Spike Outcome Report

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Number: 09

Spike Title: Agent Marksmanship

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Goals:

Create an agent targeting simulation with:

• an attacking agent (can be stationary),

• a moving target agent (can simply move between two way points), and

• a selection of weapons that can fire projectiles with different properties.

Be able to demonstrate that the attacking agent that can successfully target (hit) with different weapon properties:

• Fast moving accurate projectile. (Rifle)

• Slow moving accurate projectile. (Rocket)

• Fast moving low accuracy projectile (Hand Gun)

• Slow moving low accuracy projectile (Hand grenade)

Technologies, Tools, and Resources used:

* Sublime Text 3
* Python v3

Tasks undertaken:

* Create three classes, one for shooter, one for target and one for the projectile
* Write in the shooter so it has the ability to aim and shoot projectiles, and has a set position.
* Make the target move from one point to another and back again in whatever manner you see fit.
* Give the projectiles a velocity and current position.
* Update the world class from autonomous agent to use the above three classes and allow them to update.
* Make the shooter estimate the time it will take to get to the position it is aiming at.
* The shooter must update its estimate based on whether or not it will hit, if it will hit it must fire a projectile.
* The projectiles must have an amount of inaccuracy depending on the weapon chosen.

What we found out:

* How to make estimates.
* How to estimate aim positions
* How to shoot
* How to create inaccuracy in shots