Chair of Computational Modeling and Simulation
Prof. Dr.-Ing. André Borrmann
Arcisstraße 21, D-80290 München

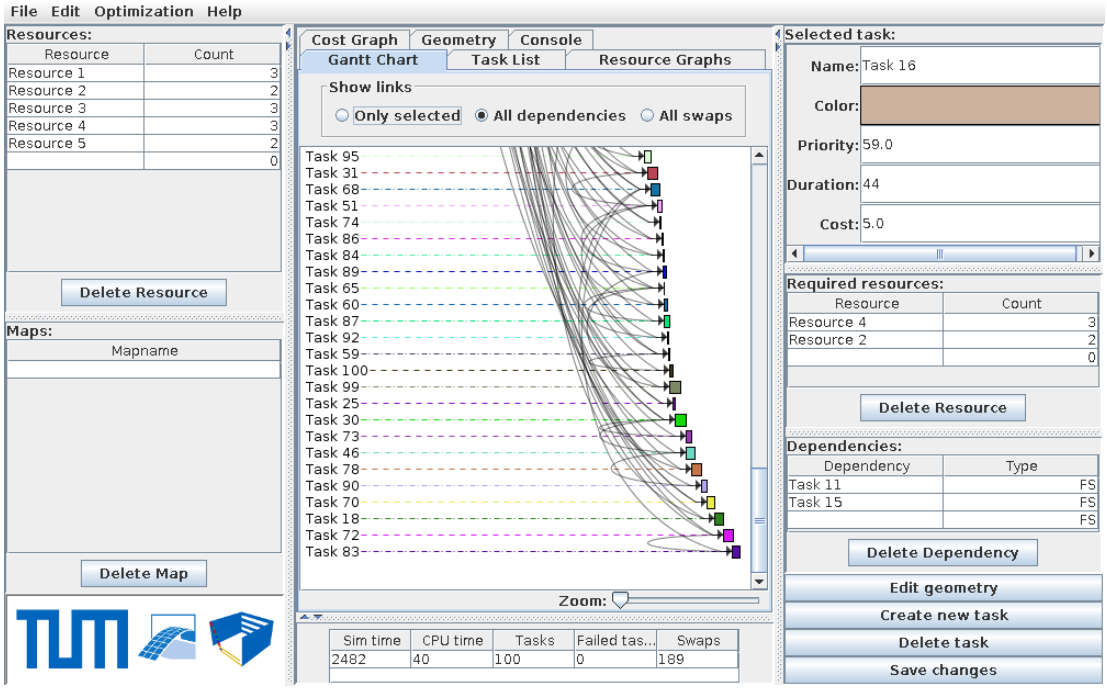
Modeling: ★★★★☆
Mathematics: ★★★★☆
Programming: ★★★★★

Software Lab:

ultimaTUM – Intelligent Scheduling System

Setting

UltimaTUM is a framework for **creating**, **simulating**, and **optimizing construction schedules** taking resource limits and geometric constraints into account. In order to improve on the usability of the software, a number of improvements are desired. Those improvements include the **graphical user interface** (General interface, Task editor, geometry editor, (3D) visualization of the results), **optimization algorithms** (search tree based, multi-criteria optimization, optimization using complex criteria), and methods for the **automatic generation of scenarios from building information models**. The software is written entirely in **Java**.



Tasks (At least one will be assigned during initial team meeting)

- GUI Design [Skills: GUI development, 3D visualization, BIM]
- Optimization algorithms [Skills: mathematics, AI, agents, graph theory, search algorithms]
- Scenario generation [Skills: BIM, geometry]

Supervisors

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