DEVBLOG – 06/11/2025

Weapon Interaction and System Stability Improvements

This week our focus was on refining the weapon interaction pipeline and ensuring that the magazine insertion system behaved consistently under real VR conditions. We expanded the collider-based interaction logic, ensuring that the gun detects the magazine's physical presence with improved precision. To achieve this, we refined collider shapes, tested multiple insertion angles, and implemented velocity dampening to prevent unwanted jitter. Through repeated testing cycles, we documented errors where the magazine rotated unexpectedly or gained excessive force when entering the chamber. After isolating the issue to the XR Grab Interactable's throw-on-release functionality, we disabled unneeded physics calculations, which resulted in a stable and realistic insertion process.

Improved Model Alignment and Handling

The imported gun model initially had a misaligned forward direction, which caused visual inconsistencies when aiming. We debugged this by using visual debug rays, comparing projectile trajectories with expected aim vectors. After adjusting the local transforms and unifying coordinate alignment across all child components, the gun now points correctly in world space, allowing for accurate projectile travel.

Experimental Time Manipulation Prototype

We explored an experimental time-warping mechanic inspired by the pacing of "Superhot." Our implementation modified the global time scale dynamically based on XR body movement. Although the system functioned properly within Unity's time management constraints, user testing revealed that the mechanic conflicted with the intended horror experience. By slowing time during minimal movement, players gained too much control over pacing, reducing tension dramatically. We documented the technical findings and moved the feature out of the core gameplay to maintain atmosphere.

With these improvements, the weapon system is now more reliable and gives us a stronger foundation for future enemy and combat features.