Internal Assessment 2

ECON03SEC1
Department of Economics
Presidency University, Kolkata
Full Marks: 40
21/01/2022

Group 1 (R)

Answer all of the following questions. $[4 \times 5 = 20]$

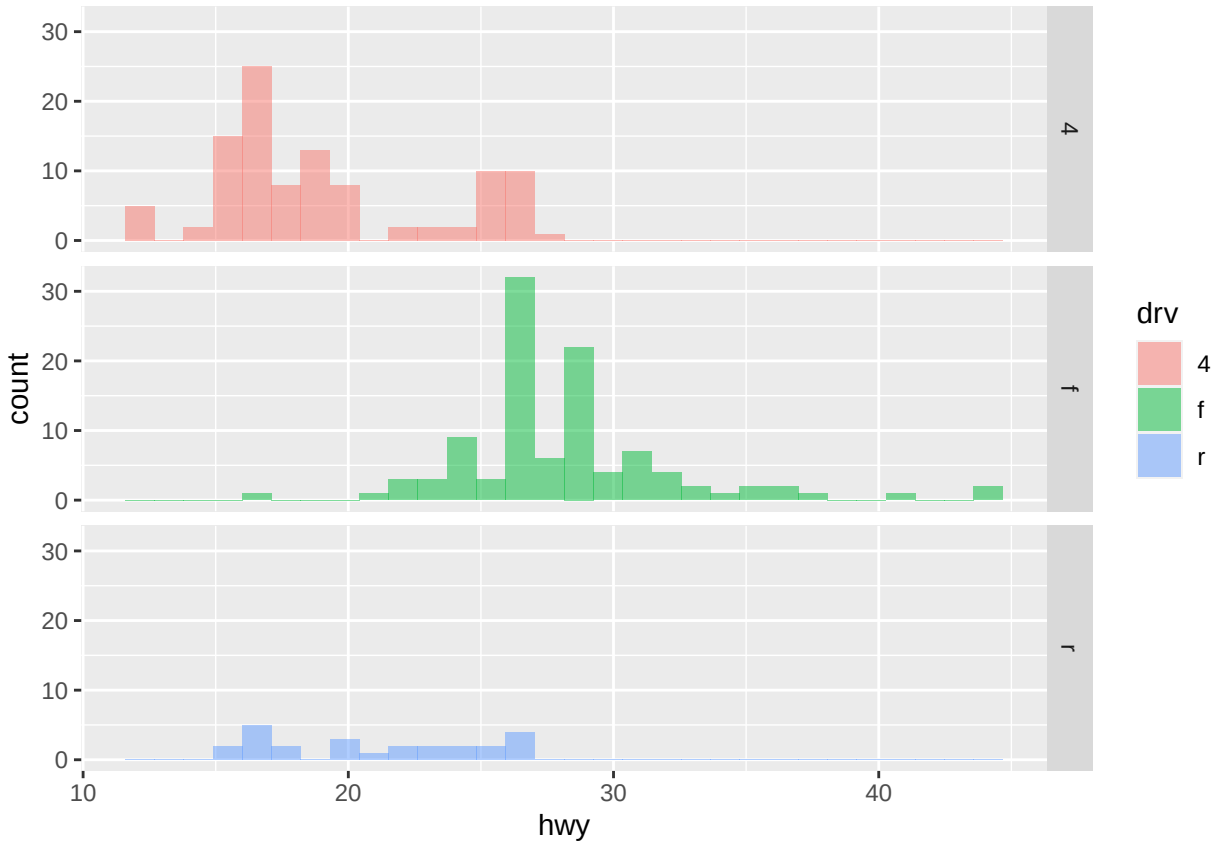
1. Which species have blue eyes in the `starwars` dataset in the `dplyr` package?
2. Tidy and replicate the `construction` dataset in the `tidyr` package as given below.

```
## # A tibble: 108 x 6
##     Year Month   Region    Completed_Units_Reg~ Size         Completed_Units_Si~
##    <dbl> <chr>   <chr>                    <dbl> <chr>                      <dbl>
##  1  2018 January Northeast                  114 1 unit                       859
##  2  2018 January Northeast                  114 2 to 4 units                  NA
##  3  2018 January Northeast                  114 5 units or ~                 348
##  4  2018 January Midwest                    169 1 unit                       859
##  5  2018 January Midwest                    169 2 to 4 units                  NA
##  6  2018 January Midwest                    169 5 units or ~                 348
##  7  2018 January South                      596 1 unit                       859
##  8  2018 January South                      596 2 to 4 units                  NA
##  9  2018 January South                      596 5 units or ~                 348
## 10  2018 January West                       339 1 unit                       859
## # ... with 98 more rows
```

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

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

4. Using the `mpg`dataset in the `ggplot2` package, replicate the following plot.



Group 2 (Excel)

Answer all of the following questions. $[4 \times 5 = 20]$

1. Using the data `GDP.xlsx`, for any two countries plot separate line charts for the components of GDP (Household Consumption Expenditure, Government final consumption expenditure, Net exports and Gross Capital formation).
2. Which specie has the longest and the widest petal in the `iris.xlsx` data?
3. How many years of data are available for each country in the `GDP.xlsx` dataset? How many countries do not have data for all the years?
4. Suppose that the firm's production function is $Q = F(K, L) = 50K^{0.5}L^{0.5}$. Suppose, too, that the price of labour w=5 and the price of capital r=20. What is the cost minimising input bundle if the firm wants to produce 1,000 units per year?