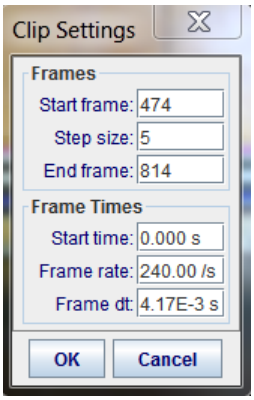
This assignment serves to introduce you to the Tracker Motion Analysis software and to review concepts of 1-Dimensional motion.

Procedure

1. Go to my teacher page (http://jmh.nbed.nb.ca/teacher/mr-macdonald).
2. Right-click on the file that is named: *cart_collision_mass_difference.*mov and choose *save target as…*
3. Save the file to your *H:*\
4. Open the Tracker program from the USB drive.
5. Load the file you just downloaded and set up the clip settings as below-left.



6. Create a calibration stick and stretch it from one black hole to the other and make its length 0.2.

7. Insert a coordinate system and place the origin near the left edge of the video.

8. Track the red car as it travels from the left side, collides and returns to the left.

9. Use a line of best fit of your data to figure out how fast the car was going before and after the collision with the blue car.

Analysis

1. Open a WORD document to write your analysis and answer the following questions.
2. Without calculation, what are two indications from the graphical data that the red car moved fastest after the collision with the blue car?
3. Insert two copies of the graphical analysis – one showing the analysis of the car as it moves right and the other as it moves left.
    a. What was the velocity of the red car before and after the collision?
4. Collect the results from two other groups (include who they were).
5. Did each group have the same result for the car's velocities? Where you close or is there a lot of disagreement in the results?
    a. Write two reasons why another group could have a different result than you.
6. How do you think it was possible for the red car to gain speed?
7. Save your results with your group's names in the file name and tell me whose account it is saved under and I will retrieve it.

We will be doing a similar exercise with an object that is clearly accelerating. If there is an object that you want to analyze in a similar manner then share your idea with me and we will look into filming it.