**User Manual**

**Starting the game**

In the games archive use the command *python3 ctf.py -singleplayer* or *python3 ctf.py - s* to start the game in singleplayer mode. Use the command *python3 ctf.py -multiplayer* or *python3 ctf.py -m* to start the game in multiplayer.

**Implemented features**

1.Moving the tank

Feature that allows us to rotate the tank right and left and move the tank forward and backward.

2.Picking up the flag

The feature allows us to pick up the flag

3. Shooting

This feature allows the tank to fire and destroy wooden boxes and tanks

4. Borders

Creates a boundary around the map that can’t be passed

5. Singelplayer and multiplayer

Either one or 2 people can play at the same time

6. Collsision handler

Removes the bullet upon impact with an object

7. Wining condition

This feature allows a tank to win if it brings the flag back to their base 5 times

8. Hitpoints

A tank now takes multiple hits to kill

9. Sound

Added sound to the game

10. respawn protection

This allows a tank to not be killed right of the bat.

11.Score screen

This shows a score screen when the flag has been captured.

12. AI

Creates AI tanks that can play against the player

**Functionality of Files**

**ai.py:** The ai.py file contains most of the functionality of the implemented AI. It houses the class called AI which gets called in the main ctf.py file. That class in turn has the required functions for making the ai work like the functions maybe\_shoot which determines if the tank is to shot or not. The class also has the move\_cycle which, combined with its helper functions, makes the tank move to the wanted position.

**ctf.py:** The ctf.py is the main file which houses most of the calls to the other files and is also the file which you run to start the game. The ctf.py has many functions. It initializes the map, the tanks, the sound, and, the ai. It also handles the player-controlled movement, the victory conditions, and, the collision along with calling the necessary functions from the other files.

**gameobjects.py:** This file contains almost all of the classes. Those being the provided game objects classes, the tank, the flag, and, the boxes along with our own programmed bullet class. Inside of those classes are functions that allow: the movement of the tank within the physics engine, picking up of the flag among other things. In essence it handles the movement and functions of our game objects.

**maps.py:** The maps.py file is a place for the list representation of the different maps the game can use. This makes a clearer structure of the code so that a new map can easier be made.

**data folder:** The data folder holds the different sprites that the tanks, boxes, and, map use. It also holds the sounds that are played during the course of the game like the background music and sound effects.