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## Using SPSS

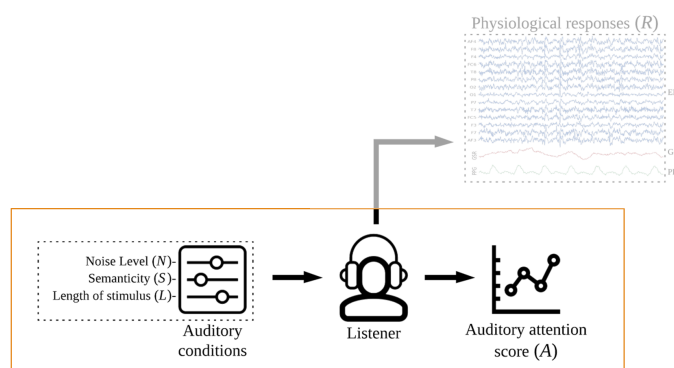
SPSS can be accessed using Imperial Software Hub, we will be using **SPSS 29** or **SPSS 28**. After logging-in to Imperial software hub, search for SPSS, and click to install or launch (if already installed).

SPSS comes with a massive range of options and analysis techniques; however, we will only focus on a very few useful features. For exploring more detail on tutorials, please refer to <https://www.spss-tutorials.com/basics/>



## Data

For this work session, we will be using PhyAAt (Physiology of Auditory Attention) dataset, which is a dataset during an auditory experiment, from 25 subjects. The dataset includes physiological measurements, however, for this session, we will use part of the data – attention level under different auditory conditions. Full detail of the experiment and dataset is available here <https://phyaat.github.io/>.



Download the following two datasets (csv files)

1. Dataset-1: Auditory attention level with different conditions - [https://nikeshbajaj.github.io/PhyaatDataset/PhyAAt\\_AttentionScoreData\\_v1.csv](https://nikeshbajaj.github.io/PhyaatDataset/PhyAAt_AttentionScoreData_v1.csv)
2. Dataset-2: Demographics and self-ratings of subjects for their language skills - [https://nikeshbajaj.github.io/PhyaatDataset/PhyAAt\\_Demographic\\_Rating\\_v1.csv](https://nikeshbajaj.github.io/PhyaatDataset/PhyAAt_Demographic_Rating_v1.csv)

### Reference:

One of the articles including statistical analysis using the same dataset is published and can be found here - <https://academic-publishing.org/index.php/ejel/article/view/2296>. Though, this article goes into a little more detail, however, some ideas of describing the datasets can be found useful.

## Questions/Tasks:

Now that you have downloaded the data, have a look at it, read about the experiment and understand all the variables that are in the data sheets.

As we have covered, descriptive and inferential statistics, and some visualisations, think about:

Q1. How can we describe the data?

Q2. What visualisations we can use to explain and explore the data?

We have also covered Hypothesis Design and Testing, knowing what we covered in our session, think about:

Q3. What analysis we can perform? Specifically, in terms of Auditory Attention.

Q4. Choose one aspect to test, state your hypothesis clearly, and perform the tests using SPSS. Conclude, your results.

Example: Testing whether the length of sentence have any impact on auditory attention.

## Session Details:

Topics we will cover for SPSS Session are:

### **Descriptive Statistics**

First, we will use SPSS to describe the datasets with figures and tables.

- Descriptive statistics
- Box plot, Bar plot

### **Comparing Groups**

- Independent tests (parametric, non-parametric)
- Dependent tests (parametric, non-parametric)
- Normality test, Equal variance test

### **Correlation**

- Pearson Correlation, Spearman Rank Correlation
- Scatter plot