iMOPSE visualizer - User's Manual
Maciej Laszczyk, Paweł B. Myszkowski
maciej.laszczyk@pwr.edu.pl; pawel.myszkowski@pwr.edu.pl
Project page: http://imopse.ii.pwr.wroc.pl/
Wrocław University of Technology
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Introduction

This document describes what the iMOPSE visualizer is and how to use it.

iMOPSE visualizer is an open source tool released for students and researchers to allow for visualization of schedules obtained with the iMOPSE library. Generated file is a .html file, which contains a table. Its rows represent resources and its column represent time slots. Tasks fill the cells of the table in their corresponding times. The longer the task the more cells it will take in the table. Additional row is created below the table, which represents a critical path. All tasks within the critical path are copied to it. Such representation allows for easy determination whether the resources are idle and often allows for an estimation of the schedules' quality.

Technical Requirements

To use the iMOPSE visualizer, Java Runtime Environment (version 1.8 or newer) has to be provided .

How to use the Visualizer - step by step

To use the iMOPSE visualizer, a .jar file along with the problem definition file and solution file are required.

There are three parameters:
- definition_file - file path to the .def file
- solution_file - file path to the .sol file
- visualization_destination - file path to the resulting .html file

Using the visualizer works similar to any .jar file:

java -jar Visualizer.jar definition_file solution_file visualization_destination

Assuming that the definitions file are located inside the definitions directory and the solution files are location the solutions directory, the following command should be used:

java -jar Visualizer.jar definitions\100_10_26_15.def solutions\100_10_26_15.def.sol visualization.html

The command simply returns whether the process has been a success or a failure. Failure may be caused by an IOException, due to for example a lack of permission to read / save a file.

Fig 1. Example visualization file

Figure 1 shows an example visualization file. It can be seen that there are 7 tasks assigned to 3 resources. Also the critical path fits exactly into the duration of the schedule, which shows that the schedule is optimal.

Reference article

Myszkowski P.B., Laszczyk M., Nikulin I., Skowroński M.E."iMOPSE: a library for bicriteria optimization in Multi–Skill Resource–Constrained Project Scheduling Problem", in review process, Soft Computing Journal.