ID Tag and Reporter Webpage visual example.

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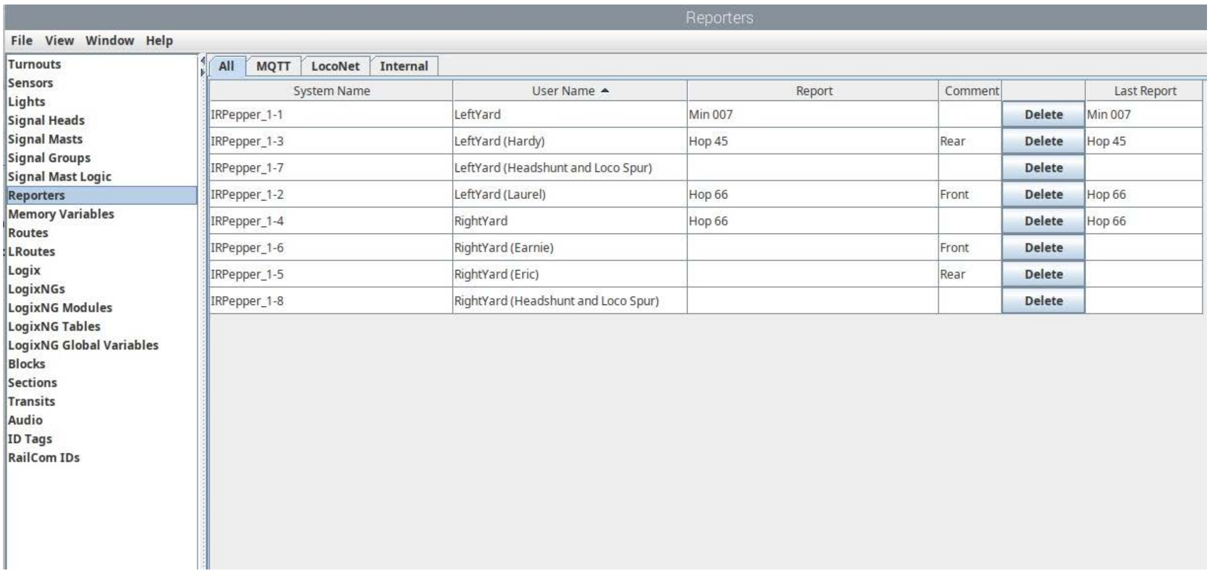
The webpage “tag_locator.htm” shows use of “socket” communications into JMRI to draw an active webpage. The example shows the movement of wagons whilst shunting, but the same principles could indicate locomotives or trains moving to different locations presented on a webpage.

To run the demonstration requires eight reporters, and ID Tags on stock. The JMRI Webserver needs to be running. (The specific example I used was with Eccel Technologies “Pepper” RFID readers, with RFID tags on stock, and some additional LogixNG to convert the XML report from the Pepper to the single string of tag ID expected by the Reporter).

The eight reporter usernames are used in the code, to run it need to match these names (or edit the HTML to match your reporter User Names):

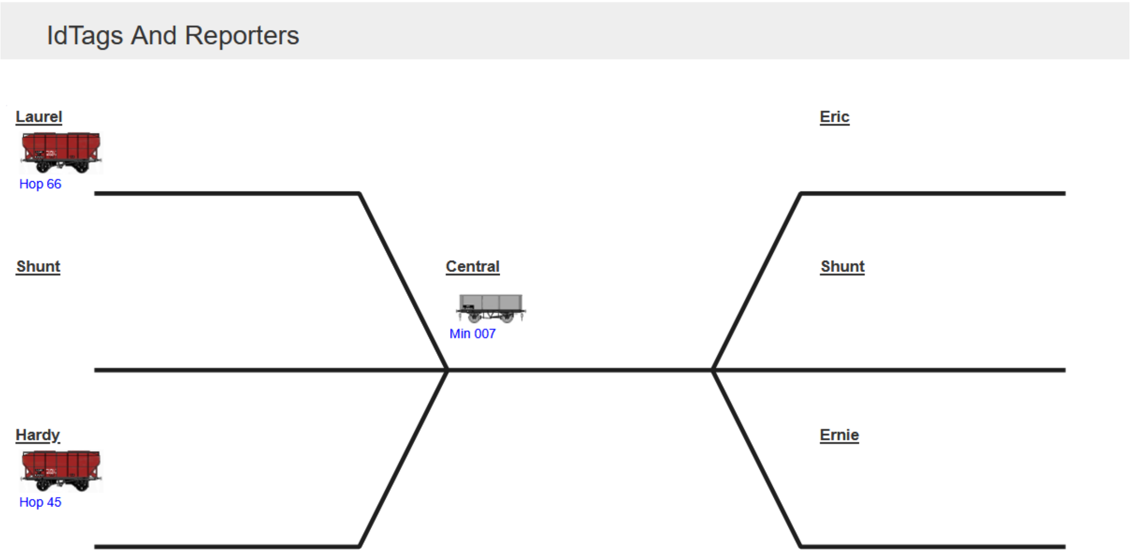
1. LeftYard
2. LeftYard (Laurel)
3. LeftYard (Hardy)
4. LeftYard (Headshunt and Loco Spur)
5. RightYard
6. RightYard (Eric)
7. RightYard (Ernie)
8. RightYard (Headshunt and Loco Spur)

The brackets notation is entirely optional with this example, but I used the same usernames in a related example linked to OperationsPro “Location” constructions where the brackets indicate a “spur” at a “location”.

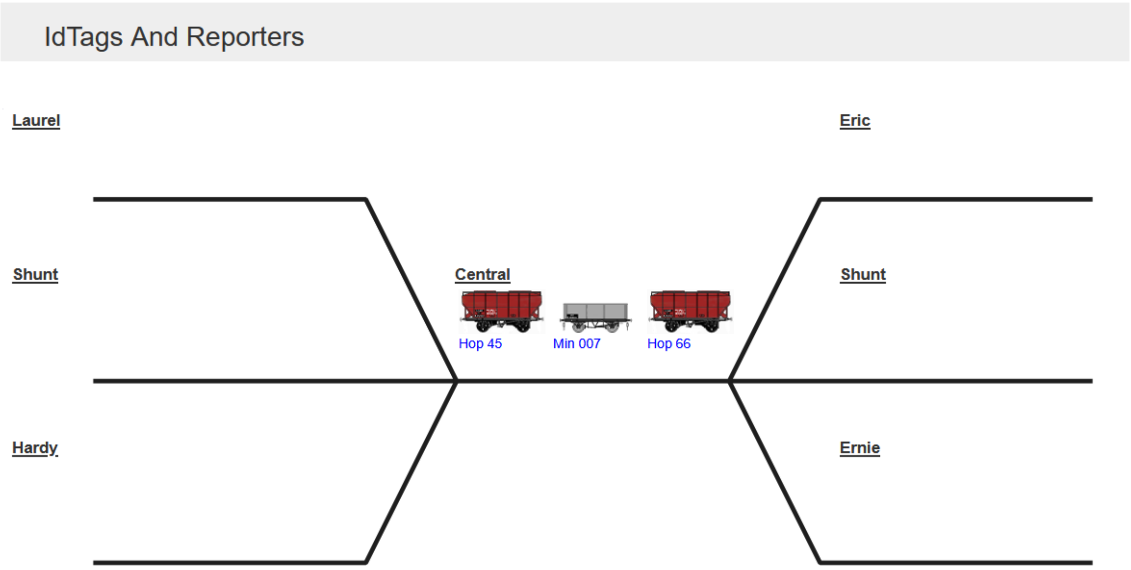


System Name	User Name ▲	Report	Comment		Last Report
IRPepper_1-1	LeftYard	Min 007		Delete	Min 007
IRPepper_1-3	LeftYard (Hardy)	Hop 45	Rear	Delete	Hop 45
IRPepper_1-7	LeftYard (Headshunt and Loco Spur)			Delete	
IRPepper_1-2	LeftYard (Laurel)	Hop 66	Front	Delete	Hop 66
IRPepper_1-4	RightYard	Hop 66		Delete	Hop 66
IRPepper_1-6	RightYard (Earnie)		Front	Delete	
IRPepper_1-5	RightYard (Eric)		Rear	Delete	
IRPepper_1-8	RightYard (Headshunt and Loco Spur)			Delete	

The webpage looks like this when all is working:

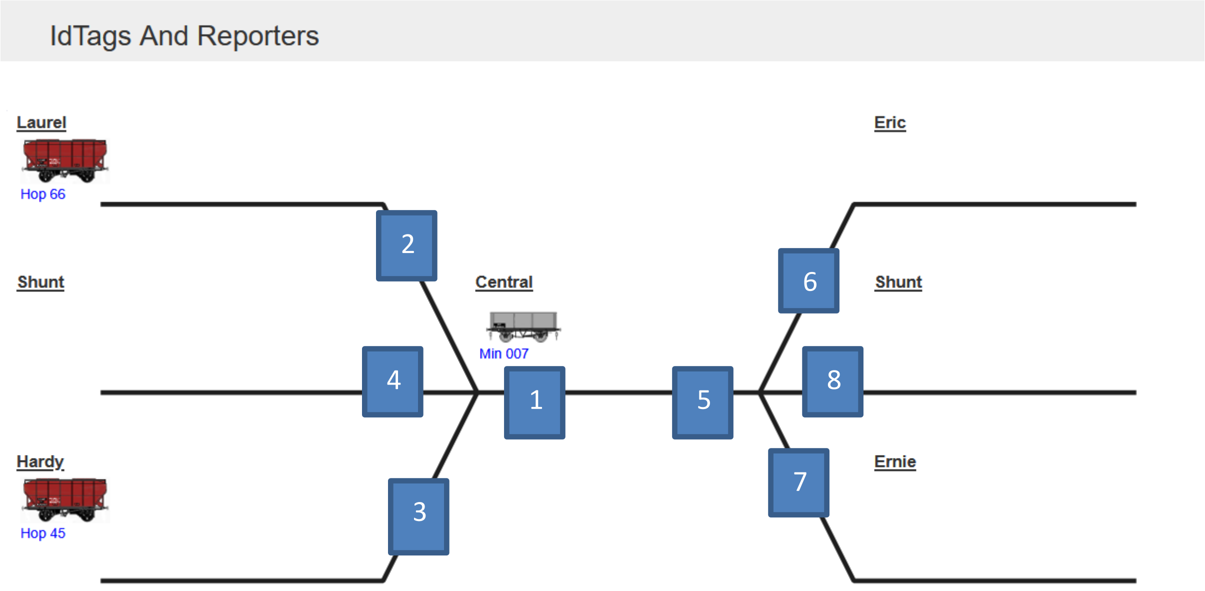


Or this when all cars have moved to the “Central” section of track:



The icons for cars, and the track diagram are in the sub-folder “icons”.   There is a software switch in the HTML file to turn the wagon icons off if they are not required. The icon filename (a PNG file) needs to match the “User Name” allocated to the ID Tag associated with the car.

The eight reporters are positioned as shown below (numbers corresponding to list of reporter User Names described above):



IdTags And Reporters

Within the HTML, the direction of entry to tags is described. As stock passes over reader “2”, it is added to the list displayed in “Laurel”, adding each additional tag to the right of the previous one. Conversely, as stock passes over reader “6”, it is added to the left of the previous item of stock. Thus the display maintains the visual arrangement of stock added to the track spur.

The area between tags 1 and 5 is described in the HTML as the location “Central” and accepts tag entries from either end. Depending whether 1 or 5 is passed first determines whether to add to “left” or “right” of the current list of items in “Central”. (Note that how “Central” behaves is coded in the middle of one of the functions in the HTML – this is a demonstration of concept !).

Once an item is within a location, further reports from the reporter(s) at that location do not alter the list of cars at that location.

The HTML code is mostly Javascript.

It may be useful to inspect the HTML at the bottom first – this sets out the various locations as “DIV” structures, which are positioned on the screen using the CSS (top of file).

The Javascript begins with calls to various libraries which bring in functionality required. After defining variables used, there are two functions (addCarToLocation and redrawLocationHTML). The former adds the new Car to either the front or rear of the list of cars at the location. The latter redraws all of the Locations, one after another.

Then the Javascript opens up various “sockets” with the JMRI Webserver. It retrieves the set of Reporters, purely to obtain the “User Name” of each Reporter. The set of ID Tags are retrieved, and this is used to create listeners on any change to any ID Tag (this is where changes are passed to the webpage). The “ID Tag” function, called when there is a change to an ID Tag is where most of the work is done to place the car (ID Tag) in the correct location, and call updates to the display of information.

Known limitations:

Because the list of cars at a location is by User Name, should a new ID Tag appear, it initially has User Name “null” (empty string). Should this then be edited in the ID Tag table to add a User Name, there are now two different User Names in the webpage – “null” and the new User Name. So, “null” will persist until the webpage is reloaded.

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