PRIME
Predator-Prey Reinforcement Intelligent Model Engine

Model Simulation Report

Model Name: teste2
Date: 2025-01-11

Environment

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

10

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

5

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

5

Population

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

Predator: 5

Prey: 10

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

Predator: 1000

Prey: 1100

Spawn Rate: Percentage chance of agent reproduction.

Predator: 10%

Prey: 10%

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

Predator: 22%

Prey: 22%

Neural Network

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

Predator: DQN

Prey: DQN

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

Predator: None

Prey: None

Communication: Indicates if offline communication is enabled or disabled for each type.

Predator: Disabled

Prey: Enabled

Quantitative Population Data

Predator Stats

	Reward	Done	Step
Mean	351.1002	5.2	4.0
Median	358.0	5.0	4.0
SD	52.857505553705415	1.32664991614216	0.0
Max	425.667	7	4
Min	275.0	3	4
Variance	2793.915893359999	1.7600000000000002	0.0
Range	150.66699999999997	4	0
IRQ	71.5	1.0	0.0

Prey Stats

	Reward	Done	Step
Mean	-76.7332	0.2	4.0
Median	-91.5	0.0	4.0
SD	37.199711409633274	0.4000000000000001	0.0
Max	-7.833	1	4
Min	-116.333	0	4
Variance	1383.81852896	0.16000000000000006	0.0
Range	108.5	1	0
IRQ	23.665999999999997	0.0	0.0

Behavior Data

Predator Behavior Stats		Prey Behavior Stats	
Prey Captured:	26	Predator Escape:	1
Nearby Prey:	84	Nearby Predator:	136
Exploring Map:	7	Exploring Map:	27

Population Charts