# The Train Driver:

1. As a Train Driver I want to add/remove a carriage to/from the end of the train so that I can configure the train to deal with the passenger and freight loads required.
2. As a Train Driver I want the system to prevent shunts which would lead to an invalid configuration in order to ensure the safety of the train.
3. As a Train Driver I want the system to notify me of the reason a shunt has been rejected so that I can correct the error.
4. As a Train Driver I want to be able to view the configuration of the train so that I can tell when it is ready for departure.
5. As a Train Driver I want to be constantly apprised of whether or not the train is overloaded (i.e., too heavy for the locomotive to move) so that I can ensure its safety and readiness for departure.
6. As a Train Driver I want the system to prevent shunts of any kind when there are passengers on board in order to ensure their safety.

# The Conductor:

1. As a Conductor I want to be able to view the remaining seating capacity of the train so that I can manage boarding.
2. As a Conductor I want to know whether or not the train is full so that I can avoid overcrowding.
3. As a Conductor I want to be able to specify the number of passengers trying to board the train, and be advised of the number of excess passengers unable to board so that I can direct them to another train.
4. As a Conductor I want to know the occupancy of each carriage so that I can better manage boarding and passenger comfort.

# Test Scripts

## Script 1 – Building a working train

[TD1, TD5, TD5] [C7, C8, C10]

1. PAG to add a Locomotive of engine type Electric, power 5, weight 200.
2. *The system will now show a box representing a locomotive, and in the status on the right, Can Move should be “Yes!”. It will also shows the train has 0/0 passengers, and is full.*
3. PAG to add a Passenger car, with 80 seats and a weight of 100.
4. *The system shows a new box representing a passenger car at the end of the train, and the status shows the train can move, with 0/80 seats filled, and not full.*
5. PAG to add a Freights car, goods type General goods, weight 120.
6. *The system now shows a new box to the right of the Passenger car, representing a Freight Car (with a G for General Goods). The passenger count is still 0/80 and not full.*

## Script 2 – Adding a freight car after a passenger car

[TD1, TD2, TD3, TD6]

1. Follow Script 1 to step 6.
2. PAG to attempt to add another passenger car with seating capacity of 100, and a weight of 100.
3. *The system alerts the user that an invalid train configuration has occurred. It informs the user “Cannot addCarriage() for passengers to train after freight carriages have been added.”*

## Script 3 – An overweight train

[TD1, TD2, TD4, TD5]

1. Follow Script 1 to step 6.
2. PAG to attempt to add another freights carriage, of dangerous goods type and weight of 100.
3. *The system now shows that the train cannot move. “Can move: No!”*

## Script 4 – Removing a carriage

[TD1, TD4, TD5] [C7, C8]

1. Follow script 3 to step 3. The train cannot move.
2. PAG to remove the last carriage.
3. *The system now shows the train can move, and that it is not full (0/80).*

## Script 5 – Boarding passengers

[TD1, TD4, TD5] [C7, C8, C9, C10]

1. PAG to add a Locomotive of Engine type Diesel, Power 4, and weight 200.
2. *The system shows the train can move, and is full with 0/0 passengers.*
3. PAG to add a passenger car with a seating capacity of 50, and a weight of 80.
4. *The system shows the train can move, and is not full with 0 out of 50 passengers.*
5. PAG to board 30 passengers.
6. *The system shows the train can move, and has a capacity of 30/50 passengers used.*
7. PAG to board another 30 passengers.
8. *The system now shows the train can still move, is full, and that 10 people are stranded.*