# Methodology Document Traceability

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# 1 Empirical Measurement

## 1.1 Empirical Measures Considerations - Tool Tests

The following tools were considered when selecting a tool for taking empirical measurements of repositories.

Most tests were done targeting to the repo of 3D Slicer GitHub repo

### 1.1.1 git-stats

GitHub repo

Test results: http://git-stats-slicer.ao9.io/ the results are output as webpages, so I hosted for you to check. Data can be downloaded as spreadsheets.

### 1.1.2 scc

GitHub repo

### 1.1.3 git-of-theseus

GitHub repo

Test results: It took about 100 minutes for one repo on a 8 core 16G ram Linux machine. It only outputs graphs.

### 1.1.4 hercules

GitHub repo

Test results: this one seems to be promising, but the installation is complicated with various errors.

### 1.1.5 git-repo-analysis

GitHub repo

### 1.1.6 HubListener

GitHub repo

The data that HubListener can extract.

Raw:

- Number of Files
- Number of Lines
- Number of Logical Lines
- Number of Comments

Cyclomatic: Intro

- Cyclomatic Complexity

Halstead: Intro

- Halstead Effort
- Halstead Bugs
- Halstead Length
- Halstead Difficulty

- Halstead Time
- Halstead Vocabulary
- Halstead Volume

Test results: HubListener works well on the repo of itself, but it did not work well on some other repos.

### 1.1.7 gitinspector

GitHub repo

Test results: it doesn't work well. Instead of creating output results, it prints the results directly in the console.

## References

Steve Emms. 16 best free linux medical imaging software. https://www.linuxlinks.com/medicalimaging/, 2019. [Online; accessed 02-February-2020].