TEB1113/TFB2023: ALGORITHM & DATA STRUCTURE

Performance Report on Drone Swarm Simulation Homework 2- Partitioning

Prepared for: Dr. Nordin Zakaria

Num.	Full Name	Student ID	Course
1.	Siti Nurfatimah Az Zahra binti Norhisham	20001348	Computer Science
2.	Addly Aiman bin Mohamad Faizal	22004410	Computer Engineering
3.	Nur Husna Husniyah binti Abdul Razi	22002729	
4.	Yasreen bt Mohamed Yusoff	22005648	
5.	Nurul Anisa Binti Sufian	22005637	

1.0 DEVICE SPECIFICATION

Model: Victus 15

RAM: 16GB

Storage: 500GB

Processor: AMD Ryzen 5 7535 HS

GPU: Radeon Graphics

Operating System: Windows 11

2.0 APPLICATION DOMAIN

2.1 Introduction

Our chosen application for the drone swarm is security. This project simulates a driven drone swarm for security, with drones programmed to patrol within a specified area. As they approach a boundary, they change color, and if they escape beyond a certain radius, they self-destruct to prevent straying. Key behaviors like alignment, avoidance, and cohesion ensure the drones move cohesively as a group, demonstrating the potential for controlled and autonomous applications in security.

2.2 Screenshot(s)

Figure 1

Firgure 1 shows the simulation of the drone swarm. Red drones mean that they have detected a boundary and are actively adjusting their position to remain within the designated patrol area. This color change acts as a visual alert to signify that these drones are at risk of crossing into unauthorized zones. Blue drones indicate normal operation status, patrolling within the designated area without approaching boundaries.

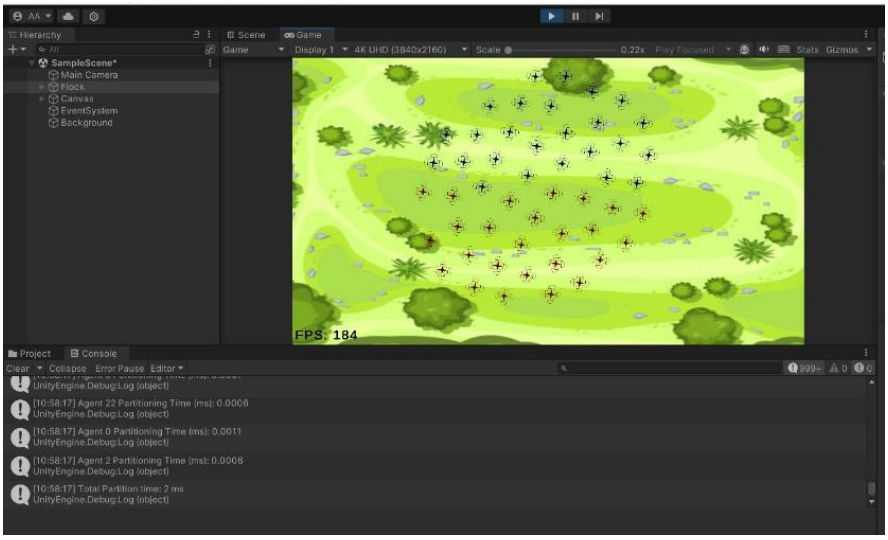

Figure 2

Figure 2 shows runtime of the program at console.