

Approaches

- Based on guided code generation
- Based on exploring existing code
- Based on spreadsheet interaction

Using R for teaching statistics to nonmajors: Comparing experiences of 2.5 different approaches

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Approaches

Based on guided code generation

- RCommander and extensions
- Temple University has a course based on this approach
- Based on exploring existing code
 - RPad
 - University of Vienna has a course based on this approach

Based on spreadsheet interaction

- RExcel
- University of Vienna has lab classes based on this approach

RPad



RPad

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The variable rent presents the dependent variable. The variables size and number are the independent variables also called factors. We want to find out if the number of flat mates (two, three, more than three) has an effect on the average costs of rent.	
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RExcel

- Approach allows students to use a tool they already know and embed advanced statistical methods in the spreadsheet paradigm
- At the same time, prior spreadsheet experience can help with data manipulation and graphics creation

RExcel and RCommander

- Temple University currently teaches an introductory statistics course based on RCommander and RExcel.
- Statistics with Excel always needs an addin. We use R, the best possible addin.
- We use the RExcel interface to get data from Excel into R and to get tabular results back from R.
- RCommander provides a clickable menu interface to R.

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- Excel spreadsheet containing the Prestige dataset from the car package
- Click on the RExcel menu item to start R

RExcel and RCommander

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- In the R GUI, enter
- library(Rcmdr.HH)
- This starts the Rcmdr window with the HH menu

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RExcel and RCommander

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- Highlight and right click a region in Excel
- Send the region to RCmdr

RExcel and RCommander

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- Click the "Statistics/Fit Models/Best Subsets Regression" menu
- Fill in the model specification box

RExcel and RCommander



RExcel and RCommander



e. displays the summary of the selected model

RExcel and RCommander



We return the regression coefficients from the selected model back to the Excel spreadsheet.

RExcel and RCommander

RExcel and RCommander

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We return the regression coefficients from the selected model back to the Excel spreadsheet.

- Our addin to RCommander is currently available as an R package at http:// astro.ocis.temple.edu/~rmh/Rcmdr.HH
- Some of our additions will be included in the next release of RCommander.
- We thank John Fox, the developer of RCommander, for help in designing our addins to his package.