

Module 5 - Creating a bar chart

created by

R Team, FOSSEE, IIT Bombay

and

contributed by

Mr. Digvijay Singh,
Project Research Associate,
R Team, FOSSEE, IIT Bombay

Mrs. Usha Viswanathan,
Sr. Project Manager,
FOSSEE, IIT Bombay

under the guidance of

Prof. Radhendushka Srivastava,
Mathematics Department, IIT Bombay

1 November 2022

Steps to create a bar chart in R

This module illustrates the procedure to create a bar chart in R. All below-mentioned commands should be executed in the R console.

Step 1. Create and store the frequency table of a discrete data column in the variable **frequency_table** using the instructions mentioned in Module 4.

```
data <- Indian_Agriculture_Data$PFS
frequency_table <- table(data)
```

Step 2. Create a bar chart by passing **frequency_table** as input to the **barplot()** function of R.

```
barplot(frequency_table)
```

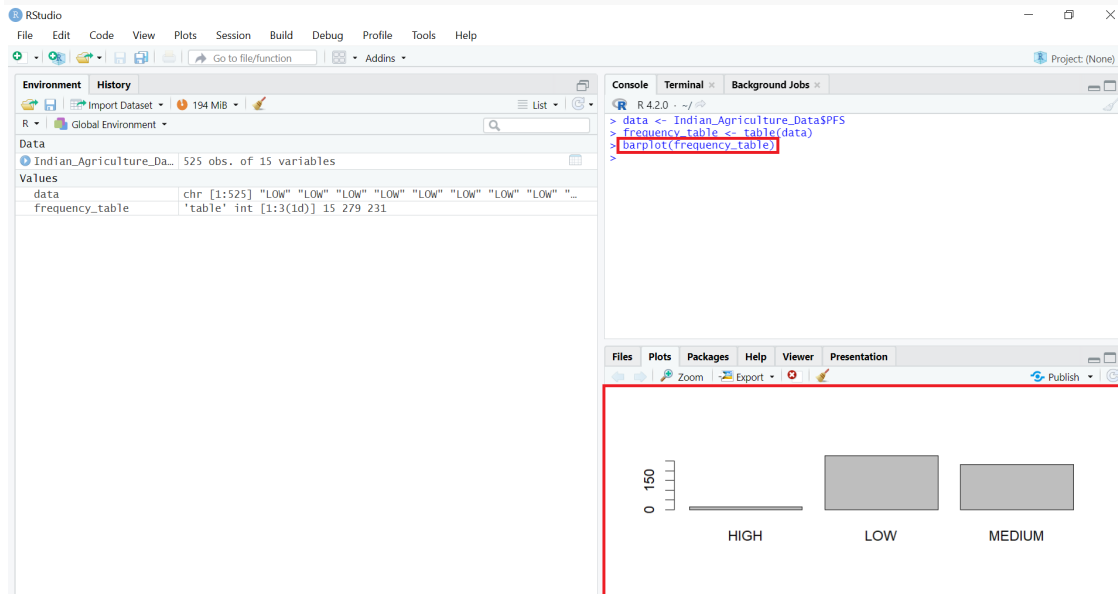


Figure 1: Bar plot of the **PFS** column data.

Step 3. Add a title to the bar chart by passing text input to the *main* argument of the **barplot()** function.

```
barplot(frequency_table,
        main = "Phosphorus fertility status")
```

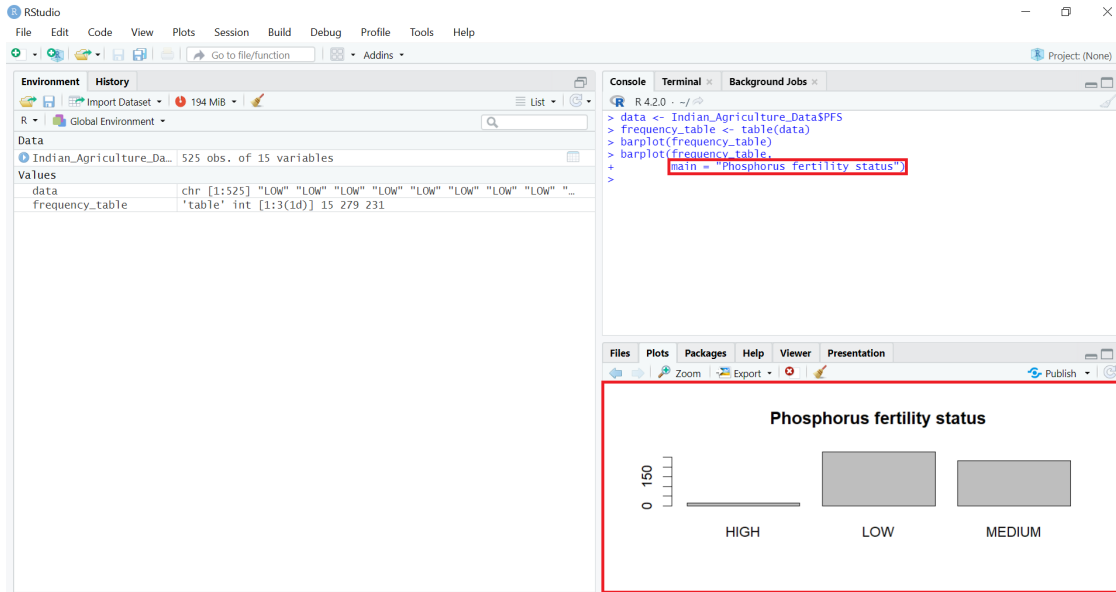


Figure 2: Bar plot with title.

Step 4. Add label to the axes of the bar chart by passing text input to the `xlab` and `ylab` arguments of the `barplot()` function.

```
barplot(frequency_table,
        main = "Phosphorus fertility status",
        xlab = "Status", ylab = "Count")
```

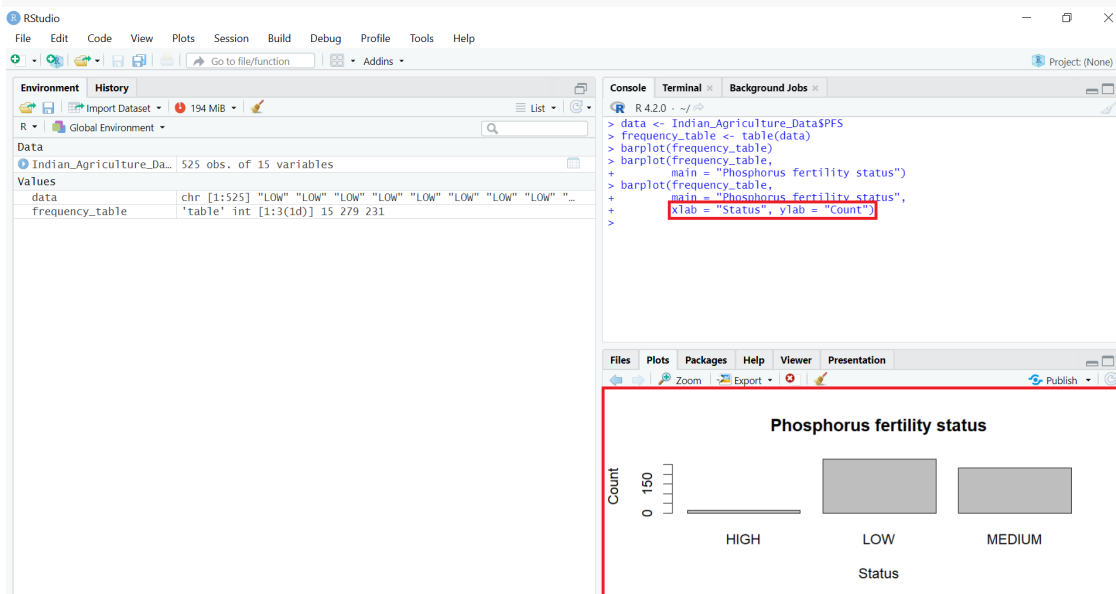


Figure 3: Bar plot with label for each axis.

Step 5. Add fill and border color to the bar chart by passing color names to the `col` and `border` arguments of the `barplot()` function, respectively.

```

barplot(frequency_table,
        main = "Phosphorus fertility status",
        xlab = "Status", ylab = "Count",
        col = "yellow", border = "green")

```

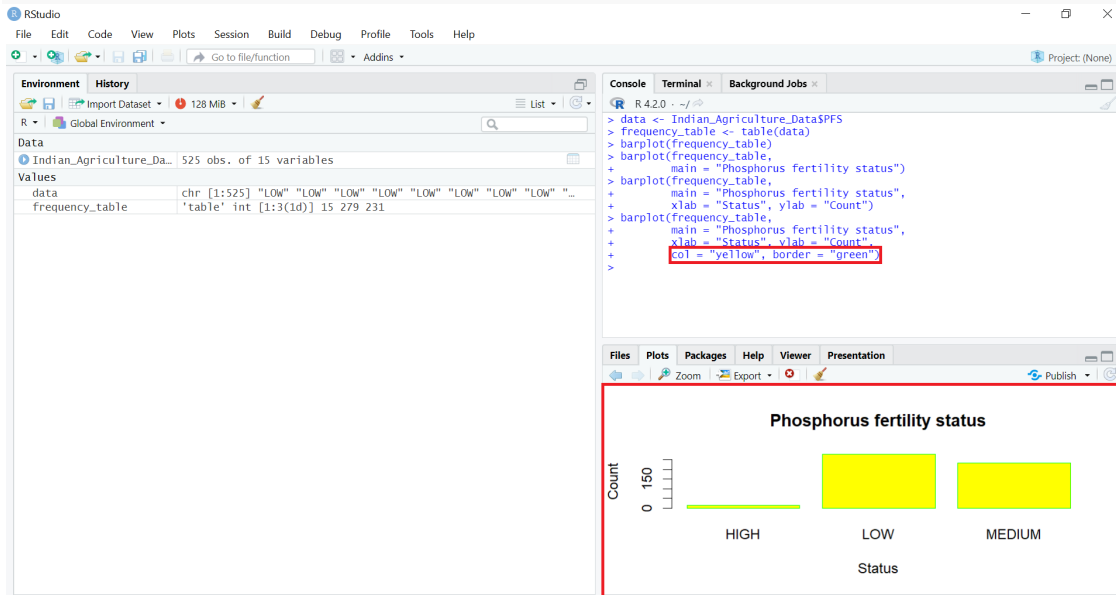


Figure 4: Bar plot with colored bars.

Step 6. Instead of adding the same color to all bars, add *orange* to the first bar, *yellow* to the second bar and *blue* to the third bar by passing color names (separated by comma) to the `col` argument of the `barplot()` function.

```

barplot(frequency_table,
        main = "Phosphorus fertility status",
        xlab = "Status", ylab = "Count",
        col = c("orange", "yellow", "blue"), border = "green")

```

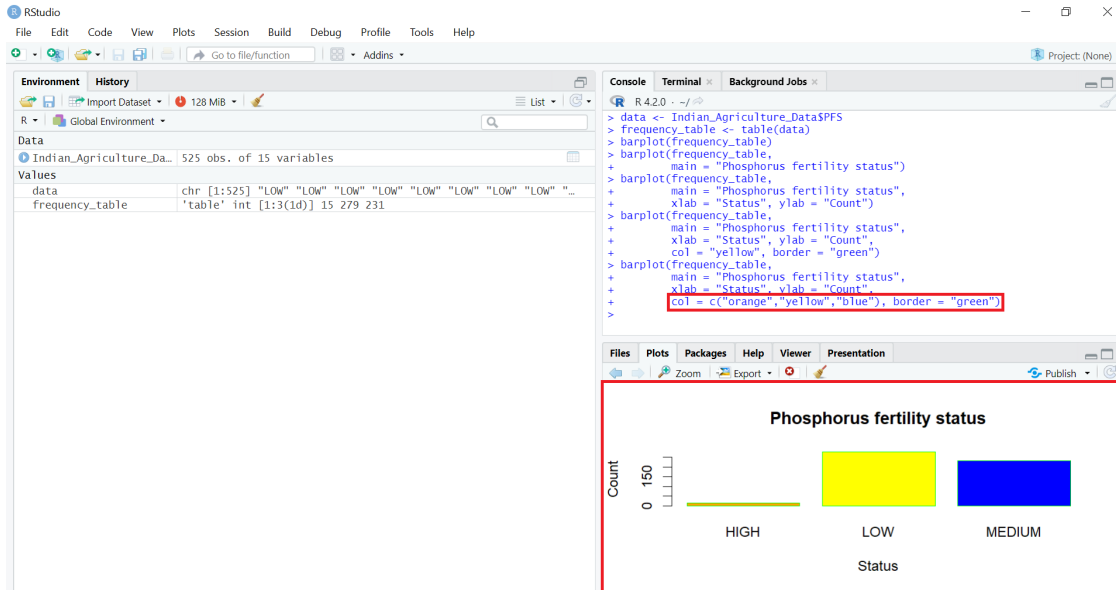


Figure 5: Bar plot with bars of different color.

Step 7. Add three rainbow colors to the bars by using the rainbow color palette function **rainbow()** instead of passing individual color names to the **col** argument of the **barplot()** function.

```

barplot(frequency_table,
        main = "Phosphorus fertility status",
        xlab = "Status", ylab = "Count",
        col = rainbow(3), border = "green")

```

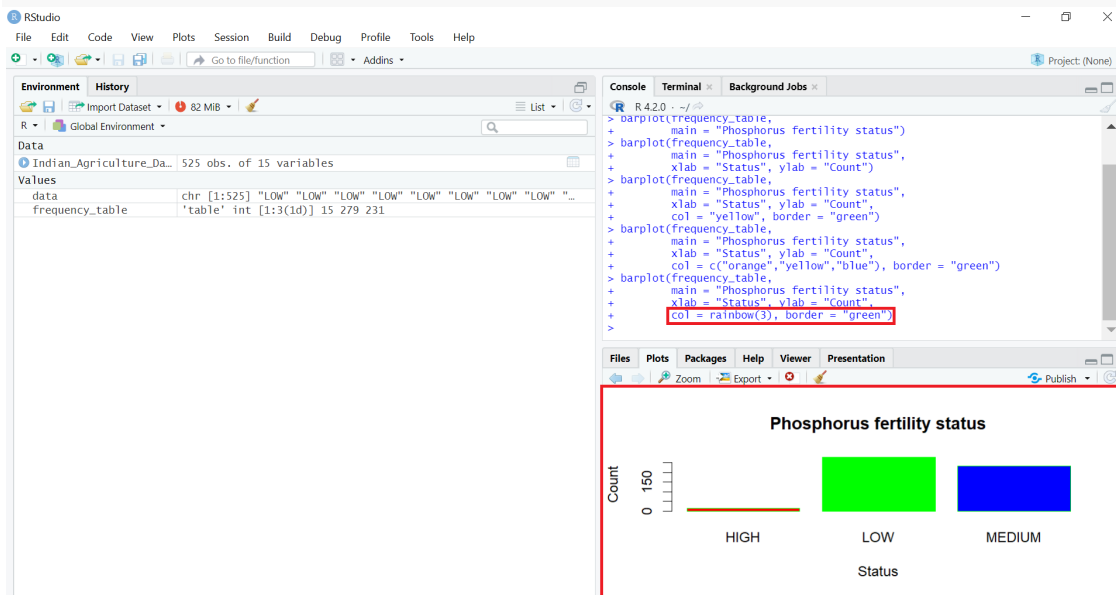


Figure 6: Bar plot with bars of rainbow color.

Step 8. Save the bar plot by clicking on the **Export** option in the **Plots** tab of the **Files and Plots** window and selecting the **Save as Image...** option. **Save Plot as Image** window will appear.

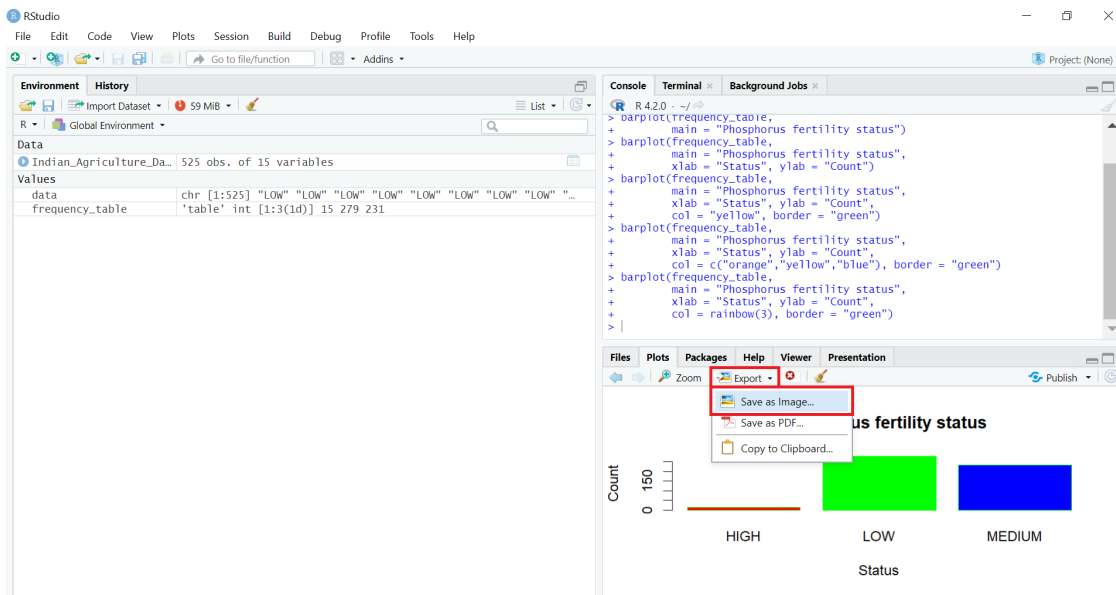


Figure 7: Exporting the generated bar plot.

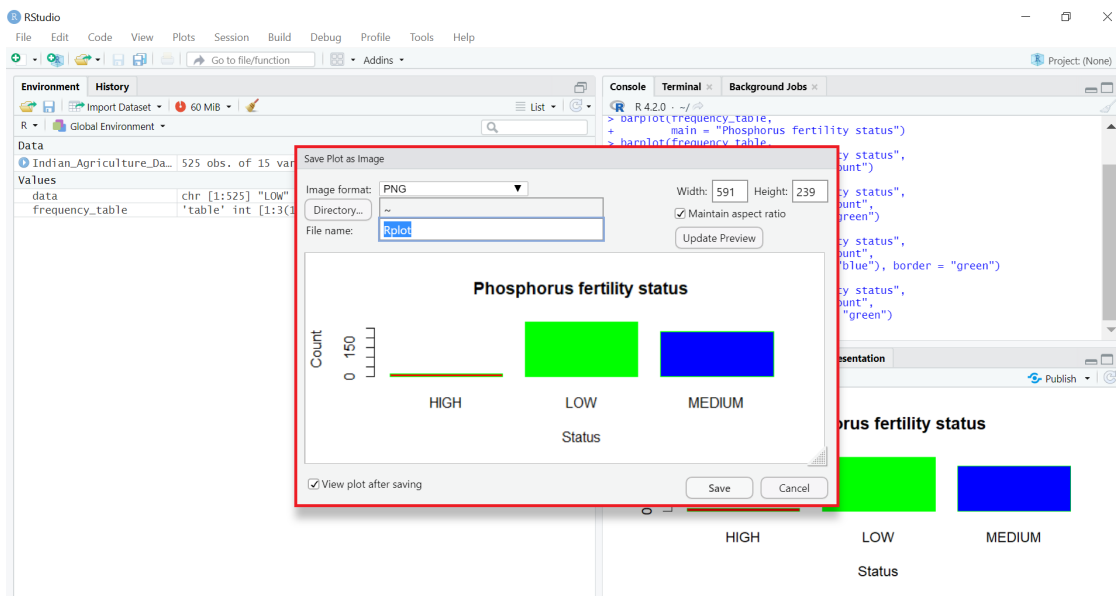


Figure 8: Save Plot as Image window.

Step 9. Left-click on the box present on the right side of the **Image format:** field. A drop down list will appear. Select the option **JPEG** to save the image as a **.jpeg** file.

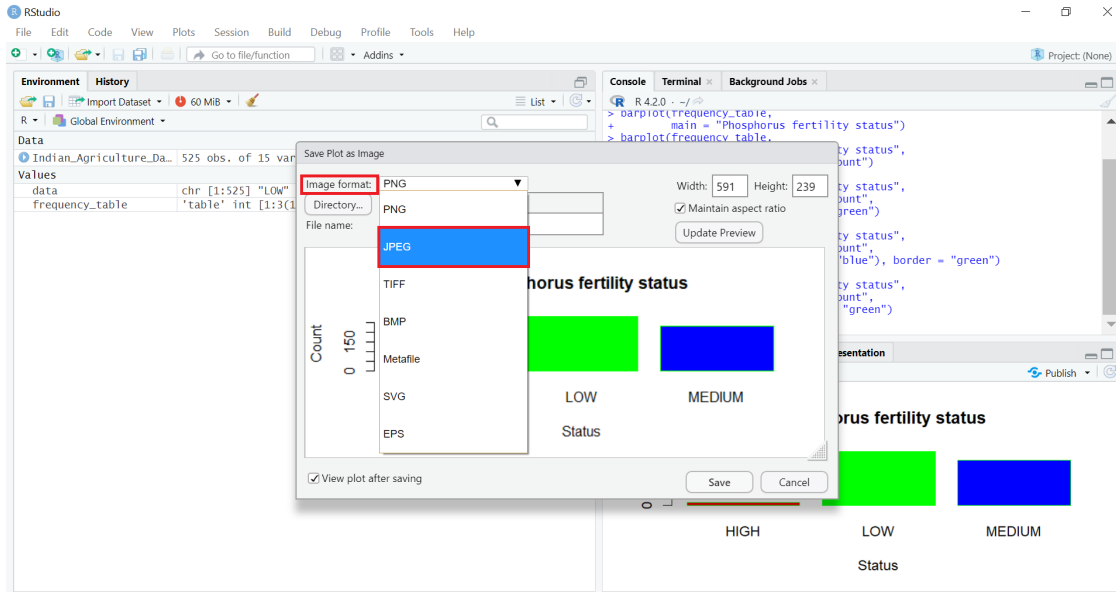


Figure 9: Select JPEG option.

Step 10. Change the width and height of the output file by typing a numeric value in the box present on the right side of the **Width:** and **Height:** fields. The **maintain aspect ratio** is by default checked, if you don't want to maintain it then uncheck it by clicking on the small box on the left side of the **Maintain aspect ratio** field.

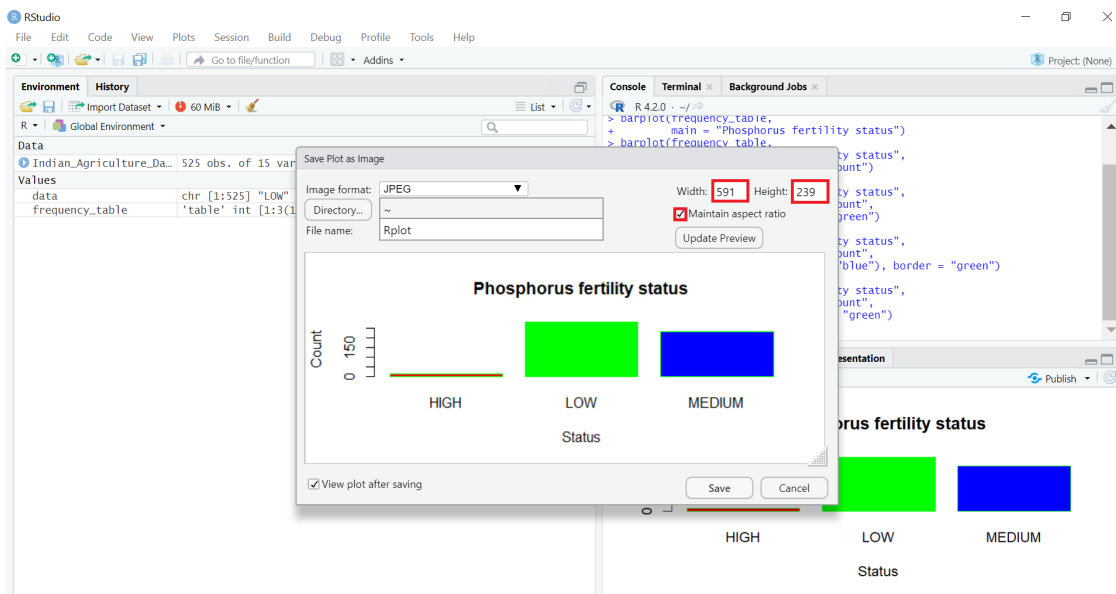


Figure 10: Select image size.

Step 11. Change the file name to **Box Plot** by typing it in the box on the right side of the **File Name:** field. Click on the **Save** button at the bottom-right corner to save the plot.

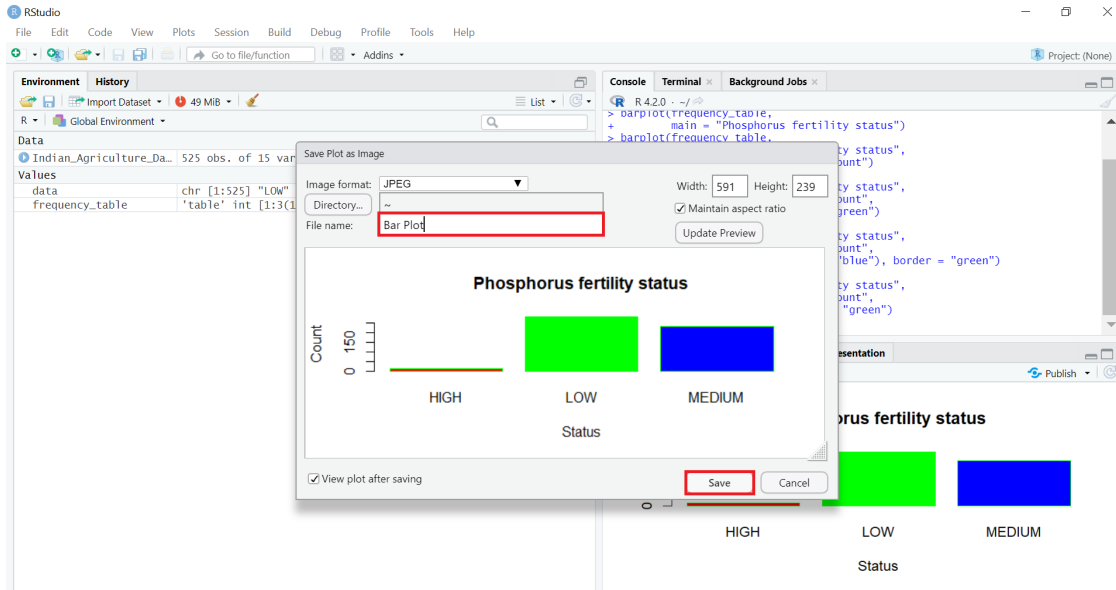


Figure 11: Change file name and save the plot.

Step 12: Save the bar plot as a **.jpeg** file with the name **Box Plot.jpeg** with **900px** width, **600px** height, **75%** quality, **grey** background color and **72ppi** resolution by executing the following commands in the R console.

```
jpeg(file = "Box Plot.jpeg",
      width = 900, height = 600,
      units = "px",
      quality = 75,
      bg = "grey",
      res = NA)

# Add code to create the bar plot
#-----#
barplot(frequency_table,
        main = "Phosphorus fertility status",
        xlab = "Status", ylab = "Count",
        col = rainbow(3), border = "green")
#-----#

dev.off()
```

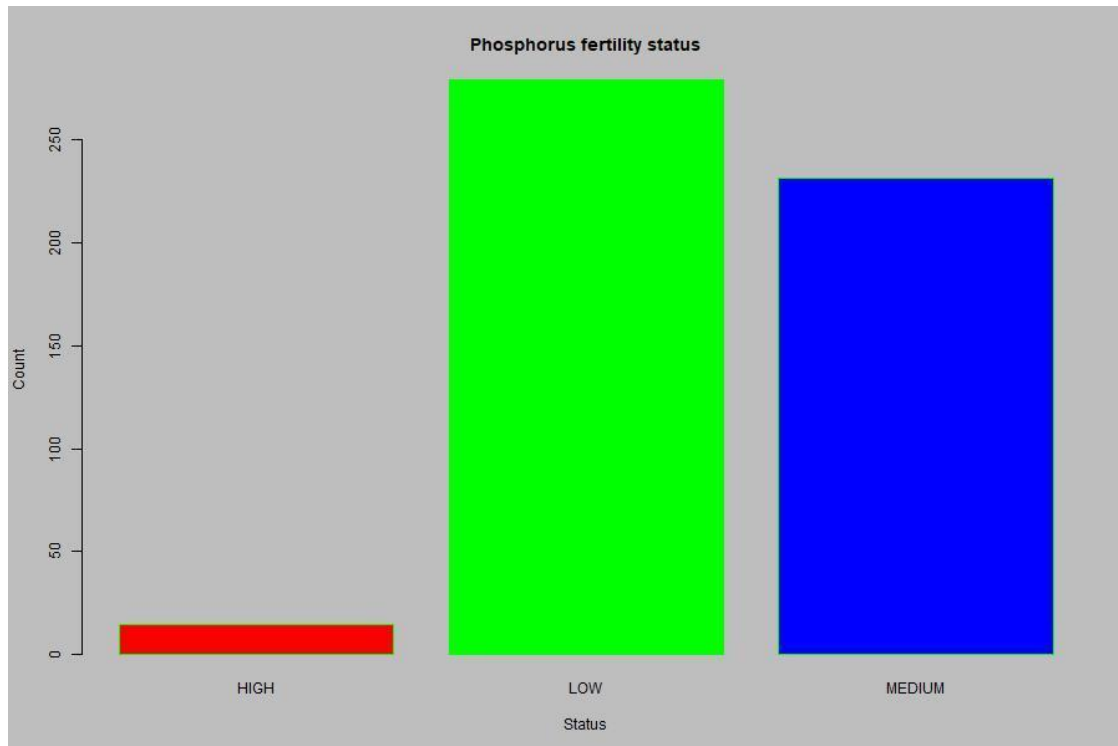



Figure 12: Bar plot stored as a JPEG file.

Step 13: Save the bar plot as a **.png** file with the name **Box Plot.png** with **900px** width, **600px** height, **grey** background color and **72ppi** resolution by executing the following commands in the R console.

```
png(file = "Box Plot.png",
     width = 900, height = 600,
     units = "px",
     bg = "grey",
     res = 72)

# Add code to create the bar plot
#-----#
barplot(frequency_table,
        main = "Phosphorus fertility status",
        xlab = "Status", ylab = "Count",
        col = rainbow(3), border = "green")
#-----#

dev.off()
```

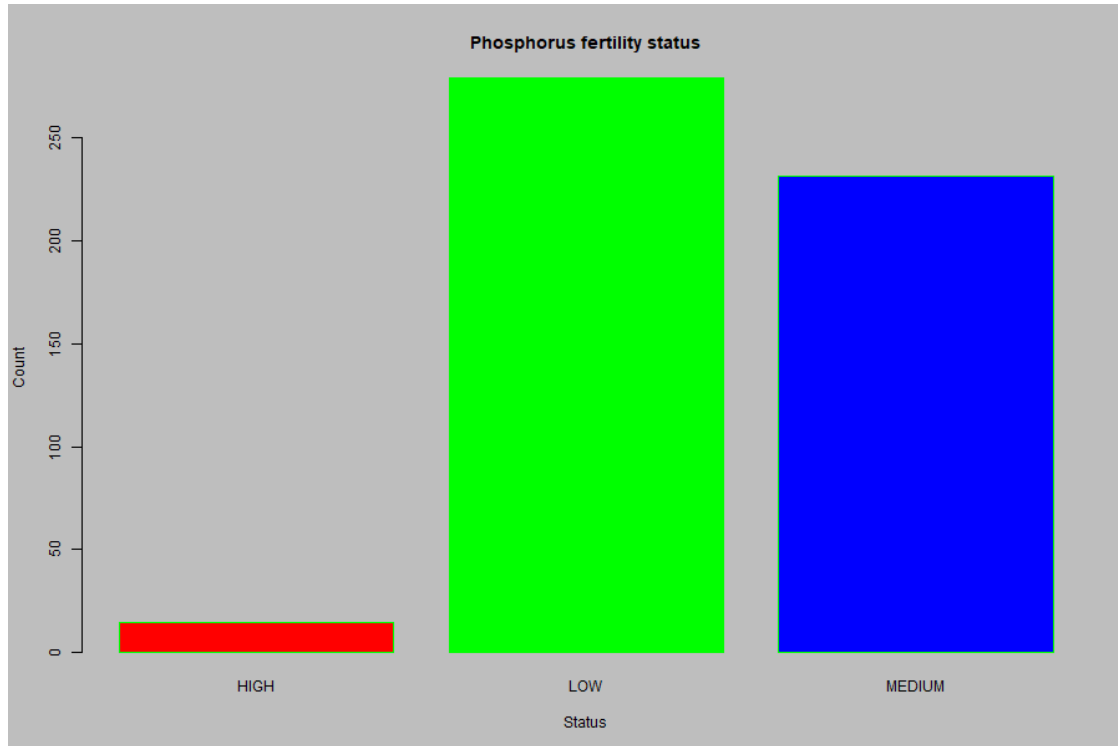


Figure 13: Bar plot stored as a PNG file.

Spoken Tutorials

For more details, refer to the [Plotting Bar Charts and Scatter Plot](#) Spoken Tutorial video.