ARTIFICIAL INTELLIGENCE

Lab2. *Descriptive statistics*

1. Load the file *flights.csv* consisting of the numbers of passengers [in thousand] of a given airline in years 1955-1960 and:
   a) verify the type of data (class(data));
   b) draw frequency histograms for the data from all years; automatize the process using „for" loop; declare titles of histograms recalling data labels; arrange all the graphs in a single window;
   c) compute and interpret basic statistical characteristics (mean, median, quartiles, standard deviation, variability index); automatize the process using „for" loop; to automatize interpretations use paste function;
   d) compare the data from consecutive years with the use of box-plots.

2. Load the file *notes.csv* consisting of the grades of four groups of students and:
   a) look to the data and pay attention for the lengths of variables and the way of coding;
   b) load the file once again with the change of coding (option dec=",");
   a) construct point frequency table for each group of students; automatize the process using „for" loop; in the case of variables with shorter length use na.omit function;
   b) draw line graphs of the data from all groups; automatize the process using „for" loop; declare titles of histograms recalling data labels; arrange all the graphs in a single window
      CAUTION! For discrete.histogram command „arm" package is required;
   c) determine and interpret basic statistical characteristics'
   d) compare the data from the groups with the use of box-plots;
   e) present the data in the form of frequency tables and draw respective pie charts.

3. Load the file *strawberries.csv* consisting of the yields of strawberries from two different years and:
   a) verify the type of data; look to the data and pay attention for the lengths of variables and missing data;
   b) construct interval frequency tables for each year
   c) draw probabilistic histograms (freq=FALSE) for both years; automatize the process using „for" loop; declare titles of histograms recalling data labels; arrange all the graphs in a single window;
   d) determine basic statistical characteristics;
   e) compare the data from consecutive years with the use of box-plots;
   f) present the data in the form of interval frequency tables and draw respective pie charts.