

Freight Train Simulator Game

Team: The Hip Replacements

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The goal of Freight Train Simulator is to simulate the railroad industry as depicted on model railroading layouts by dispatching and tracking freight rolling stock to and from modeled industries. Crew (players) receive dispatch orders as well as check in at various locations in via a smartphone application. Players are faced with a complex puzzle of how to move specific freight cars from the middle of a train into a railroad siding using only push and pull movements in a finite space, in a finite time. The frontend application is connected to a database tracking all train movements during a game session and issues dispatch orders to crew. The intent of this project is to construct that database.

The Freight Train Simulator database will handle three primary transaction types: Relation state, game session state, and player state.

- Relation State: This data defines game parameters and relationships, such as properties of rolling stock, product types, and industries.
- Game Session State: This data defines the “state of the world” for a game session. It includes active crews, available rolling stock, available industries, and industry occupancy.
- Player Session State: This data tracks player train length, active waybills (destination orders), and industry interaction.

The queries that must be answered by the database relate to interactions of these three basic states. All game logic is exclusive to this database using views and tables to allow for a multi-user environment and a game world aware of player status, intention, and location.