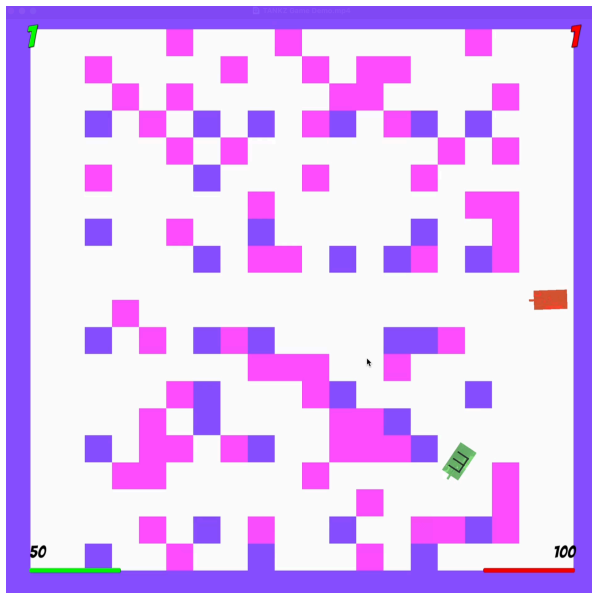




Blog #6 - Show Off and Conclusion

After several weeks of development, testing, iteration, and bug fixing, we're excited to present the final version of **TANKZ**, our GMD1 course game project! TANKZ is now fully playable on the VIA Arcade machine, supporting **local 1v1 battles using the arcade joysticks**, featuring dynamic maps, multiple turret power-ups, and a very fun time.

Watch the game demo video here
<https://youtu.be/hPlmrK4VXQ0>



<https://youtu.be/hPlmrK4VXQ0>

Game Overview

TANKZ is a fast-paced 1v1 top-down tank game with 3D visuals and orthographic gameplay. Inspired by classics like **AZ Tanks**, it captures the essence of simple

but skillful tank duels. Players spawn into randomly generated maze-like arenas, battle to the death, and collect power-ups that temporarily change their turret type and strategy.

Each round is short and intense. Once a player is destroyed, the round resets, scores are updated, and the tanks are repositioned. With solid controller support, VFX explosions, and a focus on fluid gameplay, TANKZ brings the arcade experience to life.

Final Features Implemented

- **Full controller support** using Unity's new Input System for both movement and firing
- **Dynamic maze-like maps** with destructible walls and fair spawn points
- **Power-up system** with explosive, sniper, and rapid-fire turret upgrades
- **Round management system** with score tracking and clean resets
- **Explosion VFX and particle effects** with performance-friendly instancing
- **Projectile pooling system** to optimize runtime performance
- **Bullet bounce mechanics**, with improved collision to handle wall edges and prevent bugs
- **Built-in cleanup**: projectiles and effects are cleaned up between rounds to ensure fairness and avoid leftover bugs
- **UI elements** for score display and round wins, fully functional in the build

Challenges Overcome

One of the biggest hurdles was getting **precise projectile physics**, including bounce behavior on maze walls. Initially, bullets would slide or glitch around corners. This was resolved with a combination of improved collision layers, normal-based reflection logic, and safety checks for repeated collisions.

Another challenge was integrating **Unity's new Input System** for multiple controllers while also making the game work in the Unity Editor for debugging. Ensuring compatibility with the arcade machine's custom hardware took a lot of testing and refining of mappings.

Additionally, we encountered issues with power-ups not despawning and explosive effects lingering or triggering incorrectly. These were fixed by improving round reset logic and enforcing clear ownership over collected power-ups.

Conclusion & Reflection

We're proud of what we've built. TANKZ is now a stable, fun, and visually polished 1v1 arcade game. It meets the project requirements:

- Runs on the VIA Arcade machine within the required specs
- Supports two-player joystick input
- Stays under the 500MB build size
- Delivered with a public GitHub repository, video demo, and documentation

This project has taught us the full cycle of game development — from design, prototyping, and implementation to polishing and deployment. Most importantly, it's shown us how small bugs can lead to large issues if not carefully traced and resolved. Throughout the project, we've collaborated, learned, and grown as developers.

TANKZ is not just a game—it's a milestone. And it won't stop here. After GMD1, we plan to keep building it out with new game modes, maps, and online play.

Thanks for following along with our dev journey.

See you in the arena!

– The TANKZ Dev Team