

Documentation PDP lab 3 - Mos Daniele

Structure:

adt used:

- Pair
- Matrix `int[][]`
 - has a random generation function which fills the matrix

program parameters:

- `APPROACH` : "NORMAL" or "THREAD POOL"
- `THREAD_NB` integer
- `TYPE` "task-row" or "task-col" or "task-kth"
- `FIRST_SIZE` integer which represents the first matrix size
- `SECOND_SIZE` integer which represents the second matrix size

running:

- in main, 2 matrices are generated with random elements
- depending on the approach type, we either we normal approach or the thread pool classes are used
- in the normal one, we make a list of threads and execute the iteration according to the task type (rows, columns or k-th element)
- in the thread pool one, we use an executor service and execute the iteration according to the task type (rows, columns or k-th element)
- finally, we display the resulted matrix and get the processing time

```

THREAD POOL | task-row | Threads: 2 | Size: 2 -> Time:0.16777216
THREAD POOL | task-row | Threads: 2 | Size: 10 -> Time:0.0
THREAD POOL | task-row | Threads: 2 | Size: 100 -> Time:0.33554432
THREAD POOL | task-row | Threads: 2 | Size: 1000 -> Time:35.73547
THREAD POOL | task-row | Threads: 10 | Size: 2 -> Time:0.0
THREAD POOL | task-row | Threads: 10 | Size: 10 -> Time:0.0
THREAD POOL | task-row | Threads: 10 | Size: 100 -> Time:0.0
THREAD POOL | task-row | Threads: 10 | Size: 1000 -> Time:40.768635
THREAD POOL | task-row | Threads: 100 | Size: 2 -> Time:0.16777216
THREAD POOL | task-row | Threads: 100 | Size: 10 -> Time:0.33554432
THREAD POOL | task-row | Threads: 100 | Size: 100 -> Time:0.33554432
THREAD POOL | task-row | Threads: 100 | Size: 1000 -> Time:35.73547
THREAD POOL | task-col | Threads: 2 | Size: 2 -> Time:0.0
THREAD POOL | task-col | Threads: 2 | Size: 10 -> Time:0.0
THREAD POOL | task-col | Threads: 2 | Size: 100 -> Time:0.16777216
THREAD POOL | task-col | Threads: 2 | Size: 1000 -> Time:22.145926
THREAD POOL | task-col | Threads: 10 | Size: 2 -> Time:0.0
THREAD POOL | task-col | Threads: 10 | Size: 10 -> Time:0.0
THREAD POOL | task-col | Threads: 10 | Size: 100 -> Time:0.0
THREAD POOL | task-col | Threads: 10 | Size: 1000 -> Time:38.755367
THREAD POOL | task-col | Threads: 100 | Size: 2 -> Time:0.50331646
THREAD POOL | task-col | Threads: 100 | Size: 10 -> Time:0.16777216
THREAD POOL | task-col | Threads: 100 | Size: 100 -> Time:0.33554432
THREAD POOL | task-col | Threads: 100 | Size: 1000 -> Time:37.413193
THREAD POOL | task-kth | Threads: 2 | Size: 2 -> Time:0.0
THREAD POOL | task-kth | Threads: 2 | Size: 10 -> Time:0.0
THREAD POOL | task-kth | Threads: 2 | Size: 100 -> Time:0.0
THREAD POOL | task-kth | Threads: 2 | Size: 1000 -> Time:0.0
THREAD POOL | task-kth | Threads: 10 | Size: 2 -> Time:0.0
THREAD POOL | task-kth | Threads: 10 | Size: 10 -> Time:0.16777216
THREAD POOL | task-kth | Threads: 10 | Size: 100 -> Time:0.0
THREAD POOL | task-kth | Threads: 10 | Size: 1000 -> Time:0.0
THREAD POOL | task-kth | Threads: 100 | Size: 2 -> Time:0.16777216
THREAD POOL | task-kth | Threads: 100 | Size: 10 -> Time:0.33554432
THREAD POOL | task-kth | Threads: 100 | Size: 100 -> Time:0.16777216
THREAD POOL | task-kth | Threads: 100 | Size: 1000 -> Time:0.50331646
NORMAL | task-row | Threads: 2 | Size: 2 -> Time:0.16777216
NORMAL | task-row | Threads: 2 | Size: 10 -> Time:0.0
NORMAL | task-row | Threads: 2 | Size: 100 -> Time:0.0
NORMAL | task-row | Threads: 2 | Size: 1000 -> Time:50.66719
NORMAL | task-row | Threads: 10 | Size: 2 -> Time:0.0
NORMAL | task-row | Threads: 10 | Size: 10 -> Time:0.0
NORMAL | task-row | Threads: 10 | Size: 100 -> Time:0.0
NORMAL | task-row | Threads: 10 | Size: 1000 -> Time:54.022636
NORMAL | task-row | Threads: 100 | Size: 2 -> Time:0.16777216
NORMAL | task-row | Threads: 100 | Size: 10 -> Time:0.16777216
NORMAL | task-row | Threads: 100 | Size: 100 -> Time:0.16777216
NORMAL | task-row | Threads: 100 | Size: 1000 -> Time:38.419827
NORMAL | task-col | Threads: 2 | Size: 2 -> Time:0.0
NORMAL | task-col | Threads: 2 | Size: 10 -> Time:0.0
NORMAL | task-col | Threads: 2 | Size: 100 -> Time:0.0
NORMAL | task-col | Threads: 2 | Size: 1000 -> Time:21.139292

```

```
NORMAL | task-col | Threads: 10 | Size: 2 -> Time:0.0
NORMAL | task-col | Threads: 10 | Size: 10 -> Time:0.0
NORMAL | task-col | Threads: 10 | Size: 100 -> Time:0.0
NORMAL | task-col | Threads: 10 | Size: 1000 -> Time:38.084282
NORMAL | task-col | Threads: 100 | Size: 2 -> Time:0.16777216
NORMAL | task-col | Threads: 100 | Size: 10 -> Time:0.16777216
NORMAL | task-col | Threads: 100 | Size: 100 -> Time:0.16777216
NORMAL | task-col | Threads: 100 | Size: 1000 -> Time:38.587597
NORMAL | task-kth | Threads: 2 | Size: 2 -> Time:0.0
NORMAL | task-kth | Threads: 2 | Size: 10 -> Time:0.0
NORMAL | task-kth | Threads: 2 | Size: 100 -> Time:0.0
NORMAL | task-kth | Threads: 2 | Size: 1000 -> Time:0.16777216
NORMAL | task-kth | Threads: 10 | Size: 2 -> Time:0.0
NORMAL | task-kth | Threads: 10 | Size: 10 -> Time:0.0
NORMAL | task-kth | Threads: 10 | Size: 100 -> Time:0.0
NORMAL | task-kth | Threads: 10 | Size: 1000 -> Time:0.0
NORMAL | task-kth | Threads: 100 | Size: 2 -> Time:0.16777216
NORMAL | task-kth | Threads: 100 | Size: 10 -> Time:0.16777216
NORMAL | task-kth | Threads: 100 | Size: 100 -> Time:0.16777216
NORMAL | task-kth | Threads: 100 | Size: 1000 -> Time:0.50331646
```