Assembly Line Balancing in South Carolina: Real-world inspiration for research

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The borders of the assembly line balancing problem in research are clear, with well-defined sets of assumptions, parameters, and objective functions. In application, these borders are frequently transgressed. In this seminar we present three related issues based on the real production environment of our industrial partner. Two of the issues are related to line balancing featuring integer programs and constraint programs containing various extensions for task-to-task relationships, station characteristics limiting assignment, and parallel worker zoning interactions. Results indicate that the integer programming model provides a viable solution method for those industries with access to commercial solvers, and that some constraint programs are viable as well.

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