

## Lab 1 - Basic Concurrency in Java

- Group X
- Lastname, Firstname and Lastname, Firstname

### Task 1: Simple Synchronization

#### Task 1a: Race conditions

Source files:

- task1/MainA.java (main file)

To compile and execute:

```
javac MainA.java
java MainA
```

#### Task 1b: Synchronized keyword

Source files:

- task1/MainB.java (main file)

To compile and execute:

```
javac MainB.java
java MainB
```

#### Task 1c: Synchronization performance

Source files:

- task1/MainC.java (main file)

To compile and execute:

```
javac MainC.java
java MainC <N>
```

Where N is number of threads to execute with.

In figure 1, we see how the execution time scaled with the number of threads.

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### Task 2: Guarded blocks using wait()/notify()

### Task 3: Producer-Consumer Buffer using Condition Variables

### Task 4: Counting Semaphore

### Task 5: Dining Philosophers

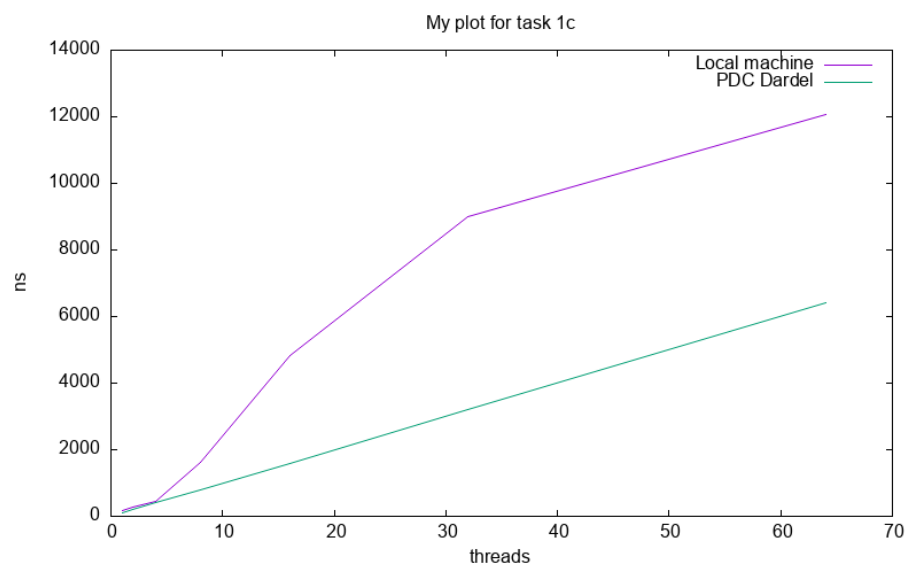


Figure 1: My plot for task 1c