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A NEW ALGORITHM FOR HIGHLY CONSTRAINED RAILWAY TIMETABLING

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The railway timetabling problem consists of two sub-problems, namely the train schedule problem and the train routing problem. Given is a set of trains and of each train it is known which stations the train will visit. The task of the train schedule problem is to determine the profitable arrival and departure time of all the trains at all the stations they will visit and to find the most appropriate station that a particular train should visit in order to save the time. However, there may be some constraints that need to be satisfied. Given all the arrival and departure times, the task of the train routing problem is to determine a routing through the stations and to determine the number of passengers in each station. Then, the platform at which the train will arrive and depart has to be determined. The difficulty of the train routing problem lies at the routing through the stations, since there are many intersecting movements in a station. Developed software is used to find the best departure and arrival time and the station of a particular train that the maximum number of passengers can be collected.

A linear programming model has been used to find the solution, and the excel solver is used to solve the model. Then, a web based system has been developed to send data between the other stations.