Homework Assignments

* Design an experiment for a self-selected research question
  + Define hypotheses
  + Operationalize variables
  + Identify the most important confounding parameters (at least 5) and select suitable control techniques
  + If you let participants do tasks, define these tasks
  + Define your experimental design
  + Describe the planned analysis, including descriptive statistics, visualization techniques, and statistical test(s) (hint: if you have a two or more factorial design, you most likely need an ANOVA, which we talk about next time)
  + I suggest to swap the research questions between teams. This way, you experience how different an experiment can be, even for the same research question.
* Research the term multiple testing. What does it mean? Why is this an important problem in statistical analysis? How can we avoid this problem?
* Project
  + Here’s a link to the style for the report: <https://www.acm.org/publications/proceedings-template>
  + I put an example report online to get you an impression of the project. This is the only one that I have that is in English. But be aware that it is an average report, so it is not perfect.
  + We will talk about how to write a report on empirical studies next time