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Zombie Apocalypse

Goal: Exploring the modeling and simulating of a zombie apocalypse programmed in Racket using Dr. Doug Williams inference engine and animated-canvas library.

[ Maybe Andrew's part here?]

The animations involved make use of of Dr. Williams animated-canvas library. The actors in the simulation, the zombies and humans, are represented as ellipse either colored red and blue respectively. The shades of color that they are actually colored depends on the strength of the actor itself, which as explained earlier, is assigned randomly with a Gaussian distribution. The darker either the shade of red or blue means the stronger the actor is in relation to the other actors. The actual individual drawing of the actors as they change position is done using a drawing context. As each rule in the inference engine is executed and an actors position is changed this is sent to the canvas via the drawing context but not made visible to the user yet. The animated-canvas library actually operates with two canvases. One canvas is the one that is actually shown to the user, while the second canvas acts as a buffer and holds all the changes made to the canvas. When all of the rules have been executed the final rule we have actually steps the time forward. This is where the actual swapping of the two canvases happens. Once the canvas is swapped the new buffer canvas is then cleared and any new drawing changes will be made to this one. Using the animated-canvas library allows for smoother animations and better performance. At the time of this writing the random wall generation and drawing code is working and the actors can not traverse through the walls. However, there are a few bugs that we have yet to work out. The main ones are that an actor can still spawn with in a wall which is obviously not ideal and the edge detection code between the actors and the wall could use some work.

[ Maybe James's part here?]