

Week 7: Introduction to Hypothesis Testing

This lab requires you to investigate a python notebook and discuss your findings on the numbered questions below in the discussion forum of Lab 7 in Surrey Learn.

Download the “lab7_hypothesis.ipynb” to experiment with Hypothesis Testing using 2 examples. First example uses the data file “lab7_grades.csv” to test the hypothesis of a correlation between the mean value of assignments grade between students submitting early and students submitting late or no correlation. Three assignments were tested.

1. Can you continue testing on the remaining assignments and post your findings on Surrey Learn discussion Forum?

A second example is on coin flipping testing the hypothesis whether it is biased or not.

2. Experiment with changing the bias of the coin and check the results to discuss in the discussion forum.

A third elaborate example is included about County Health Rankings dataset containing a list of important factors related to health of members of communities. The hypothesis to model is whether a county was ranked based on its population. The data file used in this example is “lab7_CHR_Analytic_Data.csv”.

3. Can you check from the analysis done on the dataset if the hypothesis is accepted or rejected?

A fourth example is using the same dataset of the third example to test the hypothesis that communities with higher population have different amounts of violent crimes (per capita) than those with lower population.

4. Can you check from the analysis done on the dataset if the hypothesis is accepted or rejected?
5. Given a dataset such as in the file “lab7_AusBirthWeightStats.csv”, what hypothesis can you model and investigate? Post your results on the discussion forum in SurreyLearn.