ABM Project 2: Hot Spots

**Why this example?**

* Honestly, this project was my backup after attempting to do a take on the traffic example. I didn’t feel I was going to be able to finish the traffic one in time, therefore I had to pivot to this example.
* Additionally, this model left plenty of room for creativity. Perhaps if I had started with this one originally, I would have had more time to do more aesthetically.

**What is it?**

* This project splits the map into four different regions each with a different climate and temperature. Agents will roam throughout the map and react to the different temperature regions by changing their movement speed based off how hot the region is.

**How does it work?**

* The agents will roam throughout the different hotspots and depending on which region they land in; they will adjust their speed accordingly. Once they land in a new hotspot zone, the movement speed changes to the new zone parameters.

**Things to Notice**

* The yellow zones have cacti to resemble a desert and it is in this zone that the agents will show the greatest movement speed as they struggle to escape the desert heat. On the contrary, the movement speed in the blue zone (water) or the white zone (snow) is slower as movement speed is slow in this material.
* Depending on which region you are testing, there are some designs where heatstroke is much more common than others.

**Things to Try**

* Try toggling through the different region designs.
* Toggle the starting speed and see if a higher speed prevents heatstroke deaths.
* Toggle the tolerance level to see if an equilibrium is reached between the movement speed and the tolerance of heat.

**Extending the Model**

* Make the sharks actually function as predators. This honestly would have been doable by the time I am presenting but was not quite able to get it added in before the 11:59 pm deadline.
* Perhaps an energy metric could be added, and various factors could affect it in addition to heat stroke such as losing energy for swimming or eventually losing energy from hypothermia.

**Credits and References**

* Wilensky, U. (1999). NetLogo. http://ccl.northwestern.edu/netlogo/. Center for Connected Learning and Computer-Based Modeling, Northwestern University, Evanston, IL