

# Programming Tutorial (Advanced)

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## Task 1

Recall Task 1 from the last Exercise. Again, compute the sum of all elements of a 2D integer array. Instead of Threads or Runnable, use now Callable and ExecutorService.

## Task 2

Write a program that checks for every 2 seconds the CPUload of the the process and the system. For obtaining those values have a look at the following example:

```
import java.lang.management.ManagementFactory;
import com.sun.management.OperatingSystemMXBean;

public class Test{

    public static void main (String [] args) {
        OperatingSystemMXBean bean =
            (OperatingSystemMXBean) ManagementFactory
                .getOperatingSystemMXBean();

        System.out.println(bean.getProcessCpuLoad());
        System.out.println(bean.getSystemCpuLoad());

    }

}
```

*Note: For some Windows versions this code might return -1. You can ignore this issue since the objective of this task is to schedule your task execution.*

Your program should run for 10 seconds and then shut down properly.