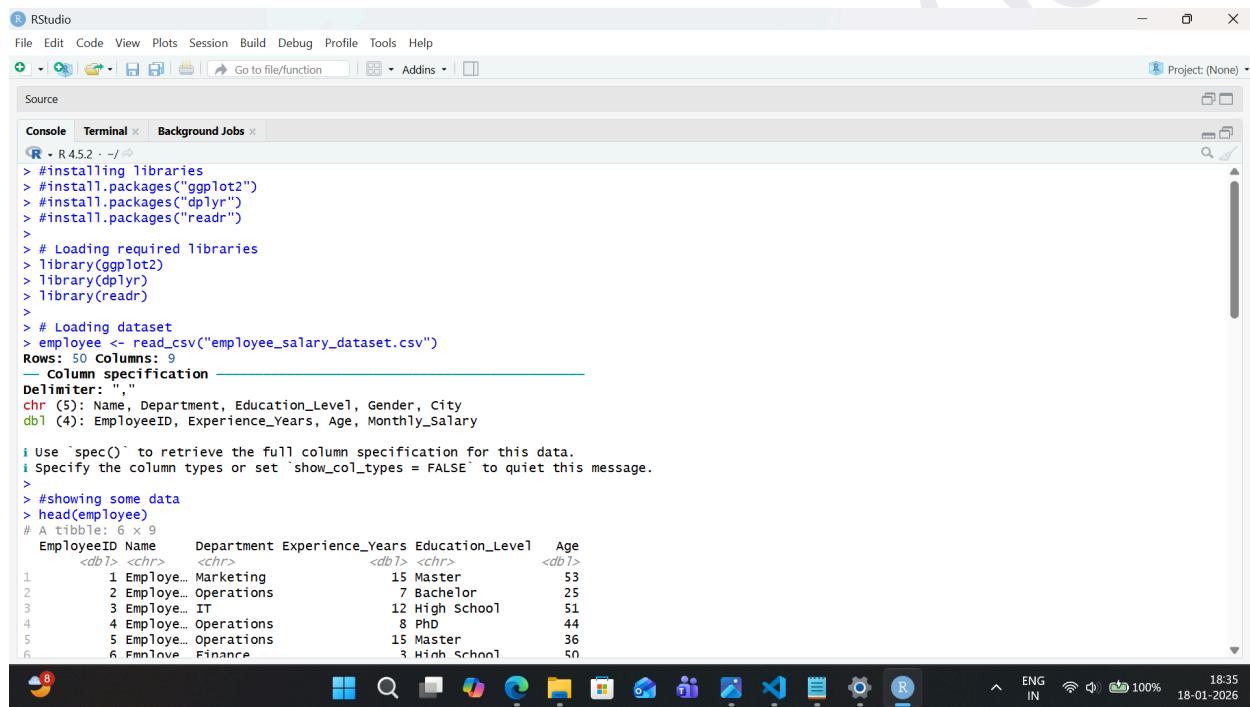


## **Practical No 10 Module II**

**Aim :** Creating graphical reports using ,ggplot2 (R).

- Scatter plot
- Pie chart
- High-Low chart

**Output :**



The screenshot shows the RStudio interface with the following R code in the Console tab:

```
RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
File Edit Code View Plots Session Build Debug Profile Tools Help
Source Terminal Background Jobs
R 4.5.2 - /-
> #installing libraries
> #install.packages("ggplot2")
> #install.packages("dplyr")
> #install.packages("readr")
>
> # Loading required libraries
> library(ggplot2)
> library(dplyr)
> library(readr)
>
> # Loading dataset
> employee <- read_csv("employee_salary_dataset.csv")
Rows: 50 Columns: 9
Column specification:
Delimiter: ","
chr (5): Name, Department, Education_Level, Gender, City
dbl (4): EmployeeID, Experience_Years, Age, Monthly_Salary
i Use `spec()` to retrieve the full column specification for this data.
i Specify the column types or set `show_col_types = FALSE` to quiet this message.
>
> #showing some data
> head(employee)
# A tibble: 6 × 9
  EmployeeID Name      Department Experience_Years Education_Level   Age
    <dbl> <chr>    <chr>           <dbl> <chr>        <dbl>
1       1 Employee Marketing          15 Master        53
2       2 Employee Operations         7 Bachelor     25
3       3 Employee IT                12 High School  51
4       4 Employee Operations         8 PhD          44
5       5 Employee Operations        15 Master        36
6       6 Employee Finance          3 High School  50
```

The screenshot also shows the Windows taskbar at the bottom with various application icons.

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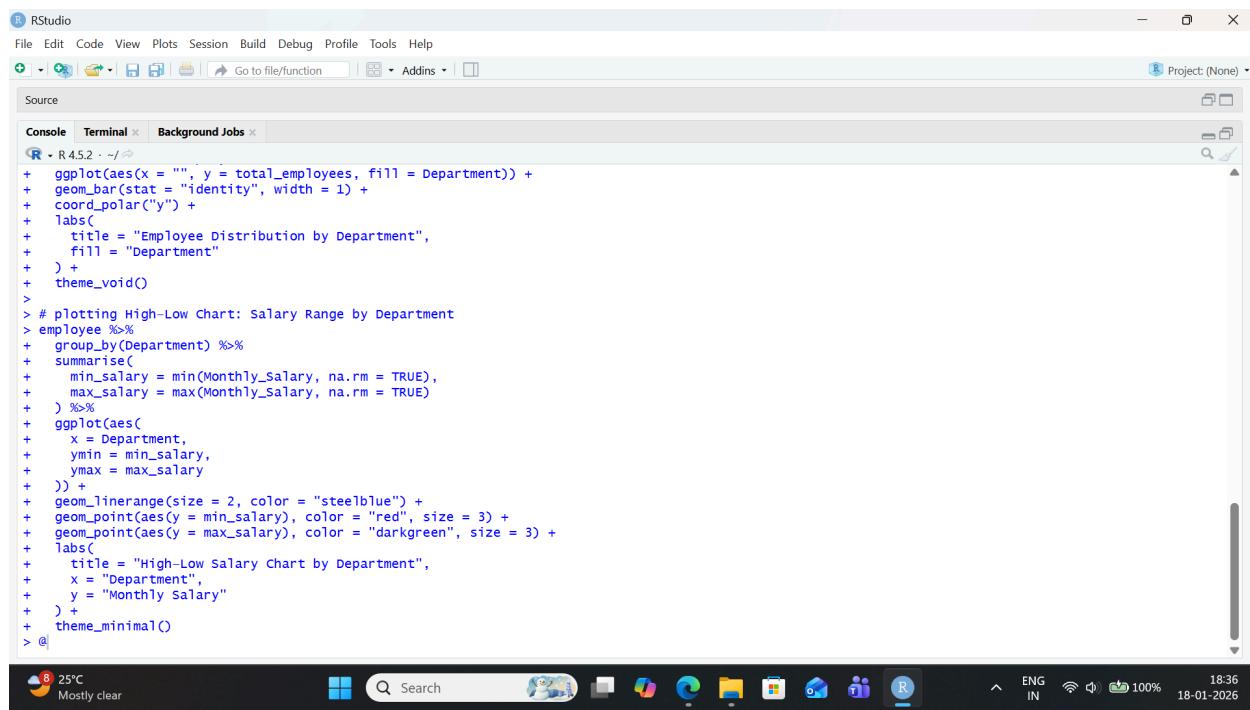
## SUBJECT : R Programming

RStudio  
File Edit Code View Plots Session Build Debug Profile Tools Help  
Source  
Console Terminal Background Jobs  
R - R 4.5.2 - ~/  
<dbl> <chr> <chr> <dbl> <chr> <dbl>  
1 Employee... Marketing 15 Master 53  
2 Employee... Operations 7 Bachelor 25  
3 Employee... IT 12 High School 51  
4 Employee... Operations 8 PhD 44  
5 Employee... Operations 15 Master 36  
6 Employee... Finance 3 High School 50  
# i 3 more variables: Gender <chr>, City <chr>, Monthly\_Salary <dbl>  
> summary(employee)  
EmployeeID Name Department  
Min. : 1.00 Length:50 Length:50  
1st Qu.:13.25 Class :character Class :character  
Median :25.50 Mode :character Mode :character  
Mean :25.50  
3rd Qu.:37.75  
Max. :50.00  
Experience\_Years Education\_Level Age  
Min. : 1.00 Length:50 Min. :22.00  
1st Qu.: 5.25 Class :character 1st Qu.:28.25  
Median :10.00 Mode :character Median :43.50  
Mean : 9.90 Mean :39.76  
3rd Qu.:14.75 3rd Qu.:49.00  
Max. :19.00 Max. :57.00  
Gender City Monthly\_Salary  
Length:50 Length:50 Min. : 28420  
Class :character Class :character 1st Qu.: 59424  
Mode :character Mode :character Median : 73891  
Mean : 82289  
3rd Qu.:107219  
Max. :149123  
> #Plotting Scatter Plot: Experience vs Monthly Salary

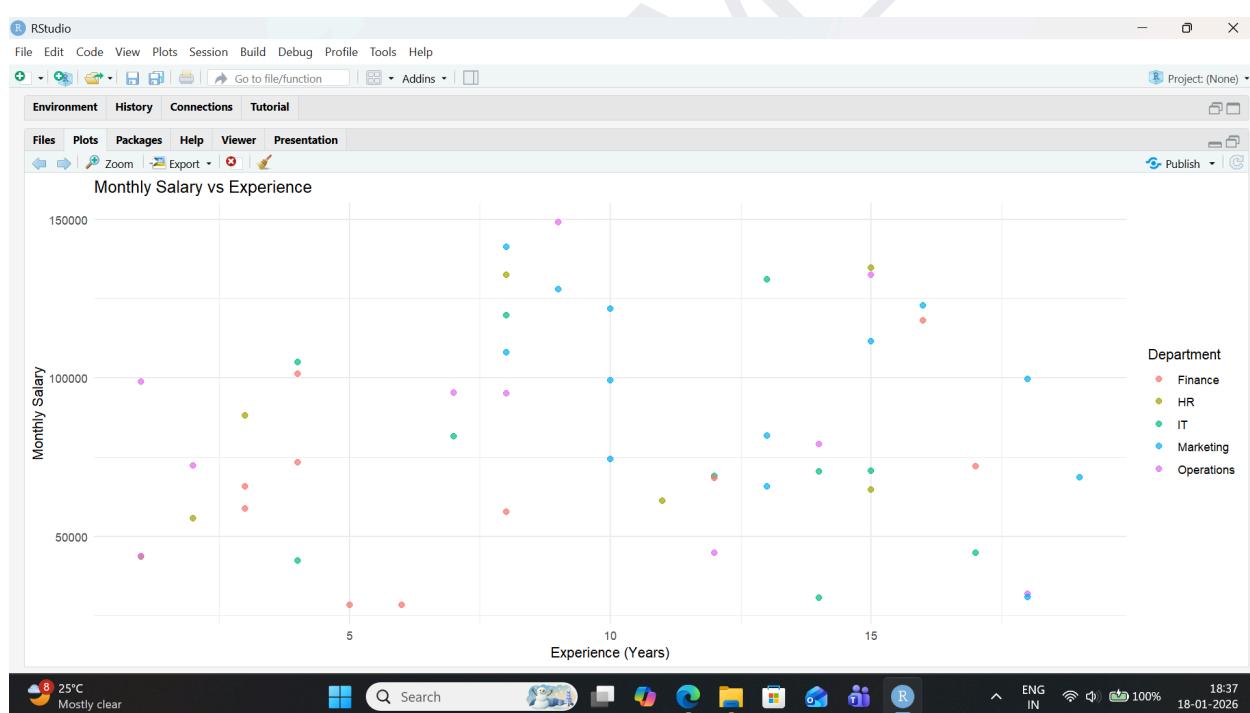
RStudio  
File Edit Code View Plots Session Build Debug Profile Tools Help  
Source  
Console Terminal Background Jobs  
R - R 4.5.2 - ~/  
> #Plotting Scatter Plot: Experience vs Monthly Salary  
> ggplot(employee,  
+ aes(x = Experience\_Years,  
+ y = Monthly\_Salary,  
+ color = Department)) +  
+ geom\_point(alpha = 0.7, size = 2) +  
+ labs(  
+ title = "Monthly Salary vs Experience",  
+ x = "Experience (years)",  
+ y = "Monthly Salary",  
+ color = "Department"  
+ ) +  
+ theme\_minimal()  
> # plotting Pie Chart: Employee Distribution by Department  
> employee %>%  
+ group\_by(Department) %>%  
+ summarise(total\_employees = n()) %>%  
+ ggplot(aes(x = "", y = total\_employees, fill = Department)) +  
+ geom\_bar(stat = "identity", width = 1) +  
+ coord\_polar("y") +  
+ labs(  
+ title = "Employee Distribution by Department",  
+ fill = "Department"  
+ ) +  
+ theme\_void()  
> # plotting High-Low Chart: Salary Range by Department  
> employee %>%  
+ group\_by(Department) %>%  
+ summarise(  
+ min\_salary = min(Monthly\_Salary, na.rm = TRUE),

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## SUBJECT : R Programming

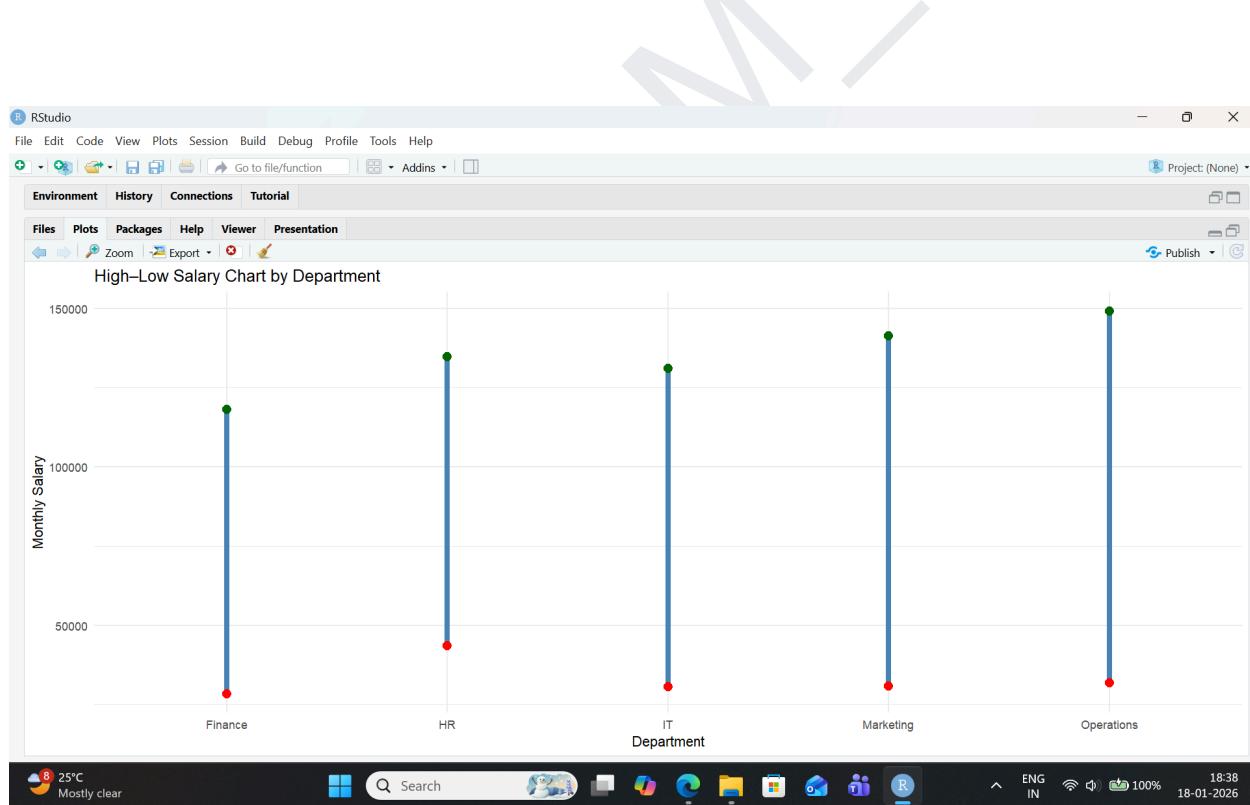
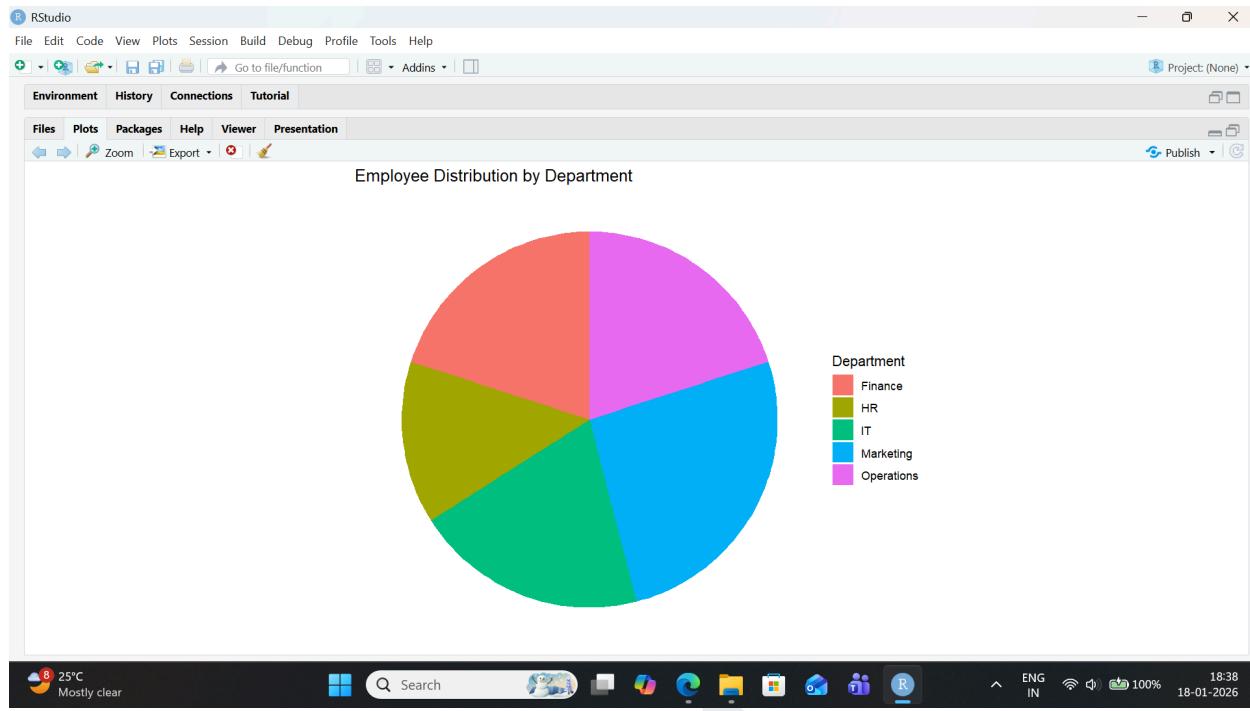


```
R 4.5.2 · ~/d
+ ggplot(aes(x = "", y = total_employees, fill = Department)) +
+ geom_bar(stat = "identity", width = 1) +
+ coord_polar("y") +
+ labs(
+   title = "Employee Distribution by Department",
+   fill = "Department"
+ ) +
+ theme_void()
> # plotting High-Low Chart: Salary Range by Department
> employee %>%
+   group_by(Department) %>%
+   summarise(
+     min_salary = min(Monthly_Salary, na.rm = TRUE),
+     max_salary = max(Monthly_Salary, na.rm = TRUE)
+   ) %>%
+   ggplot(aes(
+     x = Department,
+     ymin = min_salary,
+     ymax = max_salary
+   )) +
+   geom_linerange(size = 2, color = "steelblue") +
+   geom_point(aes(y = min_salary), color = "red", size = 3) +
+   geom_point(aes(y = max_salary), color = "darkgreen", size = 3) +
+   labs(
+     title = "High-Low Salary Chart by Department",
+     x = "Department",
+     y = "Monthly Salary"
+   ) +
+   theme_minimal()
```



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SUBJECT : R Programming



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