Universität des Saarlandes
Fachrichtung 6.2 – Informatik
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Third Assignment: Software Visualization (WS 02/03)

Exercise 1: (16 points)

Algorithm animation of the SIT problem (scheduling of independent tasks): Given m machines and n jobs of lengths $a_1, \ldots, a_n$. Allocate the jobs to the machines, such that the maximal span (the span of the longest working machine) is minimal.

Three different algorithms:

1. Heuristic: allocate the jobs in order $a_1, \ldots, a_n$. Each job is allocated to the machine with present minimal span.
2. Heuristic: sort the jobs by length in descending order. Then use algorithm 1.
3. Use a branch-and-bound algorithm (or just a complete search) to compute the optimal solution.

Implement two algorithms in your favorite programming language and annotate them with print statements to produce a Samba-trace. The animation should be a good "visual explanation" for the algorithm. To make things easier you can asume $m = 3$. If you solve the more challenging problem for arbitrary $m > 1$ you can earn 4 extrapoints.

Please, hand in your assignment (annotated source files and Samba-traces) by email (goerg@cs.uni-sb.de) until the start of the lecture on December 4th.