Zombies
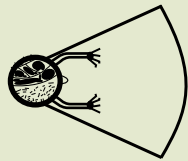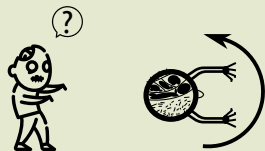
a.k.a the "Zs"   representation in the GUI : ➤

Zs are walking around randomly at walkSpeed
They can rotate up to zombieMaxRotation degrees
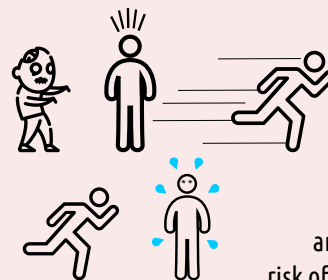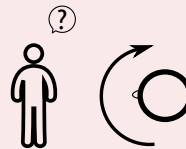
Zs perceive the world within a zombiePerception radius

When a H is within zombiePerception radius, a Z will engage pursuit
For the duration of pursuit, Zs run at zombieRunspeed

Each pursuing Z releases pheromones on ground tiles
Zs are attracted by pheromones inside their zombiePerception radius

Zs behaviour State machine

walking (towards pheromone) → pursuing
pursuing → fighting
fighting → walking
fighting → dead (at last)

SOLDiERS
are Hs with their own parameter values, usually better than civilians.

Humans

a.k.a. the "Hs"

representation in the GUI : ➤

Hs are walking around randomly at walkSpeed
They can rotate up to humanMaxRotation degrees

If Hs are informed about rescue zone locations, they move towards the nearest one
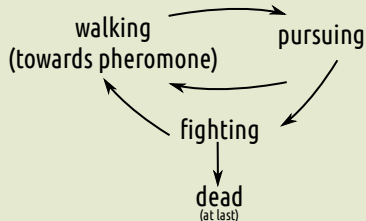informed Hs can share the rescue zone locations with others with a humanInformProbability chance

Hs perceive the world within a humanPerception radius
when a Z is within humanPerception radius, Hs try to flee

During flee, Hs run at humanRunspeed and have a humanExhaustionProbability risk of becoming exhausted and stop running

Upon seeing another H running, Hs will start running with them with a humanFollowPobability chance

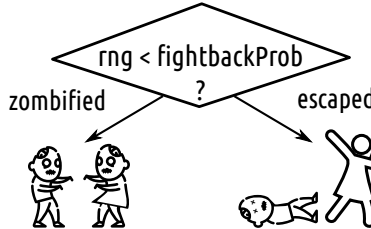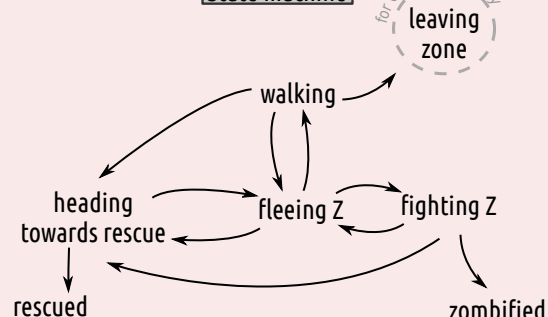**Hs behaviour State machine**

walking
leaving zone (for open maps only)
heading towards rescue
fleeing Z
fighting Z
rescued
zombified

Fight

if H is in infectionRange of Z,
H has humanFightBackProbability chance to fight and kill Z

rng < fightbackProb ?
zombified   escaped

The world
As a raster
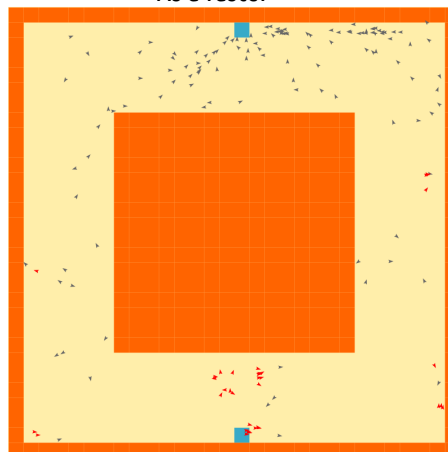
Stadium: 4 rescue zones of width 1

🟨 Ground   🟧 Wall   🟦 Rescue

➤ Zombie   ➤ Human   ➤ Soldier   ➤ Red cross

Other built-in worlds

stadium: 2 rescue zones of width 1

jaude: one rescue zone of width 1

1 simulation step: 1 s
1 simulation: 500 steps

Environment and global parameters
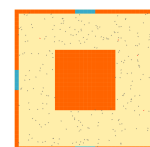
zombiePheromoneEvaporation set the rate of evaporation.

There is numberZombies of Zs at the beginning,

and numberHumans of Hs,

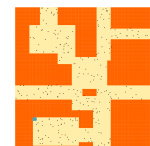among which a humanInformedRatio is aware of the rescue point location

and armySize soldiers, if ArmyOption is set to Army