Spike Outcome Report

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