

Epic Tank Bananas (ETB) - User manual

For users:

To run the game, type in “*python3 ctf.py --playermode*” into the terminal. The user will need to replace *playermode* with either “*--singleplayer*”, to play alone or “*--multiplayer*”, for multiplayer mode. After a gamemode has been selected, the game is ready to run. The game shows up in windowed-format on your screen. In order to exit the game, simply press the escape-button. To control the tank, use the arrow keys on your keyboard. Use the up or down key to accelerate or reverse and use the right or left keys to turn. The second player can also play the game by using the W-A-S-D and space keys when multiplayer mode is selected. Use space to shoot and the other keys to control the tank. The objective of the game remains the same while an extra challenge of another human player is added!

By pressing the return-button, your tank shoots a bullet. The direction of fire is controlled by the direction your tank is pointing in, so make sure to aim properly! When enemy tanks get hit by a bullet, they respawn at their respective home base.

There are several different settings that can be changed. Use the area in the picture below of the *ctf.py* file to modify your gaming experience.

The objective of the game is to retrieve the flag located in the center of the map. To do this, drive your tank into the flag and return to your home base at your starting location. If you are shot by enemy tanks while carrying the flag, the flag is dropped at the location the carrier was shot at. The carrier then respawns at their home base, and has to make another attempt at retrieving the flag. After the flag has been returned to a home base, the player returning the flag receives a point. Points are displayed in the scoreboard available in the terminal.

```
!-- Set game parameters
time_cond  = False    #Set time limit on / off
time_limit = 10       #Set the time limit (seconds)
round_count = False   #Set round counter on / off
round_limit = 2       #Set the round limit
score_count = True    #Set score limit on / off
score_limit = 2       #Set the score limit
fog_war    = False    #Set fog of war on / off
current_map = maps.map0 #Set the current map
```

Some parts of the map are destructible. For example, wooden boxes can be shot and destroyed. This enables players to take control of the situation when dealing with enemy players or A.I. When a destructible object is shot, an explosion animation is played. But don't be scared, the explosion does not harm the players and will despawn soon.

Functionality explanation:

The game uses several different python files in order to function. There are three main ones, *ctf*, *gameobjects* and *create_objects*. “Ctf” contains the game’s main loop. This controls whether the game is running or not, display/physics updates and keyboard input. This is the so-called “heart” of the game. To run the game, run the *ctf* file in the terminal. The game should then pop up in windowed format on your screen. The *create_objects* file is a part of the code clean up process and is responsible for spawning in walls, tanks and other objects visible in the game.

The file called *gameobjects* contains the framework for the different classes used by the game. These classes ensure that the physics related mechanics function properly.

Along with the three main-files, there are an additional three support files called *images*, *maps* and *Ai*. These include the icons and images and maps needed to play the game as well as the code controlling the ai opponents. The first couple of lines import these support-files to the terminal, so make sure to have all of these downloaded and located in a folder together. In addition to the python files, there are two external libraries called *pymunk* and *pygame*. These contain important game physics and game objects.

List of implemented features:

Counting score (1 pt) - Keeps track of the scores of each player and opponent

Sounds (1 pt) - Plays immersive sounds when shooting, killing a player, shooting a wooden box, picking up the flag and scoring a point.

Hot seat multiplayer (1 pt) - Enables multiplayer

Hit points (1 pt) - Gives each tank a health of two, which means each tank can be shot twice before exploding.

Respawn protection (1 pt) - Makes the player unkillable for two seconds upon spawning and respawning

Additional winning conditions (3 pts) - Adds the challenge of additional winning conditions to the game. Choose between a time limit, scoring limit and round limit.

Fog of war (3 pts) - Adds the challenge of only seeing a small area around the player tank.

Explosions (2 pts) - Displays an immersive explosion animation when a tank or wooden box is destroyed.