

Tank Wars

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A fully featured top-down shooter with tanks

Overview

- Each player is provided a tank which can move through a maze and fire shells at other players/ bots.
- This has both single player and 2-player modes. The aim is to collect points by destroying bots / other players and at the same time avoiding enemy fire.
- 2-player mode is enabled using native Linux sockets and is peer to peer without the need of a central server.
- The maze is randomly generated using DFS initially and is shared to the other player.
- Collectibles spawn during the game which provide a timed power-up to the player upon collecting.
- For single player, the game ends when the player dies, while 2 player games have a time limit. The player that has the most points at the end wins.



Main Menu



On starting the game, we are provided with a screen with the following options -

- A. 1 Player
- B. 2 Player : Server
- C. 2 Player : Client
- D. Sound: On/Off

We can navigate the menu using arrow keys and press ENTER/RETURN to confirm.

On selecting 1 player we are taken to the game immediately, for the Server, we need to wait for the client to join, and for the Client, we are taken to a screen to enter the IP address of the Server to join.

Selecting Sound button will turn on/off the sound.

Play Screen

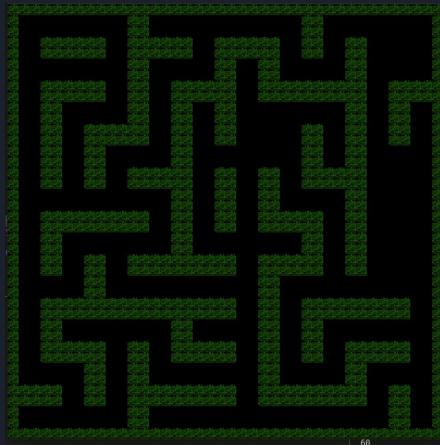
- Player controls his tank using controls in the maze.
- Player can see each tanks' remaining health on top of the body.
- Player can see his and his opponent's current scores in the sidebar.
- Player's current power-ups with the remaining time is also shown in the sidebar.
- In 2 player mode, players can see the remaining time till game overs on the sidebar.





Maze

- In each game a new random maze is generated using the DFS.





Controls

- W,A,S,D or ←↑→↓ keys for moving around the maze.
- Space / Left Click to fire.

Scoring

- Player gets points equal to the HP lost by the opponent.
- 50 extra points if the hit was final.
- If the opponent was the other player then on non-final hit player gets double points and on the final hit player gets 4 times the points.
- -1000 points for being destroyed. (in 2 player mode)



Health Points

- Each entity (Bot, Player) has some Health Points (HP) initially.
- HP decreases on being hit with bullets. A bullet with power ‘p’ will decrease the HP by ‘p’ units.
- Bots are destroyed immediately when their HP decreases below 0.
- In single player mode, the game ends when the player’s HP decreases below 0.
- For 2 player mode, the players respawn with HP restored, but 1000 points are deducted from their score.



Bot Behaviour

- Bots spawn randomly throughout the maze, till they reach the maximum number of bots allowed.
- When bots are destroyed, more bots spawn randomly to fill their place.
- The bots move at random initially, but on approaching a certain distance from any player, they start to actively follow the player to destroy them.
- Bots fire at regular intervals towards the direction of the players.



Power-Ups

Power Ups spawn as collectibles randomly throughout the game. Their effect lasts for a limited time which is shown in the sidebar. The following powerups may appear in the game.

- INVISIBILITY - Hide from your opponents AND bots. Bullets get invisible too.
- 2X-MULTIPLIER - Be awarded double points in all cases.
- SHIELD - Opponents' bullets do no damage.
- STRENGTH - Your bullets do twice the damage as usual.
- HP - Restores 1/4th of player's HP.



Exiting

- For single player games, the game exits after the player is destroyed (HP falls to 0), exit the game and are taken to the high score overlay, from there we can choose to exit the game, or go to the main menu.
- For 2 player games, the game exits when the timer hits 0.

Exit Screen

- After the game exits, players are taken to the score overlay, from there they can choose to exit the game, or go to the main menu.

Thank you!

