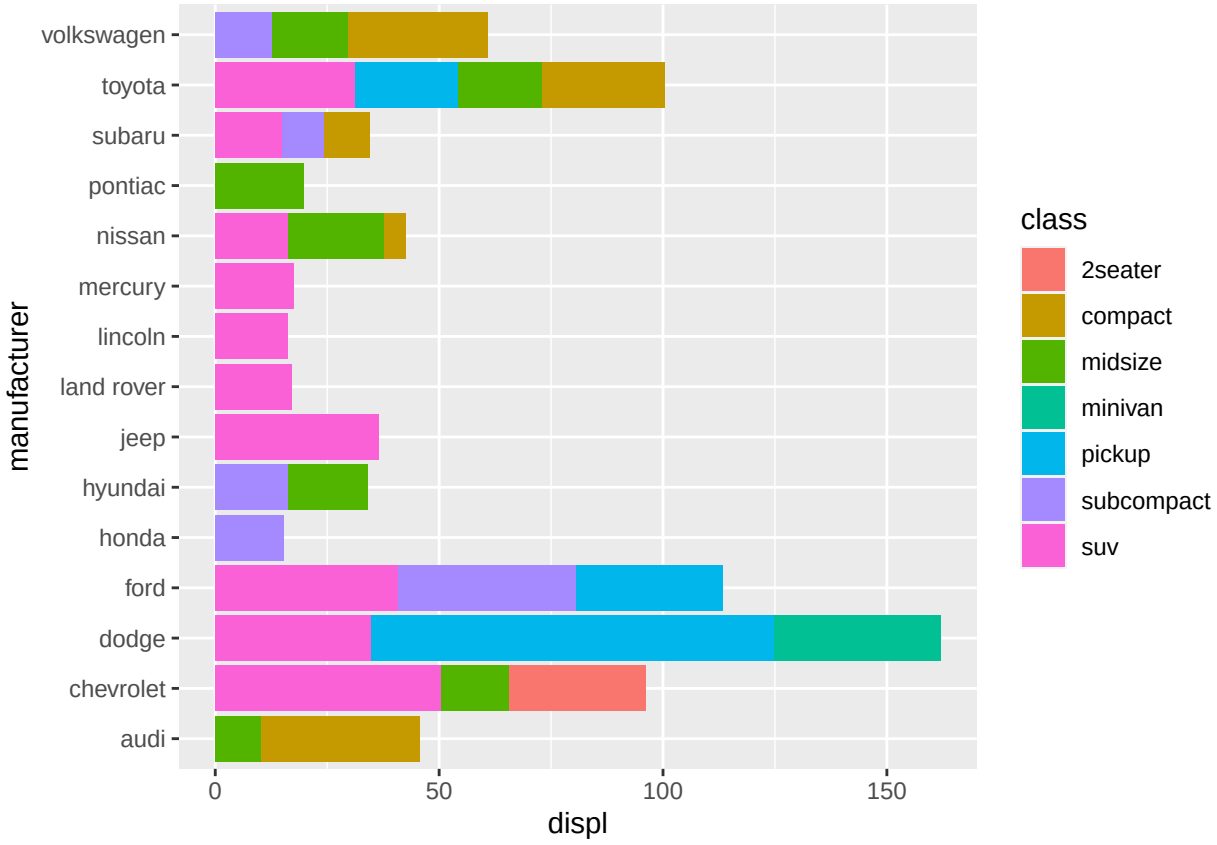
# Internal Assessment 2

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




2. In the `starwars` dataset in the `dplyr` package, how many species have a fair skin colour?

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

```
## # A tibble: 2 x 20
##   country `1995` `1996` `1997` `1998` `1999` `2000` `2001` `2002` `2003` `2004`
##   <chr>    <int>  <int>  <int>  <int>  <int>  <int>  <int>  <int>  <int>  <int>
## 1 India   9.56e8 9.73e8 9.90e8 1.01e9 1.03e9 1.04e9 1.06e9 1.08e9 1.09e9 1.11e9
## 2 China   1.24e9 1.25e9 1.26e9 1.27e9 1.27e9 1.28e9 1.29e9 1.30e9 1.30e9 1.31e9
## # ... with 9 more variables: `2005` <int>, `2006` <int>, `2007` <int>,
## #   `2008` <int>, `2009` <int>, `2010` <int>, `2011` <int>, `2012` <int>,
## #   `2013` <int>
```

4. Explain the following codes and their outputs.

```
a5 <- factor(c("high", "low", "medium", "medium", "high"), levels = c("low", "medium", "high"), ordered
a5
```

## Group 2 (Excel)

Answer all of the following questions. [4 × 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?