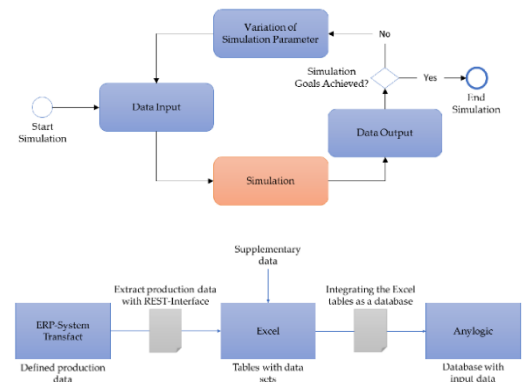


# Technical Project (Master)

Generic simulation - development of a universally applicable simulation model for production optimisation

## Project description:

The aim of this project is the application-oriented further development of a generic simulation solution that supports companies with different manufacturing principles (e.g. flow production and workshop production) in efficiently analysing and optimising their production processes. The model is intended to automatically generate a simulation model from existing ERP data that can be adapted with minimal effort and provides meaningful key figures such as OEE, capacity utilisation, waiting times and production rejects. In addition to modelling, the focus is on developing a user-friendly visualisation and an intuitive operating concept - so that the system is easy to understand and appealing to users.



## Project Tasks

- Updating the requirements analysis and data integration: analysing the specific production data from ERP systems and defining the necessary input parameters for automatic model creation.
- Further development of the generic simulation model: Combination of discrete event simulation and agent-based modelling to map various production processes.
- Redesign of the visualisation: Implementation of functionalities for the dynamic adjustment of simulation parameters, creation of meaningful diagrams and reports for production analysis and optimisation as well as integration of a user-friendly operating concept.
- Possibility and usage analysis: Implementation of simulation experiments at exemplary companies in order to evaluate the added value of generic simulation with regard to production optimisation and decision support.
- Documentation and user manual: Development of comprehensible documentation that explains the functionality, customisation options and practical use of the model.

## Field of Study

- Mechanical Engineering (Master project)

## Qualification

- Sound knowledge in the creation and application of simulation models (Anylogic™). Knowledge analogous to the course Simulation of Production Systems or Energy Systems is required.
- Experience in extruding ERP data into technical models (SQL)
- Ability to analyse key production figures and optimise manufacturing processes
- Development of user-friendly software solutions and didactic documents

## Contact

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