Solving SICP: And Experience Report on Solving the World's Most Famous Programming Problem Set

The International Conference on Functional Programming co-located Scheme Workshop presentation on the technical report.

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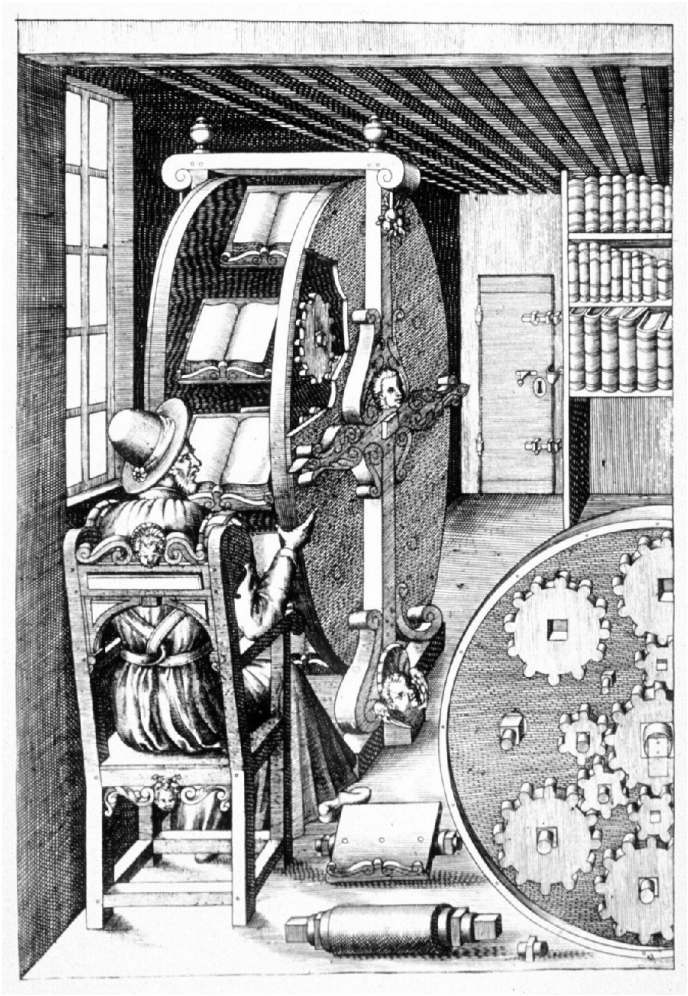
<2020-08-28 Tue 21:09 GMT+8>

Outline

What is SICP and why solve it?



- Structure and Interpretation of Computer Programs.
- By Harold Abelson, Gerald J. Sussman and Julie Sussman.
- 883 pages.
- 353 problems.
- No official solution.
- Difficulty unknown.
- Still cannot be solved portably.

Who is this report for?

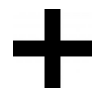
- Teachers.
- Teaching Assistants.
- Self-learners.
- Students.
- Time-management enthusiasts.
- Curriculum designers.

Who I am. (Bias adjustment.)

- Professional MATLAB developer.
- PhD in Computer Science Theory.
- MSc in Machine Learning.
- BSc in Mathematics and Physics.
- Studied C, C++, Python.

What is perfect coursework solution artefact?

- Plain text.
- Version controlled.
- Useful years later.
- Useful on any machine.
- Used as a portfolio.
- Searchable.
- Verifiable.



Which tools I used in the end.

Solving problems with babel.

Graphical example.

Compiling the report.

Measuring time.

Motivational tricks.

Statistics from outside org.

Data analysis with Emacs Lisp.

Data demonstration.

Statistics graphs.

Hard problems to discuss.

By-products of the work.

Applications and Further Work.

Review.

Personal 1 minute.

Credits.

Contacts, gitlab, Patreon.