Introduction to S programming: a teaching experience and a manual

Who?
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From?
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The teaching experience

Audience
First year Actuarial Science students
Goal is to learn the programming language, not the statistical software
Second programming language (after VBA)

Constraints
Large group of students (around 80)
Limited access to computer labs
Very little time devoted to the topic (4 weeks)

The lab: to go or not to go?

Pros
Hands-on approach to learning
Variable pace per student
Lab work can be done at home

Cons
“Theory” difficult to teach
Easy for students to do “something else”
Limited number of PCs: some just watch
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**My solution**

- **Compromise**
  - Time spent in class
  - Time spent in the lab
  - In class: 1 hour per week
    - Presentation of concepts, functions, etc.
  - In lab: 2 hours per week
    - Students mainly execute provided script files
    - Some interventions by the instructor
The manual: *Introduction to S programming*

**What it is**
- Collection of class notes and scripts
- Much influenced by chapters 1–3 of MASS
- Fully indexed
- Published under the GNU FDL

**Also covers**
- Optimization functions
- Linear regression
- Time series analysis
- Random number generation
- Efficient simulation
- Emacs and ESS

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