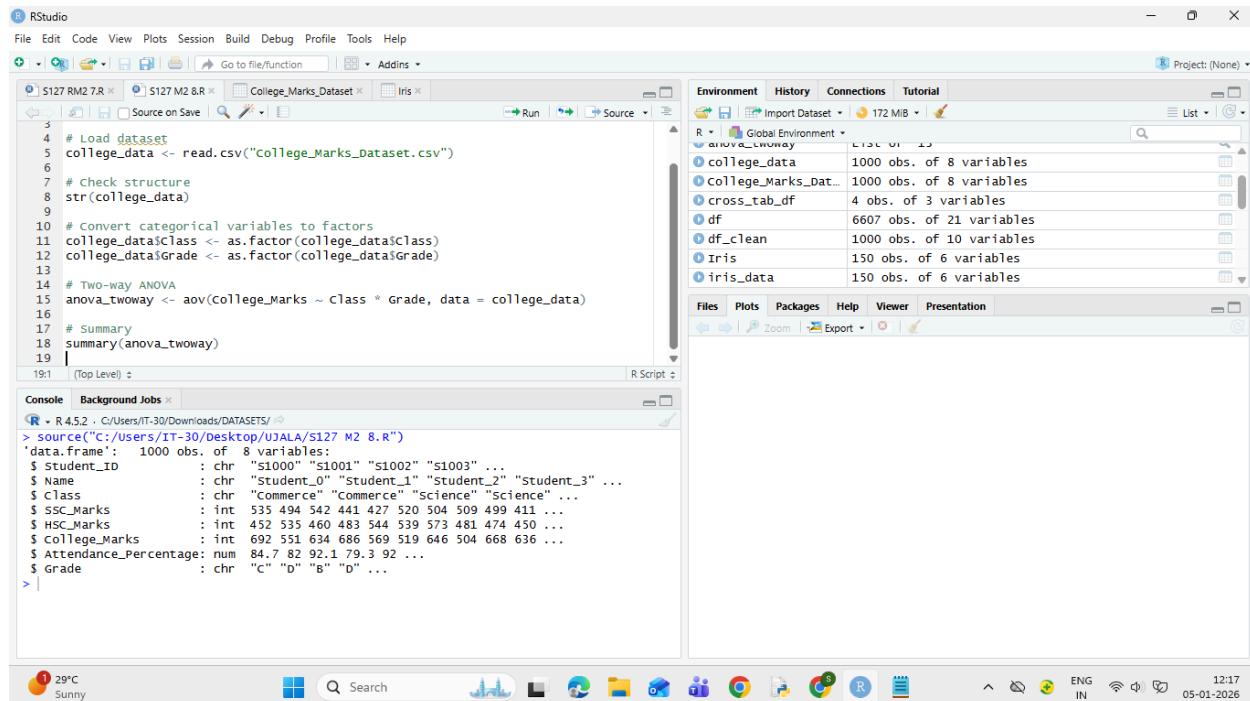
- File Bar:** File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help.
- Project Bar:** Project: (None).
- Source Editor:** Shows an R script named "S127 RM2 7.R" with the following code:

```

1 # Set working directory
2 setwd("C:/Users/IT-30/Desktop/DATASETS")
3
4 # Load dataset
5 iris_data <- read.csv("Iris.csv")
6
7 # Check structure
8 str(iris_data)
9
10 # One-way ANOVA
11 aov_oneway <- aov(SepalLengthCm ~ Species, data = iris_data)
12
13 # ANOVA summary
14 summary(aov_oneway)
15

```
- Console:** Displays the R session output for the above code, showing the structure of the "iris\_data" dataset and the results of the one-way ANOVA.
- Environment View:** Shows the global environment with objects like "anova\_oneway", "College\_Marks\_Data", etc.
- Plots:** No plots are visible.
- Help:** No help is visible.
- Viewer:** No viewer content is visible.
- Presentation:** No presentation content is visible.
- System Tray:** Shows weather (29°C, Sunny), system icons, and a 360 Total Security notification.

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



The screenshot shows the RStudio interface with the following details:

- File Bar:** File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Help.
- Project Bar:** Project: (None).
- Source Editor:** Shows an R script named "S127 M2 8.R" with the following code:

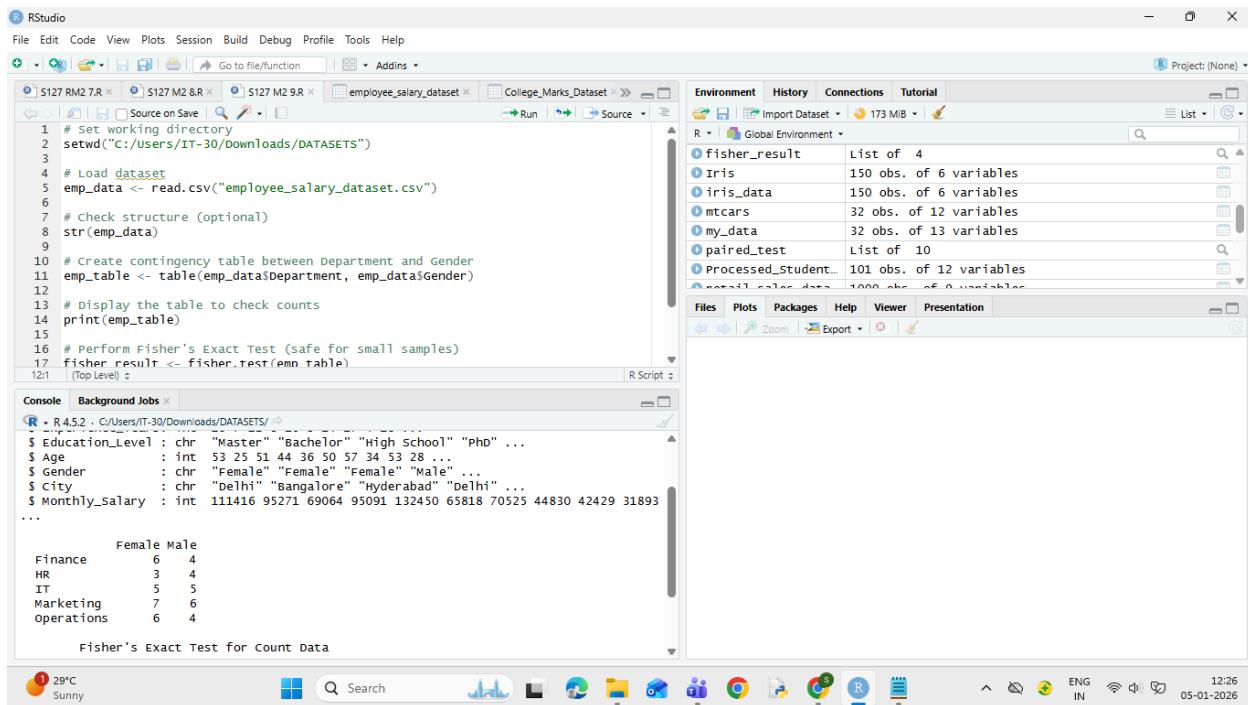
```

3
4 # Load dataset
5 college_data <- read.csv("College_Marks_Dataset.csv")
6
7 # Check structure
8 str(college_data)
9
10 # Convert categorical variables to factors
11 college_data$Class <- as.factor(college_data$Class)
12 college_data$Grade <- as.factor(college_data$Grade)
13
14 # Two-way ANOVA
15 aov_twoway <- aov(College_Marks ~ Class * Grade, data = college_data)
16
17 # Summary
18 summary(aov_twoway)
19

```
- Console:** Displays the R session output for the above code, showing the structure of the "college\_data" dataset and the results of the two-way ANOVA.
- Environment View:** Shows the global environment with objects like "anova\_twoway", "college\_data", etc.
- Plots:** No plots are visible.
- Help:** No help is visible.
- Viewer:** No viewer content is visible.
- Presentation:** No presentation content is visible.
- System Tray:** Shows weather (29°C, Sunny), system icons, and a 360 Total Security notification.

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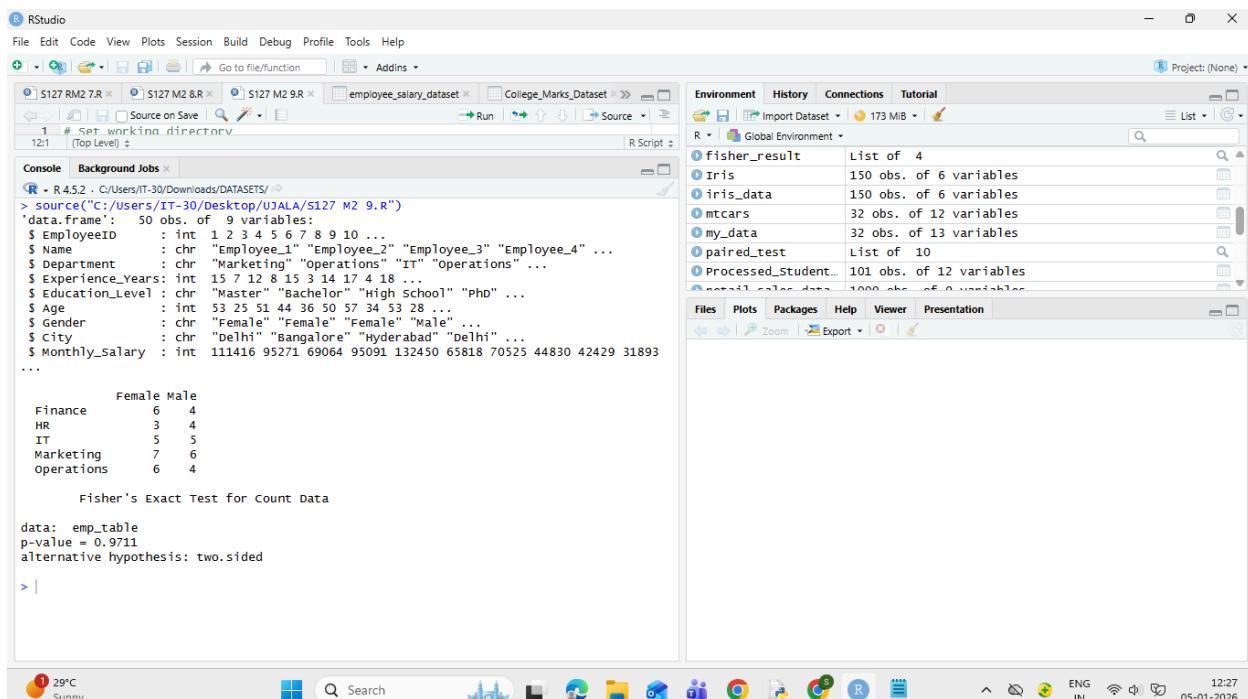
### 9 Conducting Chi-square tests using chisq.test() (R)



```

RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
+ - Go to file/function Addins
S127 RM2 7.R x S127 M2 8.R x S127 M2 9.R x employee_salary_dataset x College_Marks_Dataset x
1 # Set working directory
2 setwd("C:/Users/IT-30/Downloads/DATASETS")
3
4 # Load dataset
5 emp_data <- read.csv("employee_salary_dataset.csv")
6
7 # Check structure (optional)
8 str(emp_data)
9
10 # Create contingency table between Department and Gender
11 emp_table <- table(emp_data$Department, emp_data$Gender)
12
13 # Display the table to check counts
14 print(emp_table)
15
16 # Perform Fisher's Exact Test (safe for small samples)
17 fisher_result <- fisher.test(emp_table)
18
19 (Top Level) : R Script
Console Background Jobs x
R + R 4.5.2 - C:/Users/IT-30/Downloads/DATASETS/
$ Education_Level : chr "Master" "Bachelor" "High School" "PhD" ...
$ Age : int 53 25 51 44 36 50 57 34 53 28 ...
$ Gender : chr "Female" "Female" "Female" "Male" ...
$ City : chr "delhi" "Bangalore" "Hyderabad" "delhi" ...
$ Monthly_Salary : int 111416 95271 69064 95091 132450 65818 70525 44830 42429 31893 ...
.
.
.
Female Male
Finance 6 4
HR 3 4
IT 5 5
Marketing 7 6
Operations 6 4
Fisher's Exact Test for Count Data

```



```

RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
+ - Go to file/function Addins
S127 RM2 7.R x S127 M2 8.R x S127 M2 9.R x employee_salary_dataset x College_Marks_Dataset x
1 # Set working directory
2 source("C:/Users/IT-30/Desktop/UJALA/S127 M2 9.R")
3
4 data.frame': 50 obs. of 9 variables:
$ EmployeeID : int 1 2 3 4 5 6 7 8 9 10 ...
$ Name : chr "Employee_1" "Employee_2" "Employee_3" "Employee_4" ...
$ Department : chr "Marketing" "operations" "IT" "Operations" ...
$ Experience_Years: int 15 7 12 8 15 3 14 17 4 18 ...
$ Education_Level : chr "Master" "Bachelor" "High School" "PhD" ...
$ Age : int 53 25 51 44 36 50 57 34 53 28 ...
$ Gender : chr "Female" "Female" "Female" "Male" ...
$ City : chr "delhi" "Bangalore" "Hyderabad" "delhi" ...
$ Monthly_Salary : int 111416 95271 69064 95091 132450 65818 70525 44830 42429 31893 ...
.
.
.
Female Male
Finance 6 4
HR 3 4
IT 5 5
Marketing 7 6
Operations 6 4
Fisher's Exact Test for Count Data

```