Class Activity: Visualization and Data Understanding

Máster en Ingeniería y Tecnología de Sistemas Software (MITSS)

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***Objective**: the hypothesis we want to test is whether there is any relationship between violent attitude in children and the amount of time they spend watching tv.*

Step 1: Load in R the dataset "tv.txt" you can find in the section "Activity 1: Visualization and data Understanding" (Course Documentation/Theory Program/ Unit 2: Data Integration and manipulation)

Description of variables

Variable	Description
TV hours	Total number of TV hours watched per day
Obedience	How obedient the child is 1=very obedient, 5= not obedient
Attitude	Attitude while playing with other children 1= non-aggressive, 5=very aggressive

***Step 2**: Answer the following questions:*

1. How many hours a day on average does each child watch television? What is the range of TV hours watched?
2. When calculating the average number of hours of television watched, was there any apparent outlier? What effect could this have on the mean?
   NOTE: Visualize graphically (using a boxplot) the hours watched in order to easily answer the question (read the , R manual for boxplots if you need some help).
3. Recompute the mean without the outlier(s) and remove them from the original dataframe.
   NOTE: You can first grab the outliers (this can be done using the boxplot). Take a look to the arguments of the R function boxplot().
4. What is the overall correlation between the numbers of TV hours watched and the obedience? What is the correlation between TV hours watched and attitude?
5. Describe the relationships indicated in question 4. Are any of these correlations statistically significant?
   NOTE: Use the extension of the cor() function to perform the necessary statistical significance tests.
6. Do a simple frequency count on attitude. What fundamental problem does this data present for the hypothesis? What sampling changes could be made to better test the hypothesis that "children who watch more hours of TV are more aggressive"?