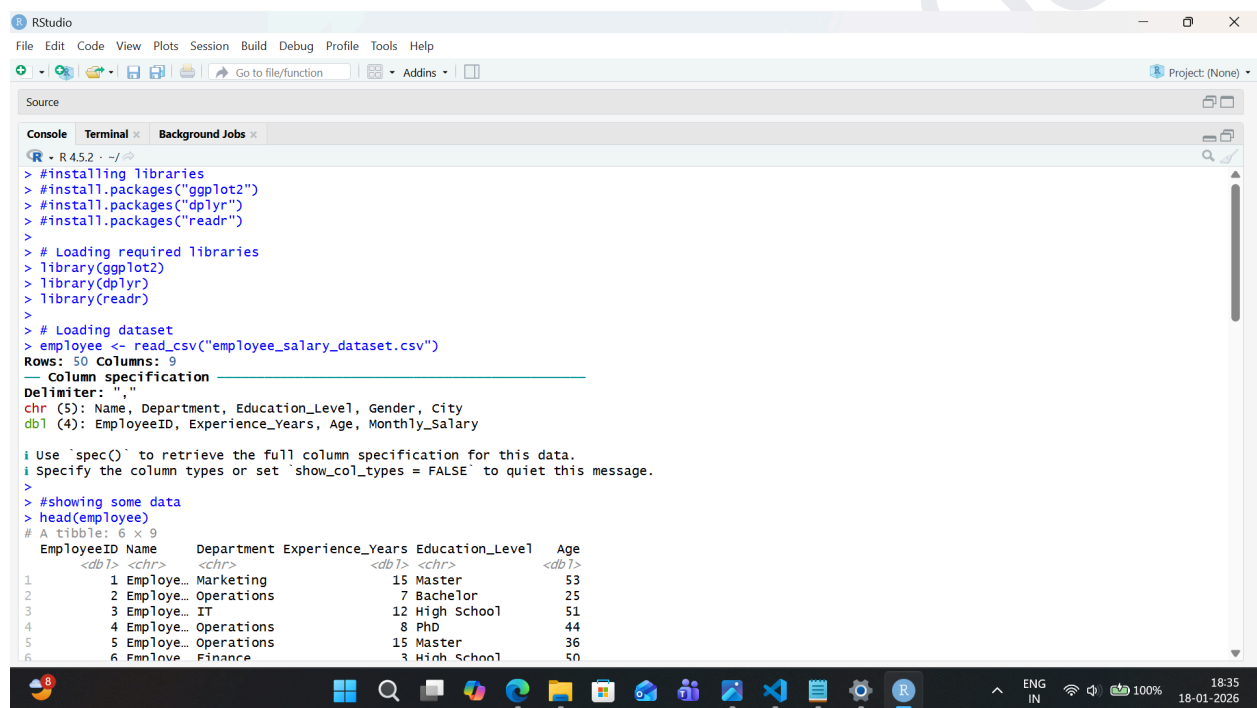


Practical No 10 Module II

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

- Scatter plot
- Pie chart
- High-Low chart

Output :



```
R - R4.5.2 - ~/R
File Edit Code View Plots Session Build Debug Profile Tools Help
Go to file/function Addins Project: (None)
Source
Console Terminal Background Jobs
R - R4.5.2 - ~/R
> #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 x 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
```

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```
RStudio
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Go to file/function Addins Project: (None)

Source
Console Terminal Background Jobs
R - R 4.5.2 - ~/R
1 <dbl> <chr> <chr> <dbl> <chr> <dbl>
2 1 Employee... Marketing 15 Master 53
3 2 Employee... Operations 7 Bachelor 25
4 3 Employee... IT 12 High School 51
5 4 Employee... Operations 8 PhD 44
6 5 Employee... Operations 15 Master 36
7 6 Employee... Finance 3 High School 50
# 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
Go to file/function Addins Project: (None)

Source
Console Terminal Background Jobs
R - R 4.5.2 - ~/R
> #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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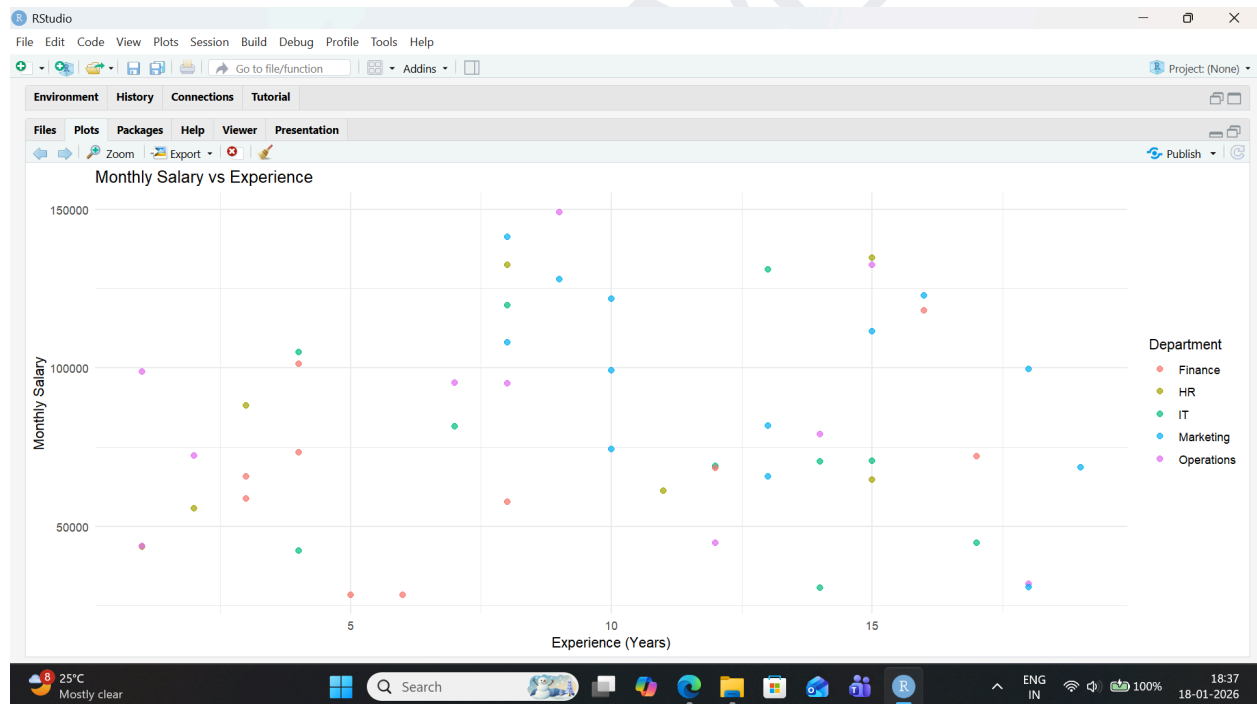
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```
RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Go to file/function Addins Project: (None)

Source
Console Terminal Background Jobs
R - R 4.5.2 - ~/
+ 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()
> @
```

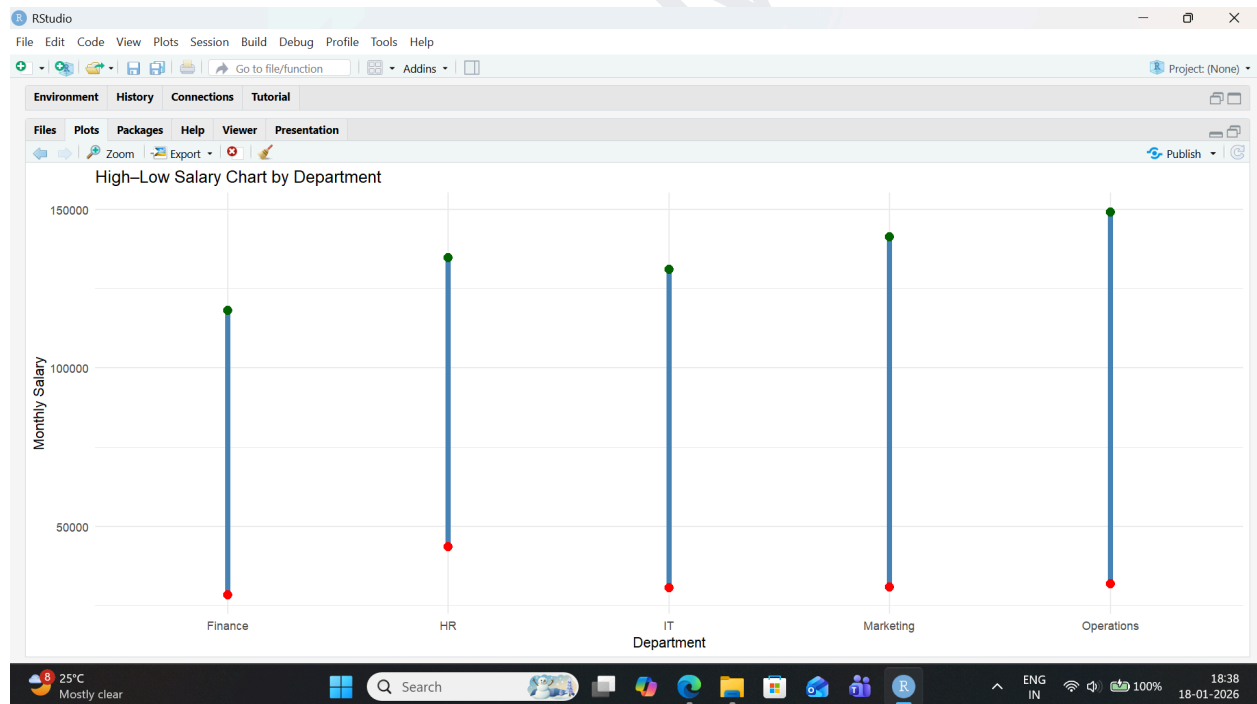
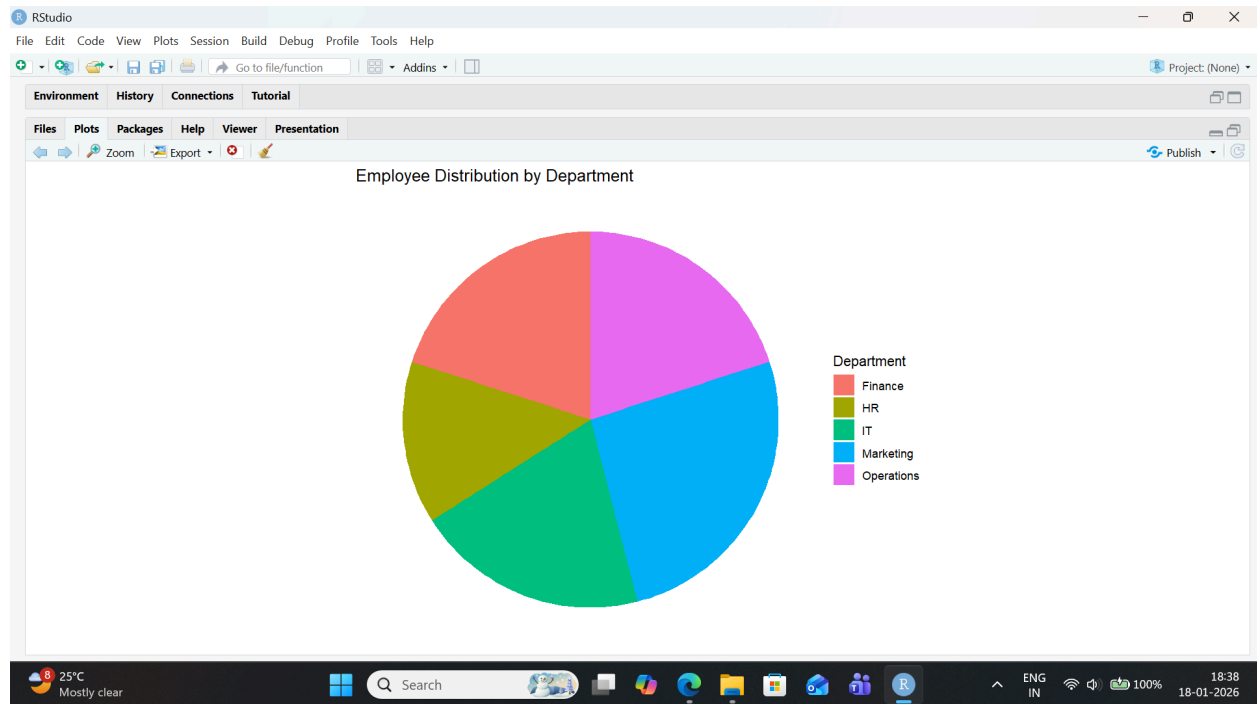


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