

LAB 2 – MATH 463

The purpose is to carry out a one-way analysis of variance (ANOVA). The model is that

$$Y_{i,j} = \mu_i + \varepsilon_{i,j},$$

where the errors $\varepsilon_{i,j}$ are $N(0, \sigma^2)$.

We want to test the hypothesis that $\mu_i = \mu$ for all i .

In the data set `grades.txt`, test the hypothesis that class level did not effect course performance. Create an ANOVA table.

In the data set `Sing.R`, perform an analysis of variance that all singers have the same heights. Note this is a binary file in R format, and needs to be read in with `load`. Use `url` to specify the file. Create an ANOVA table. Compare this with the six possible pairwise t -tests that the means are the same, correcting for multiple hypothesis testing.

In the data set `corn.txt`, perform an analysis of variance. Note that the treatment type must be specified to be a factor.