**Report Oblig 4 IN3030**

Haiyuec

**Processor:**

Intel Xeon E3-1240 v2

Base frequency: 3.40 GHz

Max Turbo frequency: 3.80 GHz

4 cores 8 Threads

**How to run the program:**

javac \*.java

java Main {N} {seed} {numBits} {test-flag}(optional)

**test-flags:**

* test-seq:

Uses the Oblig4Precode to print the sequential result to a file.

* test-para:

Uses the Oblig4Precode to print the parallel result to a file.

**Implementation explanation:**

**Runtime data:**

Runtime measured in ms

|  |  |  |  |
| --- | --- | --- | --- |
| bits per digit | N | Sequential | Parallel |
| 1 | 1.00E+03 | 0.648 | 6.117 |
|  | 1.00E+04 | 1.621 | 8.102 |
|  | 1.00E+05 | 7.033 | 12.247 |
|  | 1.00E+06 | 75.181 | 71.753 |
|  | 1.00E+07 | 849.719 | 829.991 |
|  | 1.00E+08 | 10982.798 | 8792.53 |
|  | 5.00E+08 | 53520.639 | 52176.038 |
|  |  |  |  |
| bits per digit | N | Sequential | Parallel |
| 4 | 1.00E+03 | 0.189 | 3.752 |
|  | 1.00E+04 | 0.575 | 4.781 |
|  | 1.00E+05 | 1.772 | 7.5 |
|  | 1.00E+06 | 20.113 | 11.569 |
|  | 1.00E+07 | 219.241 | 157.669 |
|  | 1.00E+08 | 2400.202 | 1123.273 |
|  | 5.00E+08 | 13441.709 | 4859.026 |
|  |  |  |  |
| bits per digit | N | Sequential | Parallel |
| 8 | 1.00E+03 | 0.162 | 3.369 |
|  | 1.00E+04 | 0.914 | 4.186 |
|  | 1.00E+05 | 1.419 | 6.042 |
|  | 1.00E+06 | 16.322 | 9.608 |
|  | 1.00E+07 | 168.294 | 65.773 |
|  | 1.00E+08 | 2405.641 | 776.693 |
|  | 5.00E+08 | 12730.367 | 3963.011 |
|  |  |  |  |
| bits per digit | N | Sequential | Parallel |
| 10 | 1.00E+03 | 0.161 | 3.636 |
|  | 1.00E+04 | 0.646 | 18.532 |
|  | 1.00E+05 | 7.74 | 93.468 |
|  | 1.00E+06 | 16.212 | 9.723 |
|  | 1.00E+07 | 219.164 | 88.618 |
|  | 1.00E+08 | 2779.574 | 1173.356 |
|  | 5.00E+08 | 12523.41 | 3962.792 |

**Conclusion:**