A1 - Neighborhood Score: Benchmarking

Analyze the performance of programs written for A0.

Collect execution-time information for the sequential and parallel/concurrent variants of the implementation using the following corpus (files/books.tar.gz). For the parallel/concurrent version vary the number of threads (2-16).

Prepare a report using R Markdown highlighting the differences in the execution profile of the variants.

- Explain the difference in the execution profiles among variants;
- Comment on the differences in performance of the sequential and parallel/concurrent variants;
- Comment on the impact of the number of executor threads on performance;
- Explain which implementation variant and configuration have the best combination of performance and stability.

Apart from the results of the evaluation the report should include the specs of the execution environment (Java version, OS version, relevant hardware specs) and a summary description of the design of the evaluated programs.

Deliverables

Deliver the code of the implementation and the performance report via CCS GitHub (https://github.ccs.neu.edu) or Github (https://github.com) and share the repository with the instructors and TAs: `janvitek`, `aviralg`, `kondziu`.

1. Repository name: `pdpmr-f17-your-name-a1` (replace `your-name` with your name in lowercase letters with dashes between words).
2. Required files:
    - `src/` (directory containing the sources of the implentation)
    - `README.md` (Markdown file containing the description of the implementations)
    - `Makefile` (Configuration file for the make command with the following rules: `build` — builds all the implementations, `run` — runs the variants and generate the report, `all` – build and run)
    - `report.Rmd` (The report as described in the previous section)
    - `report.html` (An HTML rendering of `report.Rmd`)

- `input/` (A directory containing input files used in the report; please `gzip` all text files to save space)

Submissions not adhering to the prescribed structure will be penalized.