Train Model User’s Manual

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Team: On Track Trainwreck

Description:The purpose of this document is to describe the features of the train model UI and how to use the module. Capabilities of the user interface are reading and setting variables within the train model. The interface is divided into seven different sections that are labeled 1-7 on the attached diagram.

1. Train Information Table

This is a read only table that shows all of the relevant data regarding the trains to the users of the system. All of these values can be changed using the sections of the diagram that are labeled 2-7. The data shown in the table includes:

* Train ID
  + This is a unique identifier for the trains in the CTC system.
* Setpoint Speed
  + This is the speed that the train is set to in order to accelerate and decelerate properly and is shown in miles per hour.
* Current Speed
  + This is the speed that the train is currently traveling at and is displayed in miles per hour.
* Speed Command
  + This column of the table shows when the increase speed button is being clicked by the conductor. It will show the value “pressed” when it is being clicked. When the button is not being pressed it will simply show a “-“.
* Brake Command
  + This column of the table shows when the brake button is being clicked by the conductor. It will show the value “pressed” when it is being clicked. When the button is not being pressed it will simply show a “-“.
* Lights
  + This column of the table shows whether the train lights are on or off.
* Doors
  + This column of the table shows whether the doors are opened or closed.
* Temperature
  + This column of the table shows the temperature of the cabin.
* Failure
  + This column of the table shows whether the train is in a failure state.
    - The table will show the error types that are affecting the train in the value field as “Engine”, “Signal Pick-up”, or “Brake”.
  + The column can show multiple errors at the same time.

1. Train Chooser Module

This control is a dropdown bar that shows all of the active trains. Once the dropdown bar is clicked the control will expand to show a list of the trains that are on the track. The user can select any of the trains in the list. The selected train will be the train that has its information updated when using controls 3-7.

1. Failure Module

The set of controls within the failure module allows the user of the system to cause failures within train systems. The user has the ability to turn the following failures on and off for the train that is selected:

* Brake Failure
* Engine Failure
* Signal Pick-up Failure

1. Maintenance Module

This module houses the maintenance control which is able to fix the failures on the selected train.

1. Passenger Control

This module houses the passenger controls. The passenger can pull the emergency brake and view the information about the next stop.

1. Conductor Module

This module contains all of the controls that the conductor needs to provide input to the selected train. The first control is a set setpoint speed control. This control is made up of a slider and two buttons. The slider can be adjusted to change the setpoint speed. When the value is set to the desired value the conductor can click the increase speed or brake button to start accelerating/decelerating toward the setpoint speed. The second control is for turning the lights for the train on and off using the buttons provided in the GUI. The third control is for opening and closing the doors with the buttons provided. The last control is a slider similar to the set setpoint speed control. The slider can be adjusted to change the temperature. When the desired temperature is chosen the user can click the “update temperature” button to update the value for the selected train.