

Report

Design

The design doesn't deviate from the original game of the tutorial, instead of a player vs player we programmed a different behaviour to each tank.

One tank follows a set of points setted on the map as if completing a loop, this behaviour is known as patrolling, while the other tank just wanders randomly through the map going where it wants without an objective other than moving.

The game still consists of a best of 3 rounds to see which tank can destroy the other faster.

Doubts

While doing the assignment we stepped upon some doubts that we will report here.

- The tanks shoot to the position they detect the other tank, but this only works if the target isn't moving. With moving targets this method is useless, so we wondered what would be a better method, maybe taking in account the range of the explosion of the shell and shooting in the direction of the target's movement few coordinates more. Maybe just giving the speed of the target and taking it into consideration will be another method but the tank could also turn so we ended up with the conclusion of designating an area of possible hit, this area will be situated with its center desplaced a bit forward from the target's center. (Example: if the target is at 2, 0, direction east, then the area will be centered at 3, 0, the offset depending on factors like velocity and shell explosive radius.).
- The wander behaviour doesn't detect that it is going to a corner until it arrives, this we thought could be solved by further improving the script with some sort of Visibility area that detects a cone in front of it to see if they are going to a closed space and avoid it.

Further Expansions

Due to some reasons we couldn't dedicate as much time as we wished to this assignment, just reaching the minimal requirements. But for this reason we added this segment to expose ideas that didn't make it this time.

Our original idea was to do a similar approach to an elimination race.

Imagine a line with a starting point A and an ending point B in the extremes, then we will divide the tanks in 2 teams, red and blue. The red tanks start at point A with the objective to reach point B and in-between are blue tanks patrolling.

Is kind of a survival of the best race, moving takes more importance in this game while shooting stays in the background. While it's true that the red tanks could advance whilst destroying the patrolling blues, how they move will prove more important in a race type game like this one.