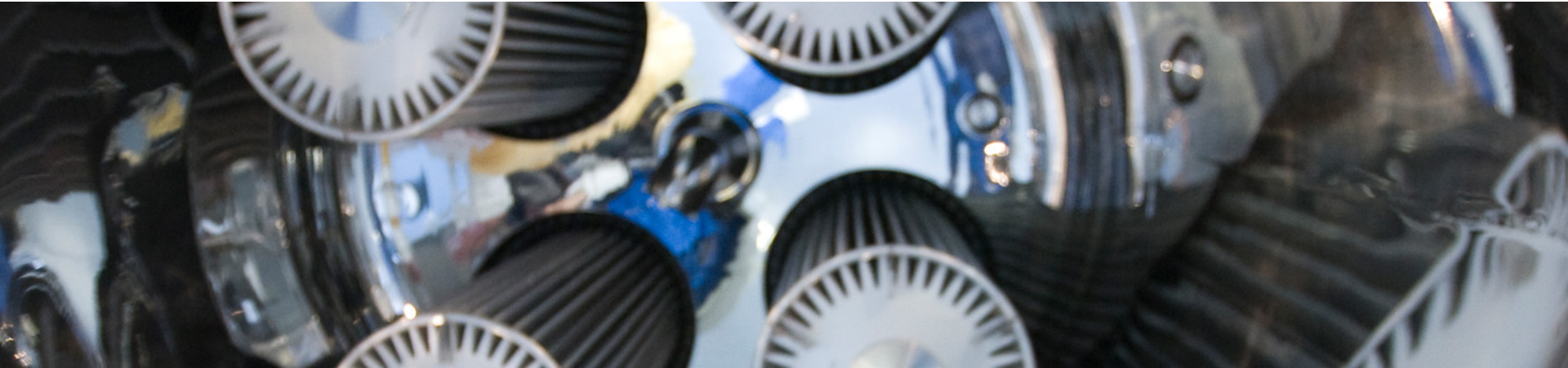


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# Looking at SAS code as data

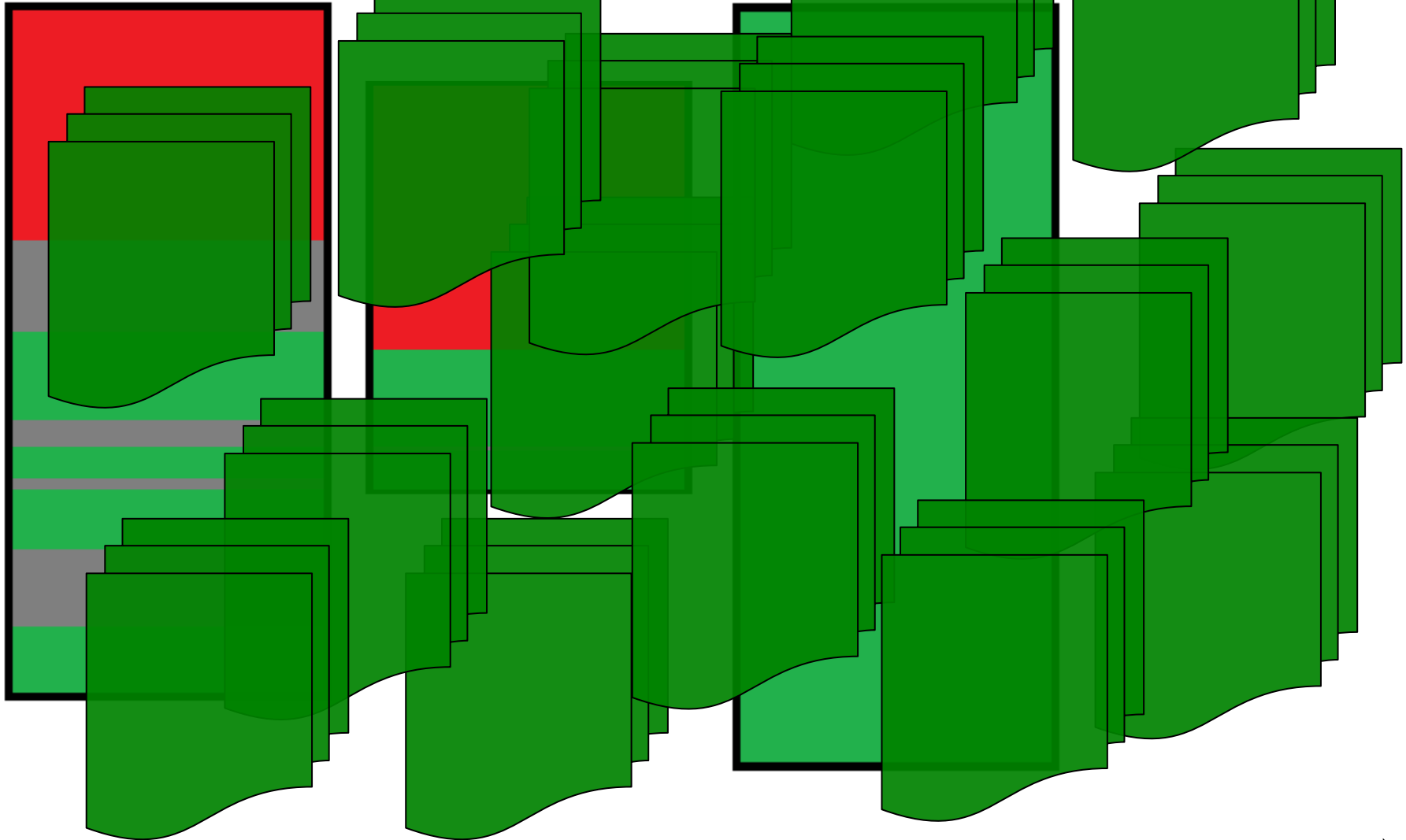
***Christof Binder, F. Hoffmann-La Roche***



# Introduction

- Working with a big code base can be difficult
- Traditional approach
  - Code review
  - Reading documentation
  - Reviewing test cases

# Code review



# Looking from a different angle

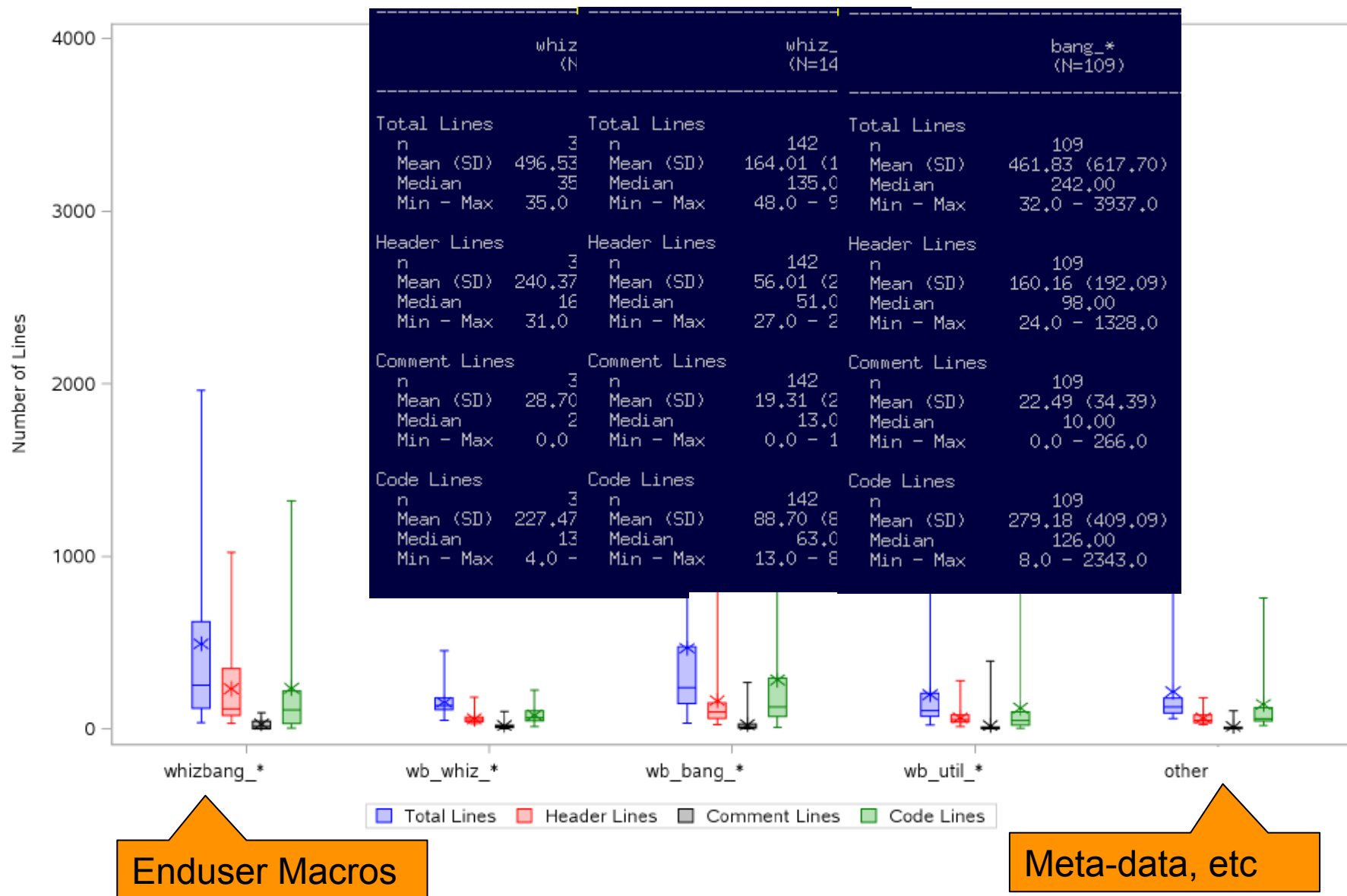


- A bigish system with two components
- Whiz - part
- Bang - part
- A few end-user macros and a lot of utility/internal macros

# Look at basic statistics

- Definitions
  - Header: first comment in the file: `/* ... */`
  - Comment: any `/* .. */`, `* ... ;` or `%* ... ;` line after the header
  - Code: any non-header, non-comment, non-blank line

# Basic Statistics



# Dynamic view

- Methodology
  - Using perl/python scripts to generate the raw data
  - Using D3 javascript library for the visualisation



# Summary

- Taking over a system can be daunting (even if it's your own after a while)
- Code review of a large system might not be feasible
- Viewing code as data can open new approaches
- Static analysis can point to macros that warrant a closer look
- Dynamic presentation can give a good feel about the code and focus the attention on clusters of interest, i.e. generate questions



Thank  
you



***Doing now what patients need  
next***