Program – 9

Q. Load the Iris dataset as a list of lists

Compute and print the mean and the standard deviation for each of the 4 measurement columns (i.e., sepal length and width, petal length and width.

Compute and print the mean and the standard deviation for each of the 4 measurement columns, separately for each of the three Iris species.

Execution code:

```
library(tidyverse)

View(iris)

df <- data.frame(iris)

grp_spc <- group_by(iris,Species)

summarise(iris,cnt=n())

summarise(grp_spc,cnt=n())

summarize(iris,mn = mean(Sepal.Length),sd = sd(Sepal.Length))

summarize(iris,mn = mean(Sepal.Width),sd = sd(Sepal.Width))

summarize(iris,mn = mean(Petal.Length),sd = sd(Petal.Length))

summarize(iris,mn = mean(Petal.Width),sd = sd(Petal.Width))


summarize(grp_spc,mn = mean(Sepal.Length),sd = sd(Sepal.Length))

summarize(grp_spc,mn = mean(Sepal.Width),sd = sd(Sepal.Width))

summarize(grp_spc,mn = mean(Petal.Length),sd = sd(Petal.Length))

summarize(grp_spc,mn = mean(Petal.Width),sd = sd(Petal.Width))
```

Output:

```
Console   Terminal ×   Jobs ×
R 4.1.1 · ~/pranaya/akshat/
> library(tidyverse)
> view(iris)
> df <- data.frame(iris)
> grp_spc <- group_by(iris,Species)
> summarise(iris,cnt=n())
  cnt
1 150
> summarise(grp_spc,cnt=n())
# A tibble: 3 x 2
  Species      cnt
  <fct>      <int>
1 setosa        50
2 versicolor    50
3 virginica     50
> summarize(iris,mn = mean(Sepal.Length),sd = sd(Sepal.Length))
       mn        sd
1 5.843333 0.8280661
> summarize(iris,mn = mean(Sepal.Width),sd = sd(Sepal.Width))
       mn        sd
1 3.057333 0.4358663
> summarize(iris,mn = mean(Petal.Length),sd = sd(Petal.Length))
     mn       sd
1 3.758 1.765298
> summarize(iris,mn = mean(Petal.Width),sd = sd(Petal.Width))
       mn        sd
1 1.199333 0.7622377
>
> summarize(grp_spc,mn = mean(Sepal.Length),sd = sd(Sepal.Length))
# A tibble: 3 x 3
  Species       mn    sd
  <fct>      <dbl> <dbl>
1 setosa      5.01 0.352
2 versicolor  5.94 0.516
3 virginica   6.59 0.636
> summarize(grp_spc,mn = mean(Sepal.Width),sd = sd(Sepal.Width))
# A tibble: 3 x 3
  Species       mn    sd
  <fct>      <dbl> <dbl>
1 setosa      3.43 0.379
2 versicolor  2.77 0.314
3 virginica   2.97 0.322
> summarize(grp_spc,mn = mean(Petal.Length),sd = sd(Petal.Length))
# A tibble: 3 x 3
  Species       mn    sd
  <fct>      <dbl> <dbl>
1 setosa      1.46 0.174
2 versicolor  4.26 0.470
3 virginica   5.55 0.552
> summarize(grp_spc,mn = mean(Petal.Width),sd = sd(Petal.Width))
# A tibble: 3 x 3
  Species       mn    sd
  <fct>      <dbl> <dbl>
1 setosa     0.246 0.105
2 versicolor 1.33  0.198
3 virginica  2.03  0.275
```