PRIME
Predator-Prey Reinforcement Intelligent Model Engine

Model Simulation Report

Model Name: orcasafricanas

Date: 2024-11-07

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.
50
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: 20
Prey: 50
Max Count: Defines the maximum number of agents allowed in the simulation.
Predator: 200
Prey: 200
Spawn Rate: Percentage chance of agent reproduction.
Predator: 70%
Prey: 70%
Step Decay: Amount of life points lost by agents for each step taken.
Predator: 8%
Prey: 8%

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: Enabled
Prey: Enabled

Quantitative Population Data

Predator Stats

	Reward	Done	Step
Mean	3330.36498	54.18	9.0
Median	3323.5	54.0	9.0
SD	238.008283963436	4.667718928984478	0.0
Max	3735.833	63	9
Min	2774.583	44	9
Variance	56647.943235219594	21.7876	0.0
Range	961.25	19	0
IRQ	287.16674999999987	6.0	0.0

Prey Stats

	Reward	Done	Step
Mean	-712.72332	2.18	9.0
Median	-718.75	2.0	9.0
SD	176.85955863785708	1.9046259475288057	0.0
Max	-134.5	9	9
Min	-1157.5	0	9
Variance	31279.3034815776	3.627600000000001	0.0
Range	1023.0	9	0
IRQ	240.54149999999993	2.0	0.0

Behavior Data

Predator Behavior Stats		**Prey Behavior Stats**	
Prey Captured:	2709	Predator Escape:	109
Nearby Prey:	6381	Nearby Predator:	12221
Exploring Map:	406	Exploring Map:	839

Population Charts