

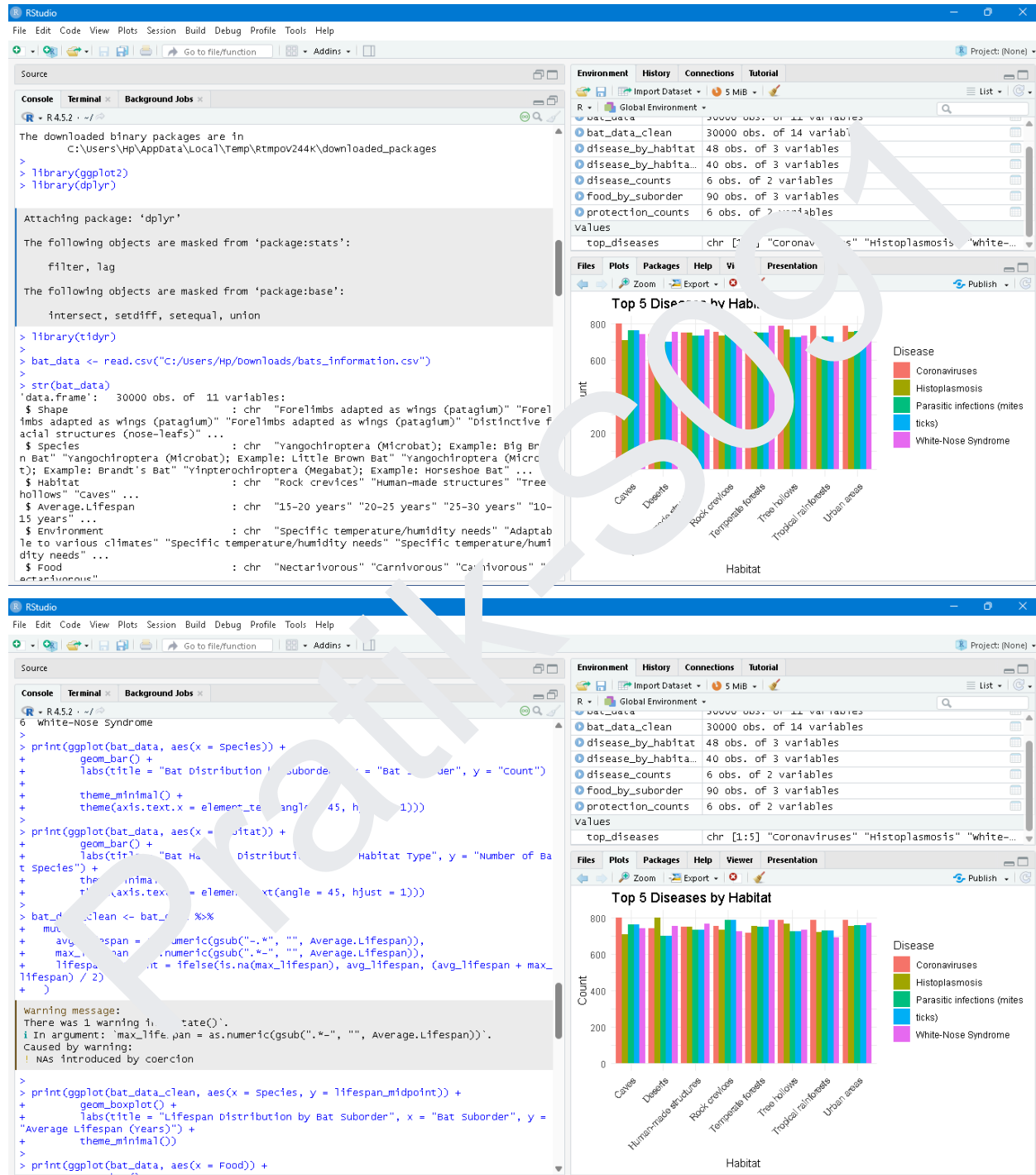
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AIM:-

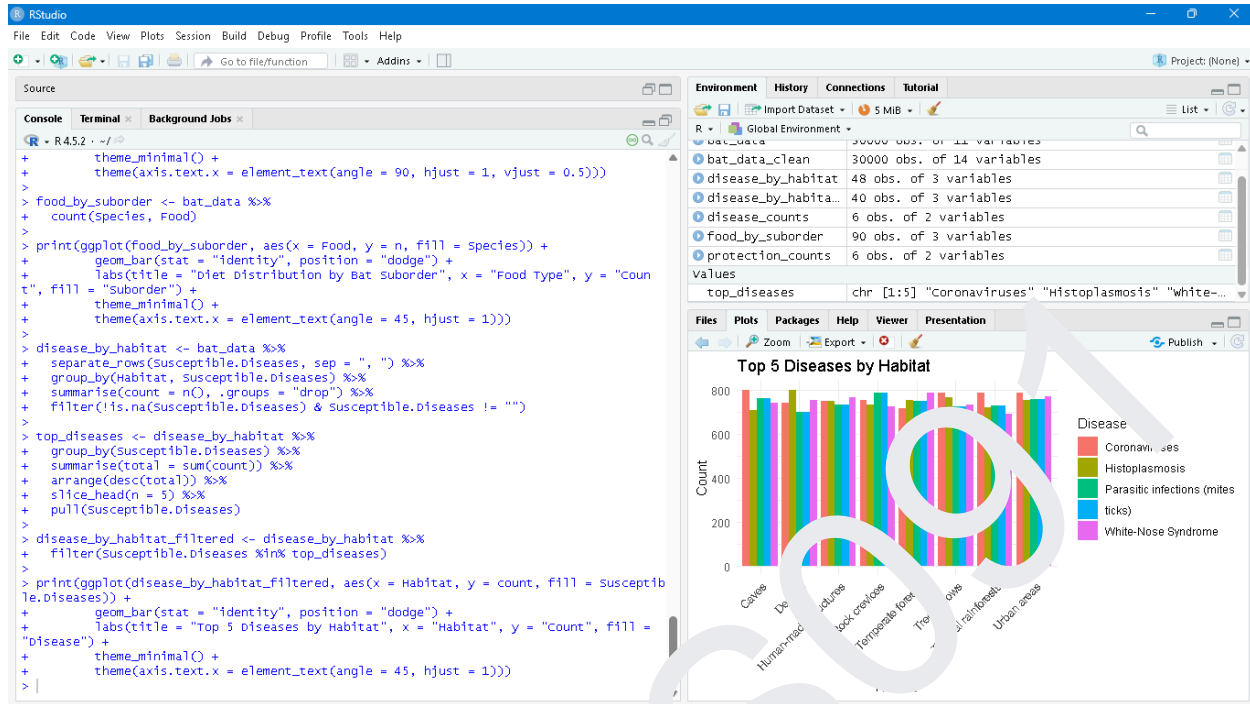
10 Creating graphical reports using ,ggplot2 (R).

OUTPUT:-



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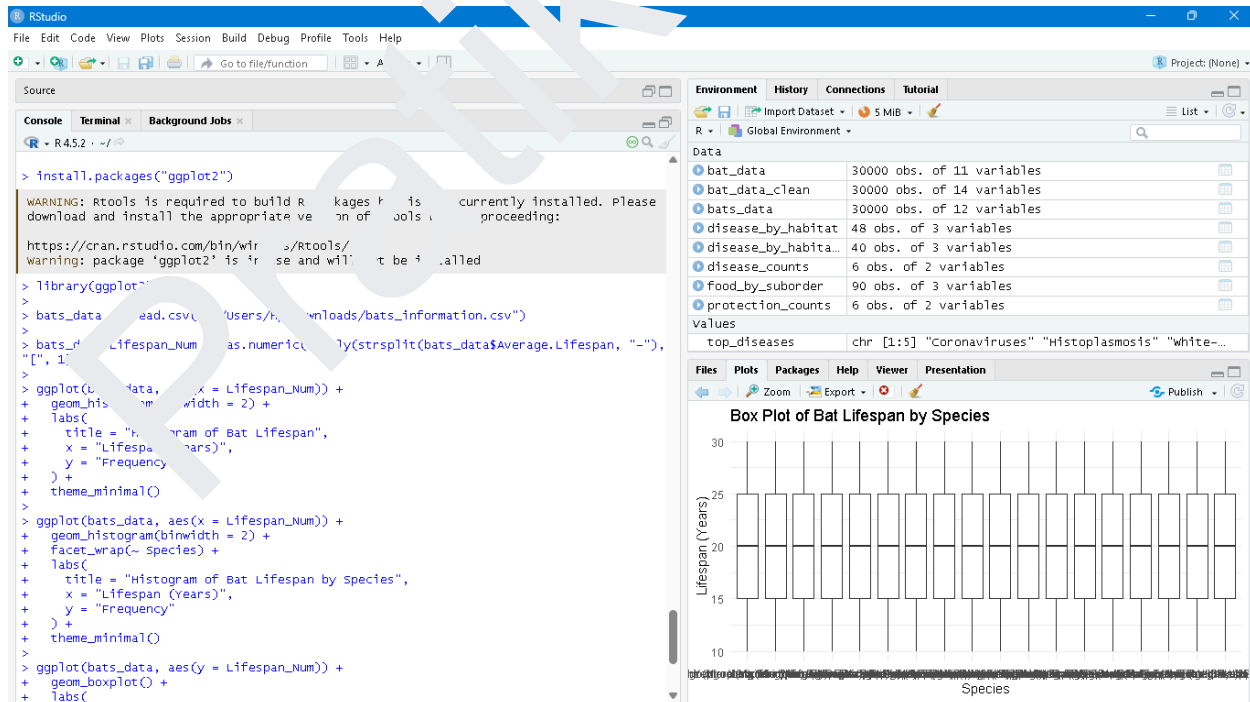
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AIM:-

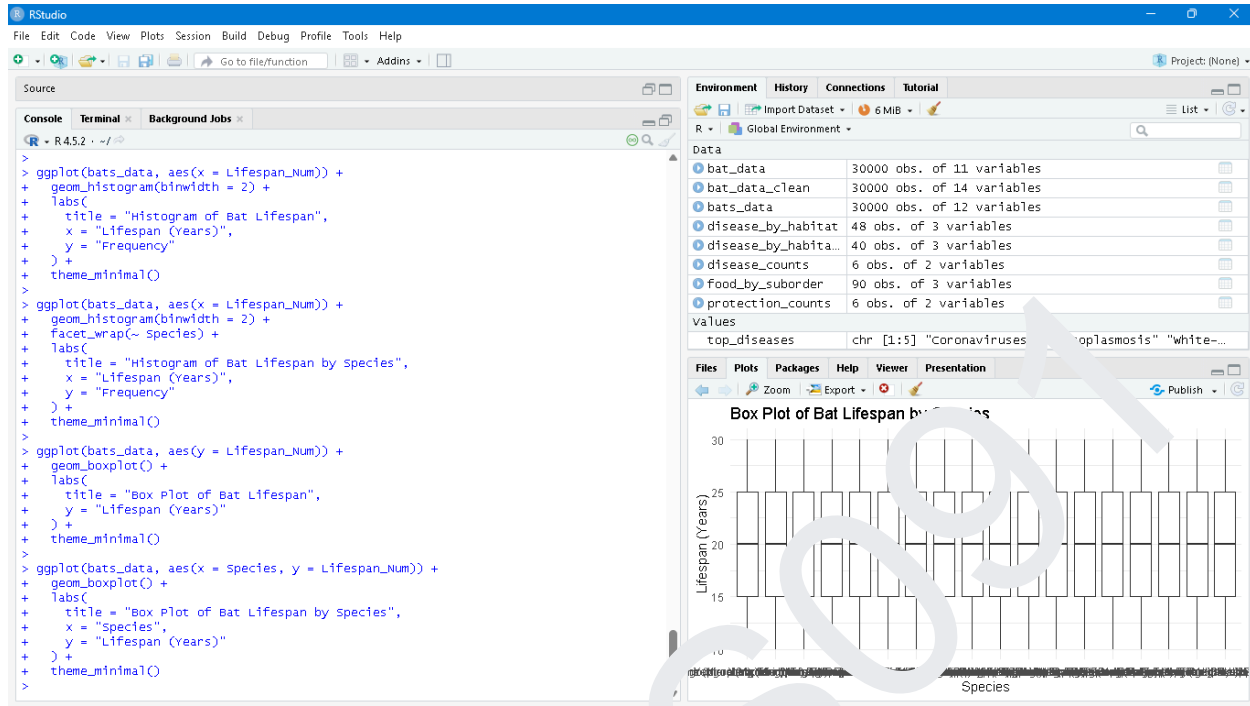
11 Generating histograms and box plots using ggplot2 (R).

OUTPUT:-



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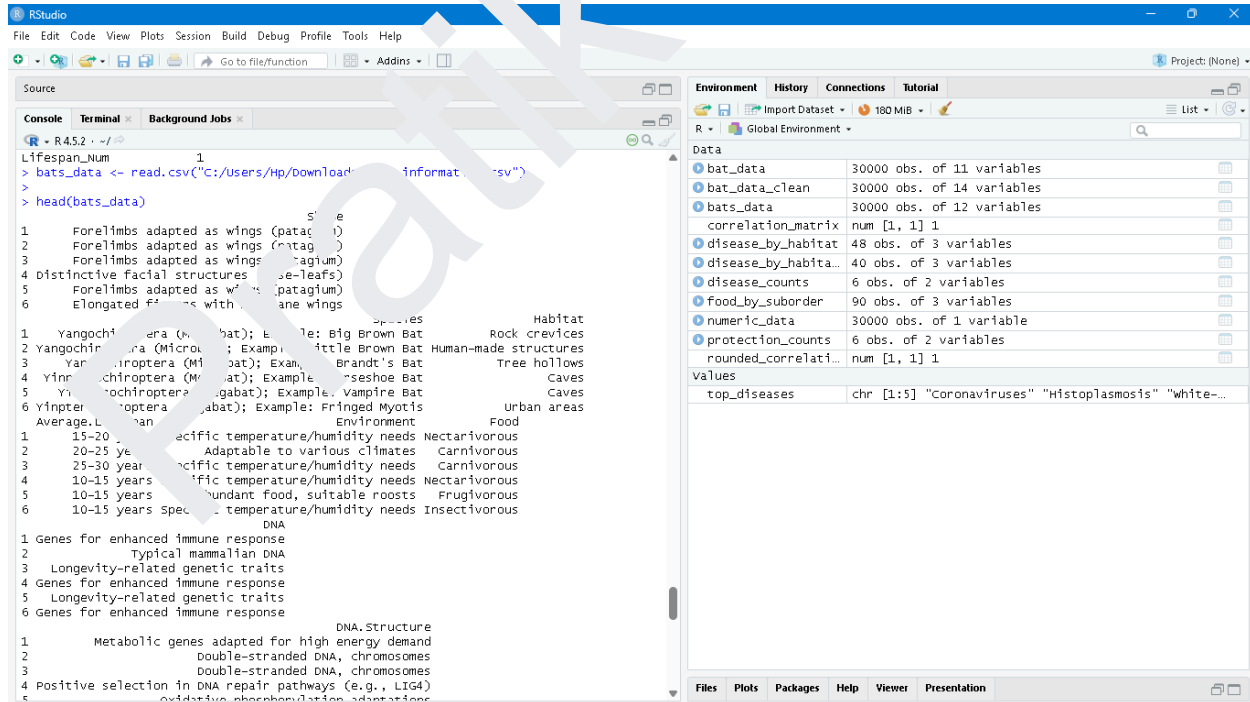
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AIM:-

12 Generating correlation matrices using cor() (R).

OUTPUT:-



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The screenshot displays the RStudio environment with the following components:

- Source Editor:** Contains R code for data manipulation and analysis.
- Console:** Shows the output of the R code execution.
- Environment:** Lists the objects in the global environment with their dimensions.
- History:** Shows the sequence of R commands executed.
- Connections:** Displays any open connections.
- Tutorial:** Provides access to RStudio tutorials.

R Code in Source Editor:

```
...  
$ DNA.Structure : chr "Metabolic genes adapted for high energy deman  
d" "Double-stranded DNA, chromosomes" "Double-stranded DNA, chromosomes" "Positive selec  
tion in DNA repair pathways (e.g., LIG4)" ...  
$ Protection.from.External.Threats: chr "Hibernation/torpor" "Large colony social stru  
cture" "Large colony social structure" "Large colony social structure" ...  
$ Protection.from.Diseases : chr "Genetic variations in pathogen receptors" "Hi  
gh interferon-alpha levels" "Unique immune system, pathogen tolerance" "Efficient DNA re  
pair mechanisms" ...  
$ Susceptible.Diseases : chr "Coronaviruses" "White-Nose Syndrome" "White-N  
ose Syndrome" "White-Nose Syndrome" ...  
>  
> bats_data$Lifespan_Num <- as.numeric(sapply(strsplit(bats_data$Average.Lifespan, "-"),  
"[", 1))  
>  
> numeric_data <- bats_data[sapply(bats_data, is.numeric)]  
>  
> head(numeric_data)  
Lifespan_Num  
1 15  
2 20  
3 25  
4 10  
5 10  
6 10  
>  
> correlation_matrix <- cor(numeric_data)  
> print(correlation_matrix)  
Lifespan_Num  
1  
>  
> rounded_correlation <- round(correlation_matrix, 2)  
> print(rounded_correlation)  
Lifespan_Num  
1  
>
```

Environment Panel Data:

Object	Dimensions
bat_data	30000 obs. of 11 variables
bat_data_clean	30000 obs. of 14 variables
bats_data	30000 obs. of 12 variables
correlation_matrix	num [1, 1] 1
disease_by_habitat	48 obs. of 3 variables
disease_by_habita...	40 obs. of 3 variables
disease_counts	6 obs. of 2 variables
food_by_suborder	90 obs. of 3 variables
numeric_data	30000 obs. of 1 variable
protection_counts	6 obs. of 2 variables
rounded_correlati...	num [1, 1] 1

Environment Panel Values:

Object	Value
top_diseases	chr [1:5] "Coronaviruses" "Histop..." "White-Nose Syndrome" "White-Nose Syndrome" "White-Nose Syndrome"