**Spike:** 15

**Title:** Agent Marksmanship

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**Goals / deliverables:**

* Code
* Report

**Technologies, Tools, and Resources used:**

* Latest Version of the Visual Studio Code or the Python IDE
* GeeksforGeeks: <https://www.geeksforgeeks.org/python-functions/?ref=shm>
* W3schools: <https://www.w3schools.com/python/python_classes.asp>
* Computer/Laptop

**Tasks undertaken:**

* Download and install the latest version of the Python IDE or Visual Studio Code
* Download and install Git bash terminal
* Use the git bash terminal for configurating and running the code while the code is initialised in a folder
* The `attack` method calculates a steering force for an agent to pursue a target position. It determines the desired velocity towards the target position, adjusts it to the maximum speed, and subtracts the current velocity of the agent to generate the steering force.
* `fire\_weapon` method initiates a projectile firing action from the agent's weapon towards a specified direction. It invokes the weapon's `fire` method with the agent's position and the provided direction, appends the resulting projectile to the agent's list of projectiles, and returns the projectile for further handling if needed.
* The `wander` method implements a steering behaviours where an agent moves in a random yet controlled manner. It calculates a random target position within a defined radius and distance, adjusting it based on the agent's current heading and side. The method returns a steering force directing the agent towards the calculated target position.
* `on\_mouse\_motion` and `on\_mouse\_press` methods handle mouse input events in a user interface. `on\_mouse\_motion` updates the agent's target position based on mouse movement, while `on\_mouse\_press` sets the agent's target position to the coordinates of a mouse click. These methods are typically used in interactive applications to control agent behaviours based on user input.

**What we found out:**

The outcomes that occurred were most of the agents in the program were able to hide behind a circle and find the nearest one

A screenshot of a computer

Description automatically generated

**Open issues/risks:**

List out the issues and risks that you have been unable to resolve at the end of the spike. You may have uncovered a whole range of new risks as well.

* The bullets are not visible
* Nothing graphical was able to append
* No modes were able to append