vPython: Extra Credit

Model the situation presented in the Lexus Lab







## STEP 1: INITIAL CONDITIONS

- (Create a rectangle) for two identical cars.
- Create a sphere for the bullseye and position it an equal distance between the two cars.
- One car should be to the left is the same distance to the bullseye as the falling car is above it.
- The car to the right will start at its maximum velocity.
- Show an object falling that same distance, *beginning from rest* and accelerating at the rate due gravity (we will first model with no air resistance).
- Initialize two graphs: one position-t graph for the falling car, and one position-t graph for the driving car

## STEP 2: LOOP

- Repeat the loop for the appropriate amount of time...
- Write: rate (100)
- Update your position statements for BOTH cars (look back at previous assignments....ball.pos.x)
- Update the velocity statement for the ball (look back at previous assignments ......ball.velocity.x

## STEP 3: EXTENSIONS (optional)

• Model the car reaching terminal velocity