

R TUTORIAL, #7: TWO-WAY CONTINGENCY TABLES

The (>) symbol indicates something that you will type in.

A bullet (•) indicates what the R program should output (and other comments).

IMPORTING “TUTOR” DATA FILE

- We will import the text file “RTutor.txt” from the web directory <http://www.kkuniyuk.com/RFiles>. (Excel files can be saved as text files.)

> Type: `students = read.table(url("http://www.kkuniyuk.com/RFiles/RTutor.txt"), header=T)`

- ‘students’ will be a data frame containing the imported data.
- ‘header=T’ indicates that it is “True” that the file has headers.

> Type: `students`

- You will see the data frame ‘students’.
- Note: The first 21 names were hurricane names for the year 2012.

TWO-WAY CONTINGENCY TABLE FROM RAW DATA

- First, attach the ‘students’ data frame.

> Type: `attach(students)`

- We will set up a two-way contingency table with course level and grade as the categories.

> Type: `table(Level, Grade)`

- We want to reorder the rows so that the old third row (Soph) is the new first row.
- We will call the reordered table ‘x’.

> Type: `x = table(Level, Grade) [c(3,1,2),]`

> Type: `x`

- We want to find the marginal distributions (i.e., the row and column totals).

> Type: `addmargins(x)`

- How many students are Juniors getting a ‘B’?

> Type: `x["Jun", "B"]`

TWO-WAY CONTINGENCY TABLE: DIRECT ENTRY

- Let's say we are already prepared to enter a contingency table directly.

- Type in the columns of the table.
 - > Type: `A = c(1,5,2)`
 - We could use "`<-`" instead of "`=`" if you prefer.
 - > Type: `B = c(0,8,4)`
 - > Type: `C = c(2,1,3)`

- Bind the columns into a table.
 - > Type: `x=cbind(A,B,C)`
 - Use '`rbind`' if you are binding rows.
 - > Type: `x`

- Rename the rows of the table and include the marginal distributions.
 - > Type: `rownames(x) = c("Soph", "Jun", "Sen")`
 - > Type: `addmargins(x)`