CMTH642 Data Analytics: Advanced Methods Lab 3

1. Below, there are three groups with seven observations per group:
   Group 1: 18.2, 20.1, 17.6, 16.8, 18.8, 19.7, 19.1
   Group 2: 17.4, 18.7, 19.1, 16.4, 15.9, 18.4, 17.7
   Group 3: 15.2, 18.8, 17.7, 16.5, 15.9, 17.1, 16.7

   (a) Create vectors for each group and check the means.

   (b) Create a dataframe for these three vectors.

   (c) Visualize the the groups using boxplot.

   (d) We are assuming that the distribution of samples are approximately normally distributed. To investigate whether there is any significant difference among the means of these three groups, apply **aov** command which runs **ANOVA** test.

2. Load the **ISwR** library and look at the **red.cell.folate** data. This dataset contains data on red cell folate levels in patients receiving three different methods of ventilation during anesthesia. Read the description provided in R. This will give you more domain knowledge about the data.

   (a) Visualize the distribution of each ventilation method using boxplot.

   (b) Find out whether at least one method of ventilation during anesthesia have outstanding effect on the red folates.

3. Load the **juul** data and have a look at the data and its descriptions. Compare the effects of **tanner** levels on amount of insulin-like growth factor **igf1**. Does the data show any **tanner** level having outstanding effect compared to others?

This is the end of lab 3
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