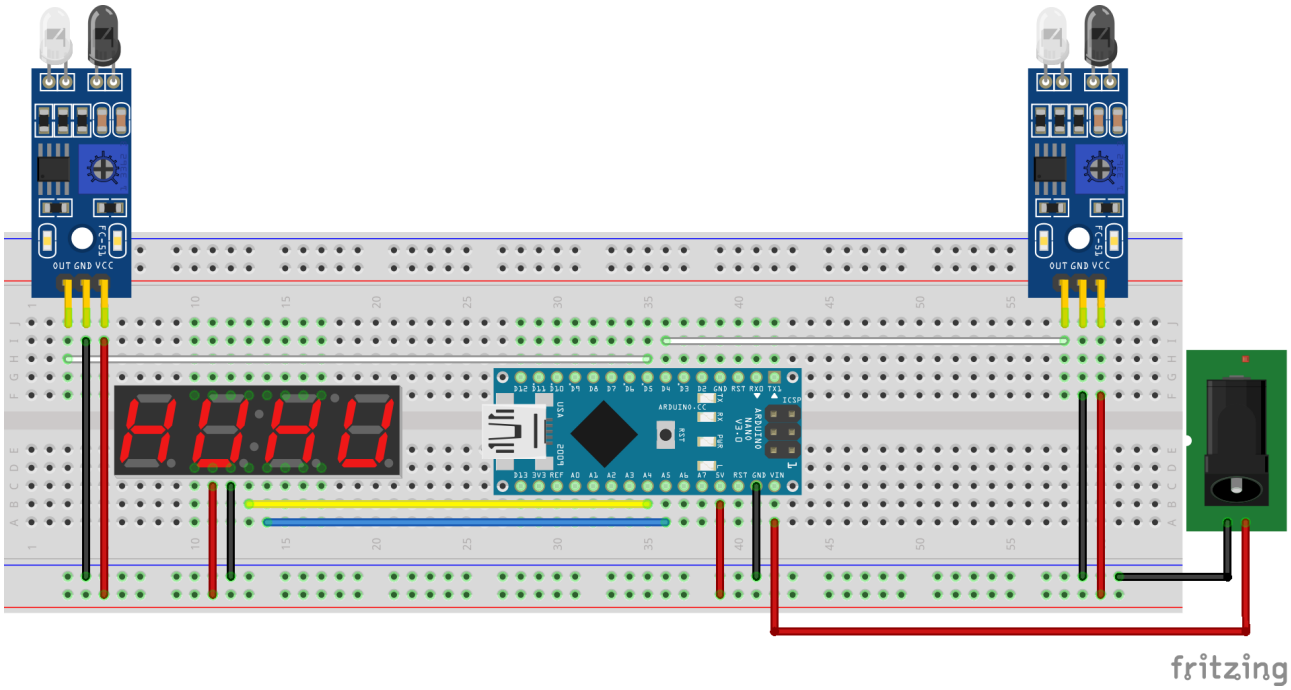
First of all I did not originate this code. The original idea was from Steve Spence and later modified by Bobot on Youtube both in the USA then I took it and made it run with the metric system and MPH.

Here is the wiring Diagram for the Speedometer.



To fit to the layout just put the sensors 1 metre (1000mm) apart.
Face then towards the track you will be measuring the speed of the loco's on.
As in the pic below.

I just mounted mine in the track for convenience but you can put yours further away if you want to.

Connect the leads from the speedometer box to the sensors
NOTE the sensor end of the cables.
The sensor as you look at it in the picture has the :-
VCC (red wire) at the bottom.
Then the GND black wire)
Then at the top is the signal (white wire).
Then put power to the box.
You can use 5 vdc to 9 vdc centre pin is positive.

You will probably need to adjust the sensors to your lighting conditions (the sensors are infrared but sometimes the ambient light can effect them). Anyway just turn the pot on the sensor until you have just one of the two led's on the sensor board lit.
I usually then restart the Arduino (just pull the power)
You are now ready to measure the speed of your locos.
When the Arduino has stared up the display should read “8888”.

Set a loco going and pass the first sensor the it does not matter which sensor triggers first so your loco can go either way to start reading the speed. When it passes the second sensor the display will give you the MPH of the loco.
If the speed is between 50 and 70 then the display will flash slowly.
If the speed is above 70 then the display will flash faster.

I have left a hole in the side of the box in case I need to update the Arduino code.