**TANK GAME**

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Game Overview

**Game Concept**

Tanks, is a multiplayer game developed for the Game Engine Development (IMAT 3905) module, the purpose of this module is to work together in a group of 5 and build from a previous Game Engine originally built by one team member whilst expanding on this game engine to make it more robust and to eventually build a game from it in 3D. the game is inspired by Tank wars, Wii Tanks, World of tanks. A round is designed to be played with different users as well as artificial intelligence consisting up to 4 players.

**Genre Target Audience**

Tanks is aimed towards everyone and anyone.

**Core Objectives**

The goal of the players is to defeat the artificial intelligent tanks as well as the other players on the multiplayer server whilst working on the clock that makes it harder as the level progresses, the level and AI will become more difficult and the game more intense.

**Gameplay Loop**

* Mouse & Keyboard Input (a and d left right circular motion 360).
* Controller (left joystick all movement) (rt to shoot) Tank mechanics.
* One or more teams up-to (4) and & AI can be with teams (if we want to do this).
* Tank trails Heuristic algorithms.
* Score system.
* High score system.
* Multiplayer / (one screen) not split screen.
* Rocket Launchers attachment for tank.
* 360 turrets for rocket.
* Point system 1 point per tank destruction.
* Rounds 1/5 best of 5 games.
* Sudden Death.
* Health system percentage based on 100% full health (HUD).
* Blaster Gun (unlimited ammo).
* Rocket Launcher Gun (MAX AMMO 2).

**Look & Feel**

The aesthetics of the game will be a mix of cartoon design with 2D tile maps and cartoon styled models in 3D also cartoon themed but using Cel shading to give it an ascetically pleasing look.

Gameplay & Mechanics

**Play Flow**

The game starts out as a choice to select 1 to 4 players depending if you’re playing single player (only against artificial tanks) or multiplayer with other real-world players fighting against each over, each player will start on the opposing side or on each of 4 corners as the map is top down-ish, the ammo is unlimited, once the game starts the player will have to destroy the other tank/s, 3 bullets will kill a singular tank with the blaster, however AI’s will be defeated with a singular bullet, 2 types of guns exist, the blaster and the rocket launcher, if hit by the rocket launcher it will be take out 75% of the other tank’s hit points, however the other gun will only knock out 33.33% (3 bullets) to kill a tank, to get the rocket launcher it will be automatically generated randomly on the map, the player will have to risk grabbing it before the other tank/s in a bid to be more powerful, one tank destroyed by the last percentile health will count only for the tank who finished them off, if they destroy one tank they will get 1 point, once all tank/s have been destroyed or once the timer runs out of 30 seconds, a high score of that round will be drawn on screen and added on to the total end score, if at the end of the game it is a tie breaker the players with the tie breaker will go face each over with rocket launchers on a sudden death round with no artificial intelligence, if in the case that it’s sudden death on single player the AI will have just as much health as the normal real-world player, at the end of the game the high score will be drawn out as a GUI, and it will tally each of the rounds to announce the winner.

**Rules**

1. Your team will consist of 1 to 4 players.
2. The rounds will be time based 30 seconds.
3. After each round a point will be assigned to a player
4. More AI will be generated after each round.
5. There will be 5 rounds.
6. Which ever player has the highest points in 5 rounds wins.
7. If it’s a draw, sudden death will begin.

Game Options

**Replaying & Saving**

The game will be able to be paused, however there will be no saving of previous events due to it being a multiplayer game, there will be a replaying option to reset events back to round 1 this will also be useful for debugging and testing purposes instead of re running the executable file.

**Audio**

This game will have global audio throughout the menus replaying a looping track as well as in-game music which changes, all buttons will have audio playing a 1 second effect so that the user is able to tell if the button has been pressed without having to double click.

**Resolutions**

A resolution tab before the game starts will be prompted for the user to choose minimized or Fullscreen, and possibly setting it to a custom resolution of the players choice.

Game World

**General look & Feel of the world**

The game world will appear to be a three-dimensional space but in reality, it consists of a series of 2D layers, one above the other. StarCraft, a war game, shows plateaus and lowlands, as well as aircraft that pass over obstacles and ground units. The player can place objects and move them horizontally within a layer with a fine degree of precision, but vertically an object must be in one plane or another; there is no in-between. Flying objects can't move up and down in the air, the models will be loaded in 3D and the map in 2D, however everything will be in a 3D space.

**Characters**

The characters will be 3D model tanks, each with a different body paint or texture, blue, green, yellow, and red. The tracks will all be a black or brown color. Each character represents a singular color, if the AI are in your team they will be represented by the same color, if the is against you they will have the same body as the opposing team.

Levels

**Levels**

1. Players will fight each over for 30 seconds and each player will get a friendly AI with them, to either help shoot or stand behind them as a defense mechanism, walls will be generated to also help the players defend themselves.
2. Players will fight each over for 30 seconds and each player will get two friendly AI’s with them, to either help shoot or stand behind them as a defense mechanism. Walls will be generated to also help the players defend themselves.
3. Players will fight each over for 30 seconds and each player will get 3 friendly AI’s with them, to either help shoot or stand behind them as a defense mechanism, slightly less walls will be generated, TNT (explosive barrels) will be randomly generated on the map as well as the Rocket launchers will start appearing.
4. Players will fight each over for 30 seconds and each player will get 4 friendly AI’s with them, to either help shoot or stand behind them as a defense mechanism, slightly less walls will be generated, TNT (explosive barrels) will be randomly generated on the map as well as the Rocket launchers.
5. Players will fight each over for 30 seconds and each player will get 5 friendly AI’s with them, to either help shoot or stand behind them as a defense mechanism, all walls will be gone to only rely on your team ai to defend you, TNT (explosive barrels) will be randomly generated on the map as well as the Rocket launchers.

Interface

**Visual System**

Main menu, Settings: Keeping with the cartoon styled theme of the game, enticing colors, big and bold buttons easily accessible, simplistic big font with title, no real art required perhaps a tank next to the title.



Game: Combining 2D tiled cartoons, able to be visually configured with the level editor



Health Hub: a health bar or heart styled HUD that just goes down as a chunk rather than showing a specific number, avoiding generating strings and words to keep to a simplistic and fun theme without complications, perhaps displaying opponent’s health with a color outline to represent each opponent (to be discussed further on).

