The forced expiratory volume FEV is the volume of air that can be forced out taking a deep breath, an important measure of pulmonary function. The data in the files FEV.txt (txt file) and FEV.sav (SPSS file) contain 684 measurements of FEV from a study in children of age 3 to 19 years old. Available are the following variables:

- ID
- age (in years)
- FEV (Forced Expiratory Volume in lt)
- Height (in inches)
- sex (0=girl, 1=boy)
- smoking (0=non-smoker, 1=smoker)

Perform the following in R:

1. Read the data for the SPSS file FEV.sav and save them in an object with the name fevspss.

   Hint: Upload the library foreign by using the command `library(foreign)` and then read the SPSS formatted data with the function `read.spss()`.

2. Read the data from the file FEV.txt and save them in an object with the name fevtxt.

3. Compare the above objects (data). Are they the same? Specify the correct dataset and save it in an object with the name fev.

   Hint: For each variable in each dataset use the memberships functions `is.factor()`, `is.numeric()`.

4. Format the dataset fev (for e.g., define names of the variables, factors, e.t.c.)

5. For each variable calculate the summary statistics using the function `summary()`.

6. For each variable plot the appropriate figures. For the binary (discrete) variables you should plot pie-charts or bar-plots.

7. Check graphically each variable's relation with FEV.

8. Check graphically each variable's relation with FEV by sex.

9. Check graphically relation FEV-height and FEV-age indicating with different color and character boys and girls.

10. Check graphically relation FEV-height and FEV-age indicating with different color and character smoker and non-smokers

11. Create the distribution of frequencies of age using the breakpoints 0, 4, 8, 12, 16, 20 and save in a data.frame the lower and upper limit of each class and its frequency.