At the Chair of Operations Management at TUM School of Management we are looking for interested and qualified students to conduct their

Interdisciplinary Project (IDP)

The topic is:

PSPLIB: Development and Implementation of a web-based platform for scheduling problem instances and benchmark solutions

Problem description:
The Resource-Constrained Project Scheduling Problem (RCPSP) is a general problem to model real-world scheduling problem. This NP-hard problem has been of interest to academia and industry alike for many years now and is still being investigated to this day. The PSPLIB (Project Scheduling Problem Library) proposed by Kolisch & Sprecher (1997) is a web-based library where researchers can access RCPSP test instances and test solutions generated with their algorithms for feasibility and improvement of existing solutions.

The PSPLIB has been coded in Perl and is hosted and maintained by the Chair of Operations Management of the Technical University of Munich. The goal of the IDP is to code and implement a new version of the PSPLIB in HTML, CSS and PHP. By doing so the current code shall be improved in terms of usability and maintenance. Furthermore, new problem instances for new variants of the RCPSP shall be included.

Requirements:

This project study is suitable for students who have a strong foundation in web technologies (front- and backend) and a fundamental understanding of scheduling problems. A current implementation of the backend logic (written in Perl) may serve as guidance. However for reasons of maintainability and future-proofness, a rewrite of the codebase is required (HTML, CSS, PHP). A solid understanding of scheduling problems and scheduling algorithms is preferable as submitted solutions have to be tested for feasibility.

Beginning date: as soon as possible
Number of students: 1
Project supervisor (TUM): Hendrik Weber (hendrik.weber@tum.de)

Sources: