PRIME
Predator-Prey Reinforcement Intelligent Model Engine

Model Simulation Report

Model Name: bruno3

Date: 2025-01-24

Environment

Grid Side: Defines the size of one side of the grid, making it a square.

20

Episodes: Total number of episodes to be executed in the simulation.

5

Steps per Episode: Number of steps allowed in each simulation episode.

10

Population

Initial Count: Specifies the initial number of agents at the start of the simulation.

Predator: 10

Prey: 20

Max Count: Defines the maximum number of agents allowed in the simulation.

Predator: 100

Prey: 100

Spawn Rate: Percentage chance of agent reproduction.

Predator: 10%

Prey: 20%

Step Decay: Amount of life points lost by agents for each step taken.

Predator: 20%

Prey: 20%

Neural Network

Learning Model: Specifies the type of learning model used by predator and prey agents in the simulation

Predator: DQN

Prey: DOUBLE

Advanced Layer: Specifies any additional layers or network modifications used to enhance agent learning.

Predator: NONE

Prey: RADAR

Quantitative Population Data

Predator Stats

	Reward	Done	Step
Mean	297.8334	5.2	9.0
Median	384.0	5.0	9.0
SD	376.4993581963189	2.03960780543714	0.0
Max	828.0	9	9
Min	-317.25	3	9
Variance	141751.76672224002	4.16	0.0
Range	1145.25	6	0
IRQ	289.58299999999997	1.0	0.0

Prey Stats

	Reward	Done	Step
Mean	-205.53340000000003	3.8	9.0
Median	-234.0	3.0	9.0
SD	152.26350980402364	2.039607805437114	0.0
Max	32.833	7	9
Min	-386.833	1	9
Variance	23184.17641784	4.160000000000001	0.0
Range	419.66600000000005	6	0
IRQ	223.66699999999997	2.0	0.0

Behavior Data

Predator Behavior Stats		Prey Behavior Stats	
Prey Captured:	26	Predator Escape:	19
Nearby Prey:	433	Nearby Predator:	636
Exploring Map:	34	Exploring Map:	156

Population Charts