## Literate Programming

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#### Introduction

## Literate Programming (according to D. Knuth)

- Explain the program logic using <u>natural language</u>
- Imagine that another person will read it and try to understand
  - "another person" can be yourself, in a near future

### Concept can be applied in other contexts

- Statistical analysis
- Big data exploration
- anything that involves coding and interpretation

#### Let me show you some examples (using Emacs + OrgMode)

- Investigating observation intrusion
- Prototyping non-traditional visualization
- Random notes in my daily journal

# Demonstration and Hands-on (TD3)

### Let's do it using RStudio (using knitR + R)

- Live demonstration with synthetic data
- Then, do it yourself with "real" data
  - Ping-pong measurements for different message sizes
  - Geophysics iteration duration

#### Goals of TD3

- Incorporate the spirit of literate programming
- Basic statistical concepts (using R)
  - Mean, Median, Min, Max
  - Histograms, boxplots, summary
- How to interact with RStudio (and get a nice looking PDF/HTML)