Development a tool to generate different order batching strategies

Motivation
Within the planning of order picking systems, the order batching strategy is a crucial factor. The order batching, the storage assignment as well as the picker routing determines the exact route every picker needs to pass through. Nowadays every order picking system is different. Therefore, you will not find two systems with the same configuration.

Short life-time-cycles, heterogeneous articles as well as the rapid growth of the e-commerce business, require furthermore a continuous review of the existing order batching strategies.

Task Description
Therefore, those circumstances need to be considered already in the early state of planning. To address this concern, the Institute for Materials Handling, Material Flow, Logistics develops a simulation model. Within this model, an autonomous tool shall be implemented which will analyse different order batching strategies. The tool considers the different order batching heuristics and a specific order data set. Afterwards the tool transforms individual customer orders into related order batches. Those batches will be implemented in the higher-level model and verified together with the storage assignment and the picker routing.

To find a suitable overall solution different order batching strategies need to be reviewed. Your work will help to be faster and more efficient, which are two crucial factors within the planning of order picking systems.

Possible lectures are: Förder- und Materialflusstechnik; Planung technischer Logistiksysteme or Materialfluss und Logistik

If you are interested, please send your relevant documents (CV, certificates and transcript of records) to dirk.kauke@tum.de

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