

Internal Assessment 1

Series 1

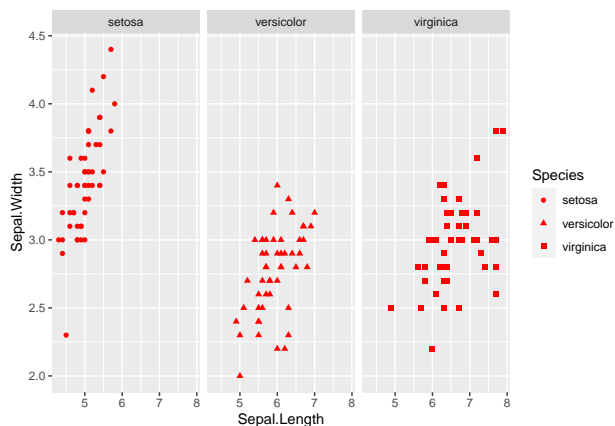
ECON03SEC1
Department of Economics
Presidency University, Kolkata
Full Marks: 30
09/11/2022

Answer the following questions: $[6 \times 5 = 30]$

1. Run the following codes and explain why the value of `address1` is shown as `NA` while the `class(address1)` is `numeric`?

```
x1 <- "Presidency"
x2 <- "University"
x3 <- "Kolkata"
address <- c(x1, x2, x3)
address1 <- as.numeric(address)
address1
class(address1)
```

2. Using the `iris` dataset in the base R `datasets` package, replicate the following plot.



3. Tidy and replicate the `us_rent_income` dataset in the `tidyr` package as given below.

```
## # A tibble: 14 x 5
##   GEOID NAME      moe income  rent
##   <chr> <chr>      <dbl> <dbl> <dbl>
## 1 01    Alabama      3     NA   747
## 2 39    Ohio        2     NA   764
```

| | | | | | | |
|----|----|----|----------------|---|----|------|
| ## | 3 | 40 | Oklahoma | 3 | NA | 766 |
| ## | 4 | 18 | Indiana | 3 | NA | 782 |
| ## | 5 | 55 | Wisconsin | 3 | NA | 813 |
| ## | 6 | 26 | Michigan | 3 | NA | 824 |
| ## | 7 | 37 | North Carolina | 3 | NA | 844 |
| ## | 8 | 42 | Pennsylvania | 3 | NA | 885 |
| ## | 9 | 13 | Georgia | 3 | NA | 927 |
| ## | 10 | 17 | Illinois | 3 | NA | 952 |
| ## | 11 | 48 | Texas | 2 | NA | 952 |
| ## | 12 | 12 | Florida | 3 | NA | 1077 |
| ## | 13 | 36 | New York | 3 | NA | 1194 |
| ## | 14 | 06 | California | 3 | NA | 1358 |

4. Calculate the mean *mpg* (miles per gallon) of the cars with 6 and 4 cylinders in **mtcars** dataset in the base R **datasets** package.
5. Which type of transmission (manual or automatic) has a higher variation (standard deviation) of *mpg* in the **mtcars** dataset in the base R **datasets** package?
6. What is the average displacement of a manual car with 4 cylinders in the **mtcars** dataset in the base R **datasets** package?