

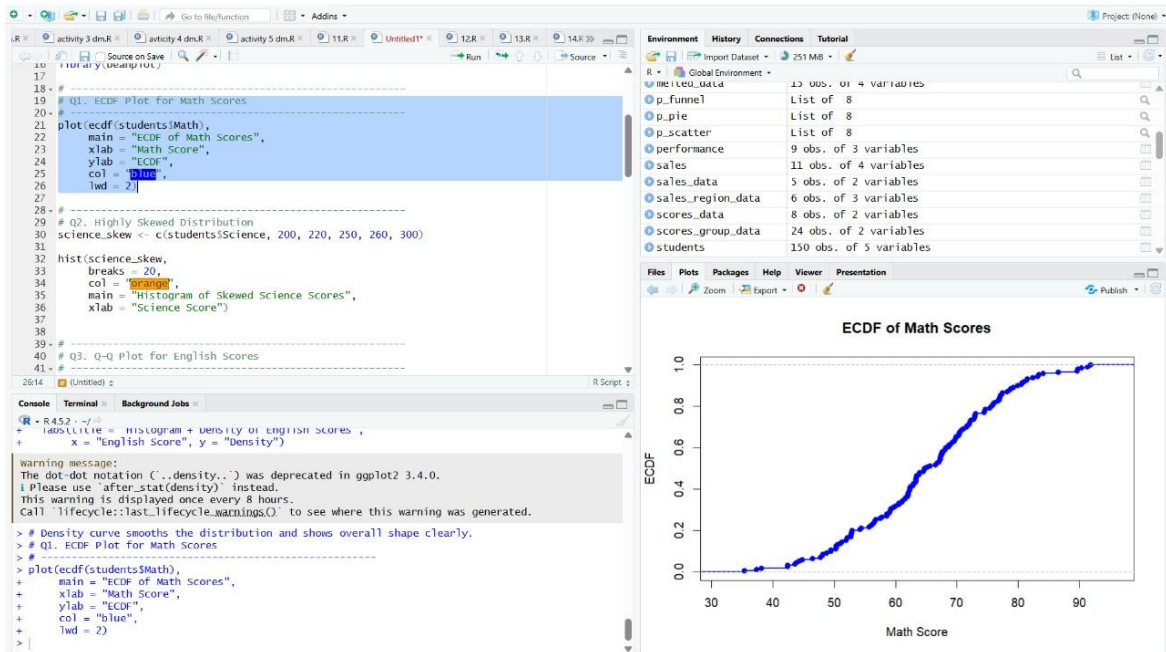
# DSA0609- DATA HANDLING AND DATA VISULIZATION

## LAB SESSION 4

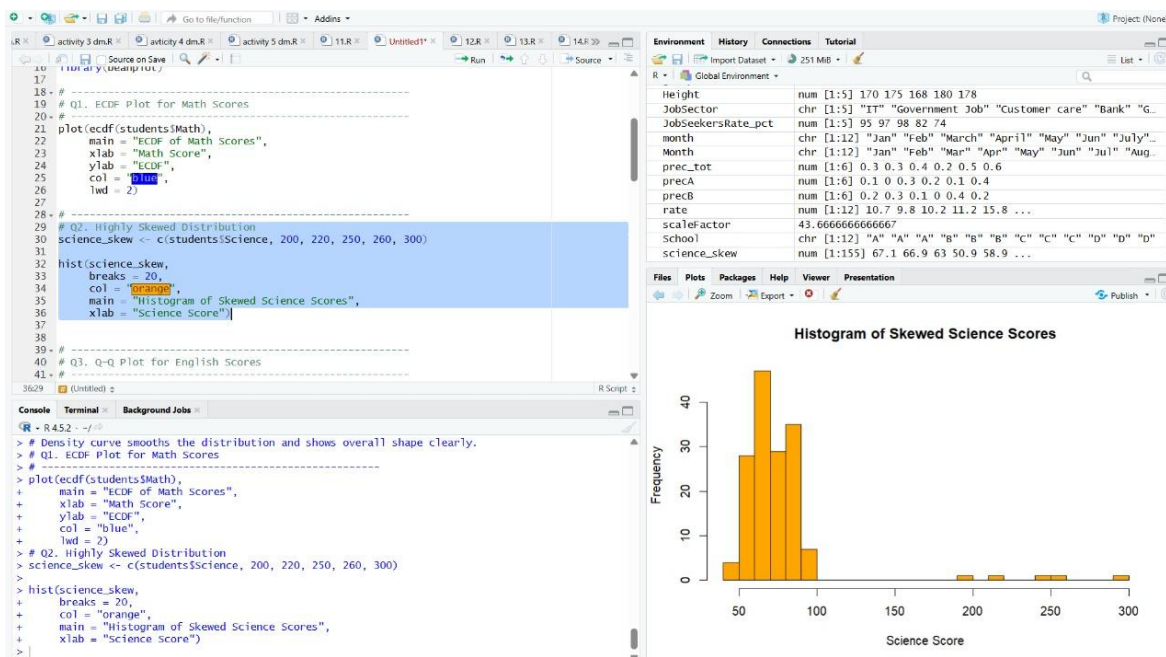
Name : Harissh M

Reg No : 192424014

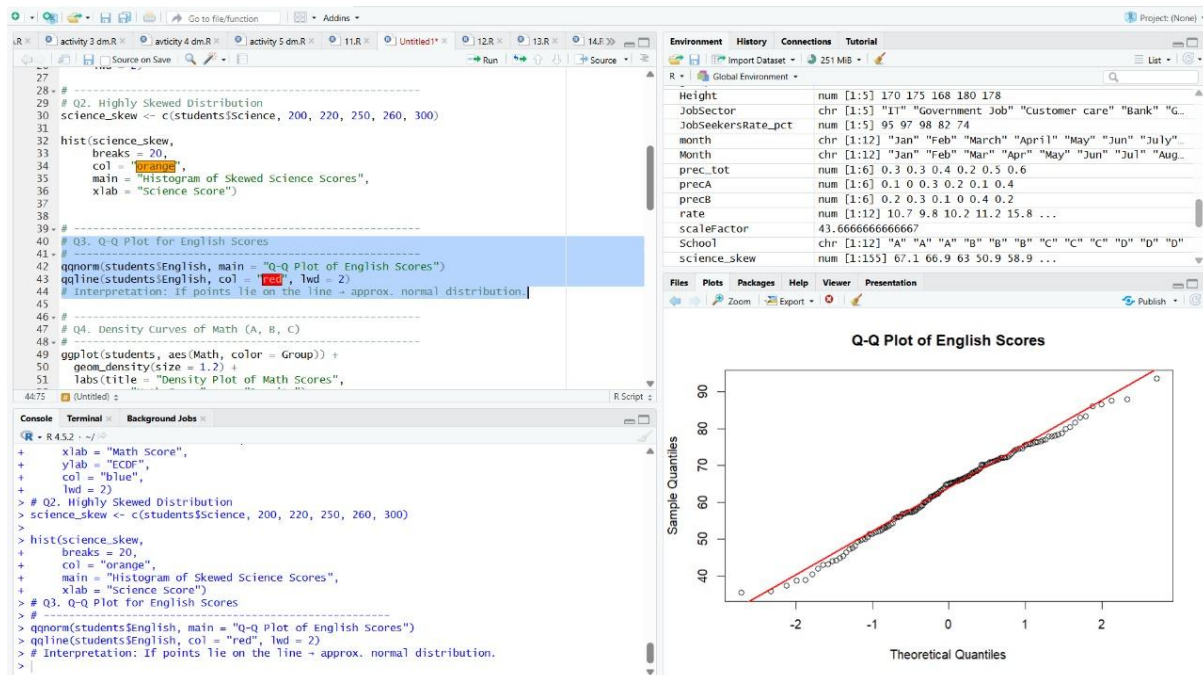
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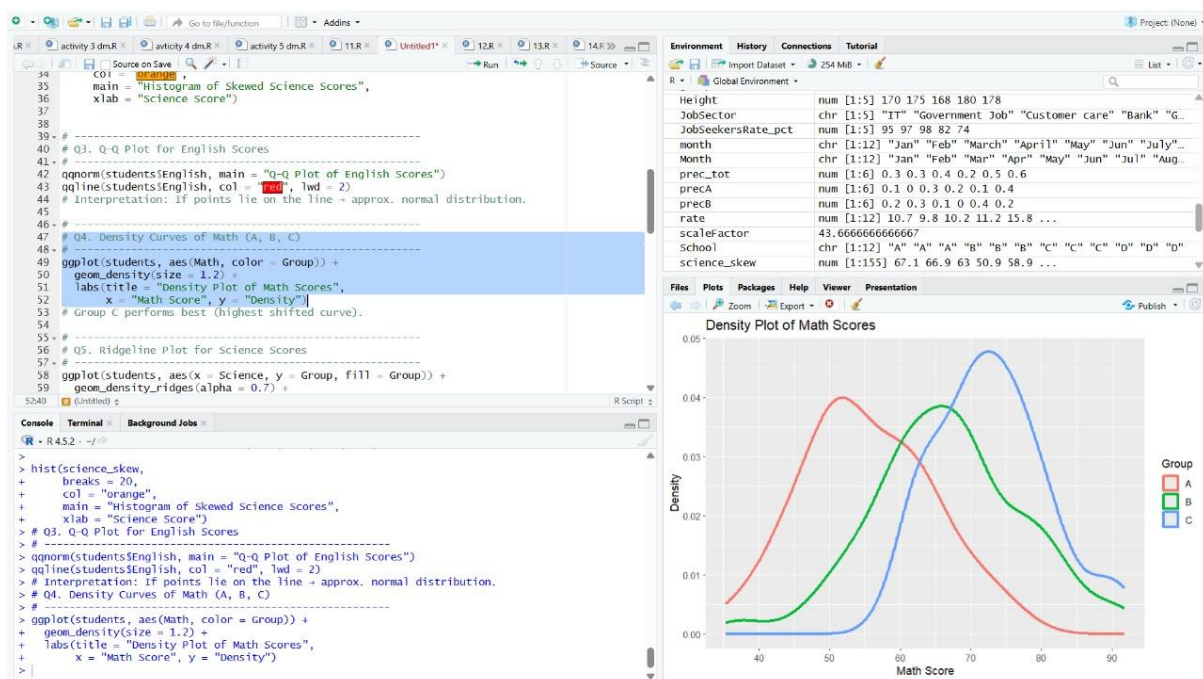
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The screenshot displays the RStudio interface with the following components:

- Source Editor (Left):** Contains R code for creating density plots and a ridgeline plot.
 

```

45 #-----
46 # Q4. Density Curves of Math (A, B, C)
47 #
48 ggplot(students, aes(Math, color = Group)) +
49   geom_density(size = 1.2) +
50   labs(title = "Density Plot of Math Scores",
51        x = "Math Score", y = "Density")
52 # Group C performs best (highest shifted curve).
53 #-----
54 # Q5. Ridgeline Plot for Science Scores
55 #
56 ggplot(students, aes(x = Science, y = Group, fill = Group)) +
57   geom_density_ridges(alpha = 0.7) +
58   labs(title = "Ridgeline Plot of Science Scores",
59        x = "Science Score", y = "Group")
60 # Purpose: Compare multiple distributions vertically and clearly.
61 #-----
62 # Q6. Bean Plot for English Scores
63 #
64 beanplot(English ~ Group,
65          data = students,
66          col = c("skyblue", "lightgreen", "pink"),
67          main = "Bean Plot of English Scores").

```
- Environment (Top Right):** Shows loaded objects including 'Height', 'JobSector', 'JobSeekersRate\_pct', 'month', 'Month', 'prec\_tot', 'precA', 'precB', 'rate', 'scalefactor', 'School', and 'science.skew'.
- Files, Plots, Packages, Help, Viewer, Presentation (Bottom Right):** The 'Plots' pane shows a 'Ridgeline Plot of Science Scores'.
- Console (Bottom Left):** Shows the execution of the R code, including the output of the density plot and the ridgeline plot.
 

```

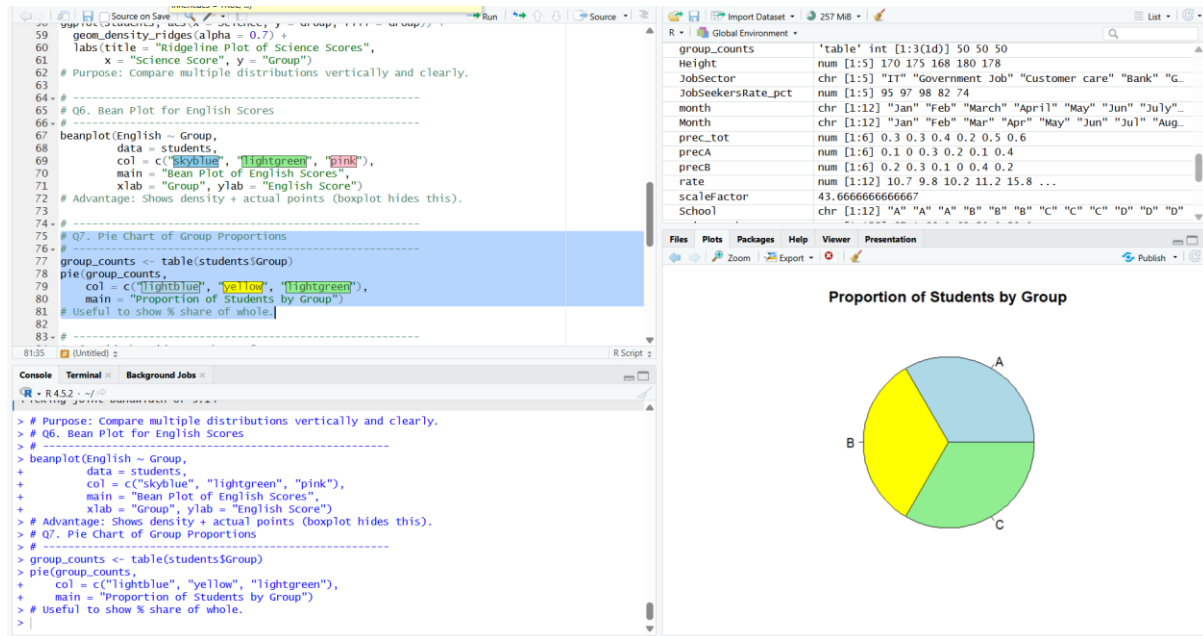
R> R4.52 - 7.0
> ggplot(students, aes(Math, col = red, lwd = 2))
> # Interpretation: If points lie on the line - approx. normal distribution.
> # Q4. Density Curves of Math (A, B, C)
> #
> ggplot(students, aes(Math, color = Group)) +
+   geom_density(size = 1.2) +
+   labs(title = "Density Plot of Math Scores",
+        x = "Math Score", y = "Density")
> # Q5. Ridgeline Plot for Science Scores
> #
> ggplot(students, aes(x = Science, y = Group, fill = Group)) +
+   geom_density_ridges(alpha = 0.7) +
+   labs(title = "Ridgeline Plot of Science Scores",
+        x = "Science Score", y = "Group")
Picking joint bandwidth of 3.14
> # Purpose: Compare multiple distributions vertically and clearly.

```
- Ridgeline Plot (Bottom Right):** A plot titled 'Ridgeline Plot of Science Scores' showing three overlapping density curves for the 'Science' variable, categorized by 'Group' (A, B, C). The x-axis is 'Science Score' (ranging from 50 to 90) and the y-axis is 'Group'. The legend indicates Group A is pink, Group B is light green, and Group C is sky blue. The curves are vertically offset for clarity.

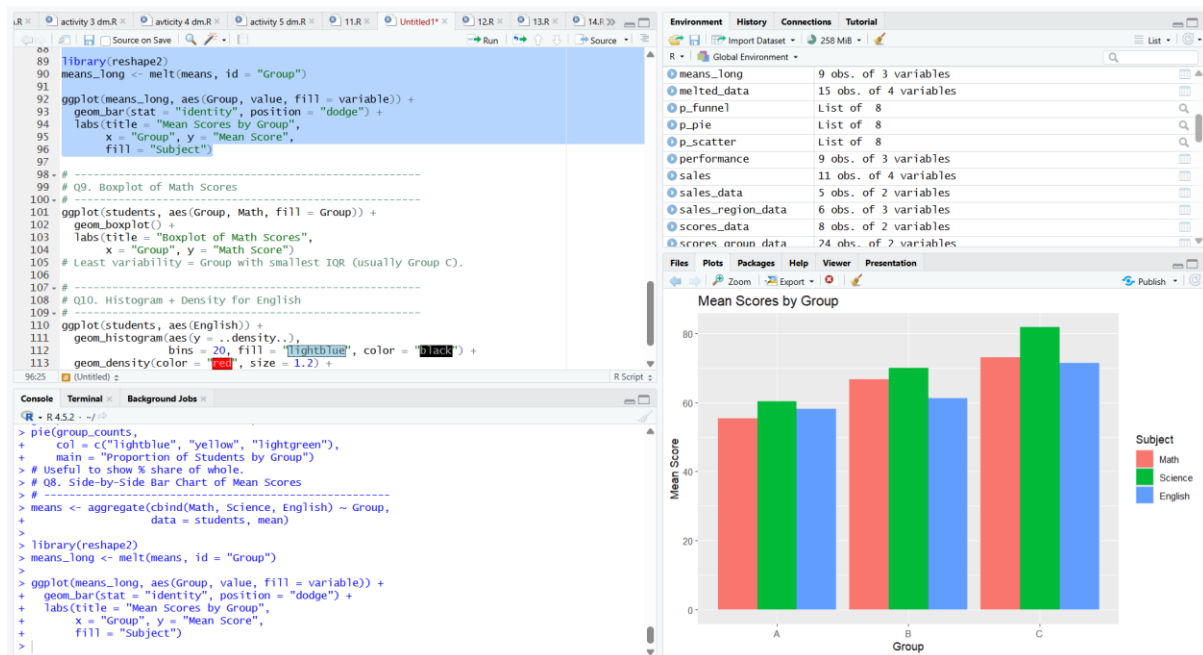
```

52 x = "Math Score", y = "Density"
53 # Group C performs best (highest shifted curve).
54 -----
55 # Q5. Ridgeline Plot for Science Scores
56 -----
57 #
58 ggpplot(students, aes(x = Science, y = Group, fill = Group)) +
59   geom_density_ridges(alpha = 0.7) +
60   labs(title = "Ridgeline Plot of Science Scores",
61        x = "Science Score", y = "Group")
62 # Purpose: Compare multiple distributions vertically and clearly.
63 -----
64 #
65 # Q6. Bean Plot for English Scores
66 -----
67 beanplot(English ~ Group,
68          data = students,
69          col = c("skyblue", "lightgreen", "pink"),
70          main = "Bean Plot of English Scores",
71          xlab = "Group", ylab = "English Score")
72 # Advantage: Shows density + actual points (boxplot hides this).
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74 #
75 # Q7. Pie Chart of Group Proportions
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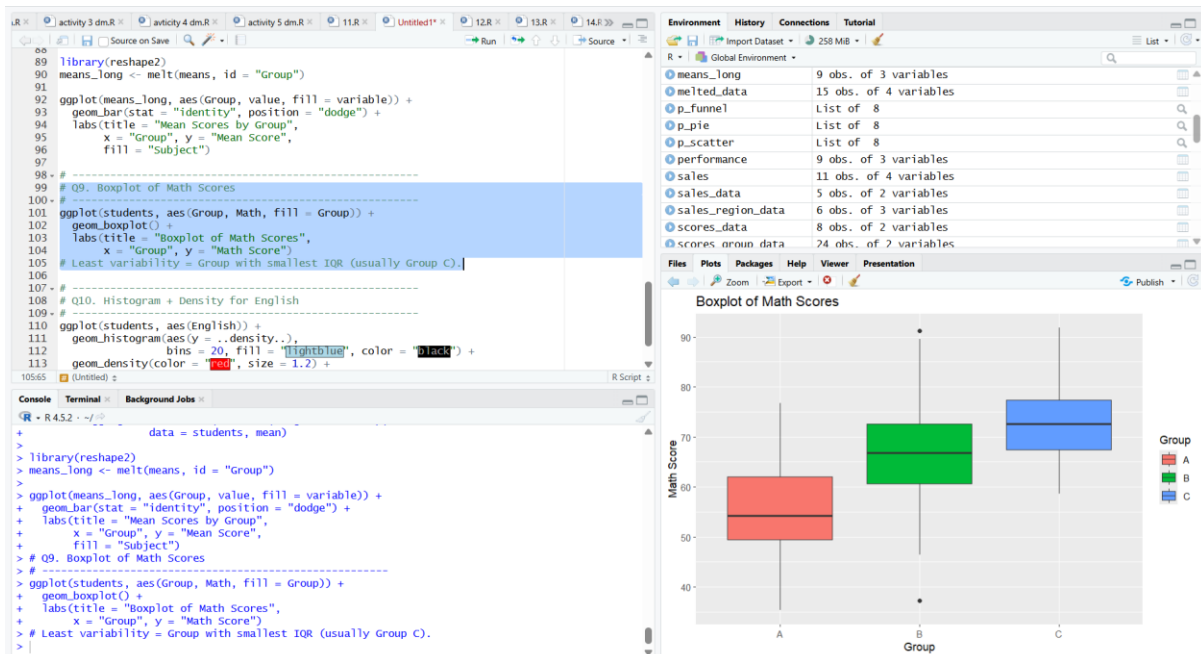
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