

Algorithm Engineering

Exercise No. 4

Monday 10th November, 2014

Submission

- (1) Submit your solution with `$ git request-pull` (or similar) to jkm@informatik.uni-jena.de. Don't forget to attach the twelve measurement files.

1 Test, test, and test

Test your implementations thoroughly. There is no sense in measuring incorrect implementations. Make sure your implementations are correct.

2 Measuring

Measure the wall clock time and cycles of your six implemented solutions to compute Fibonacci numbers.

Report your measurements in files with the following format – one file for each implementation and kind of measurement.

```
# n min [us] max [us] mean [us] sd [us] measurements [us]
0 10 12 11 2.4 10 10 10 12 12 12
1 10 12 11 2.4 10 10 10 12 12 12
. . . . . . . . . . .
. . . . . . . . . . .
. . . . . . . . . . .
. . . . . . . . . . .
```

us denotes μs here. When measuring CPU cycles use `cycles` or similar to indicate the unit.

3 Less Memory

The implementations that run in logarithmic time use logarithmic memory. Can we reduce the memory consumption? If so, how? If not, why not?

Include your thoughts on these questions in your email.