VEXOR PROXIES

Genre: Fast Pace Arcade Shooter
Platform: PC
Team 8 Members: Aditi Kelwalkar, Enci Zheng, Jack Parent, Luna Stephenson, Samantha Thompson, Somesh H. Gopi Krishna.

Two Sentence Pitch
In the dark and dangerous underworld, only Bunny can get the job done fast. Navigate through a series of intense arcade FPS levels—shoot, dodge, and survive against overwhelming odds.

Two Minute Pitch
Vexor Proxies is a fast-paced arcade shooter set in a retro-futuristic world where the player takes on the role of Bunny, a skilled and agile mercenary. The game emphasizes quick reflexes and tactical combat, requiring players to eliminate enemies swiftly while avoiding a single hit. Seamlessly blended cutscenes keep the adrenaline pumping, as every move and shot affects the unfolding story. With a mix of stealth mechanics, explosive action, and escalating difficulty, players must master each environment, taking advantage of both enemy behavior and strategically designed levels to progress. Inspired by classics like Hotline Miami and Super Hot, Vexor Proxies challenges players to think fast, act faster, and aim true.

VEXOR PROXIES

Version 1.0
Date: 10/23/2024

Designed by
TEAM 8
Carrot Trail Studios

TABLE OF CONTENTS:

1. GAME OVERVIEW

In a corrupt underworld there is only one person to send. Bunny, our only source for getting it done fast. Take her through each level of an arcade FPS game; SHOOT, DODGE and SURVIVE!

- **TARGET AUDIENCE:**
  Players who enjoy difficult action shooters where quick thinking is rewarded. Like “Hotline Miami”, “Super Hot”, or “Ultra Kill.”

- **USP:**
  Actions in the game are seamless and so are cutscenes which means you have control of your character while they are occurring. In game action that will fire your brain up and think of new ways to possibly maneuver and complete the level.

2. GAMEPLAY MECHANICS

- **GAMEPLAY LOOP:**
  This game is a fast-paced shooter with high risks and rewards. The player’s objective is to defeat all the enemies in the level and proceed to the next stage without taking a single hit from an enemy bullet. Players are initially equipped with a knife and an uzi with 32 rounds, and defeating enemies will allow the player to pick up their weapons and ammunition. There will be three stages in total, with the final stage having the player confront a mob boss.

- **CONTROLS:**

Game Mechanic	**Controls**
Movement	WASD
Shooting	Left Click
Knife Kill	Left Click (once in backstabbing range)
Swapping Weapons	Scroll Wheel
Loot Pick-Up	Walk over the dropped item

- **SCORING SYSTEM:**
  During each level, the player gets points for killing enemies. More points are awarded for silent or stealth kills and rapid kills in succession. Certain high scores will unlock modifiers for that level. Modifiers would be challenge modes for the level, such as infinite mode or armored enemies only.

- **WEAPONS:**
  The player's default weapons are a knife and a fully loaded uzi. The player will also have the opportunity to wield a shotgun and a silenced pistol, which can be picked up as loot from enemy kills. The guns utilize a hit scan system that uses a raycast from the center of the screen to do damage to enemies. The bullets from these guns are purely for visual effect.

Weapon Type	**Fire Rate**	**Range**	**Abilities**
Knife	N/A	Melee	Backstabbing attacks
Uzi	High	Medium	Hold both out to sides of the body and fire.
Shotgun	Low	Close	Spread shot, high damage
Rifle	Low	Long	
Pistols	Medium	Long	Silent shots that will not alert nearby enemies, allowing for stealth kills

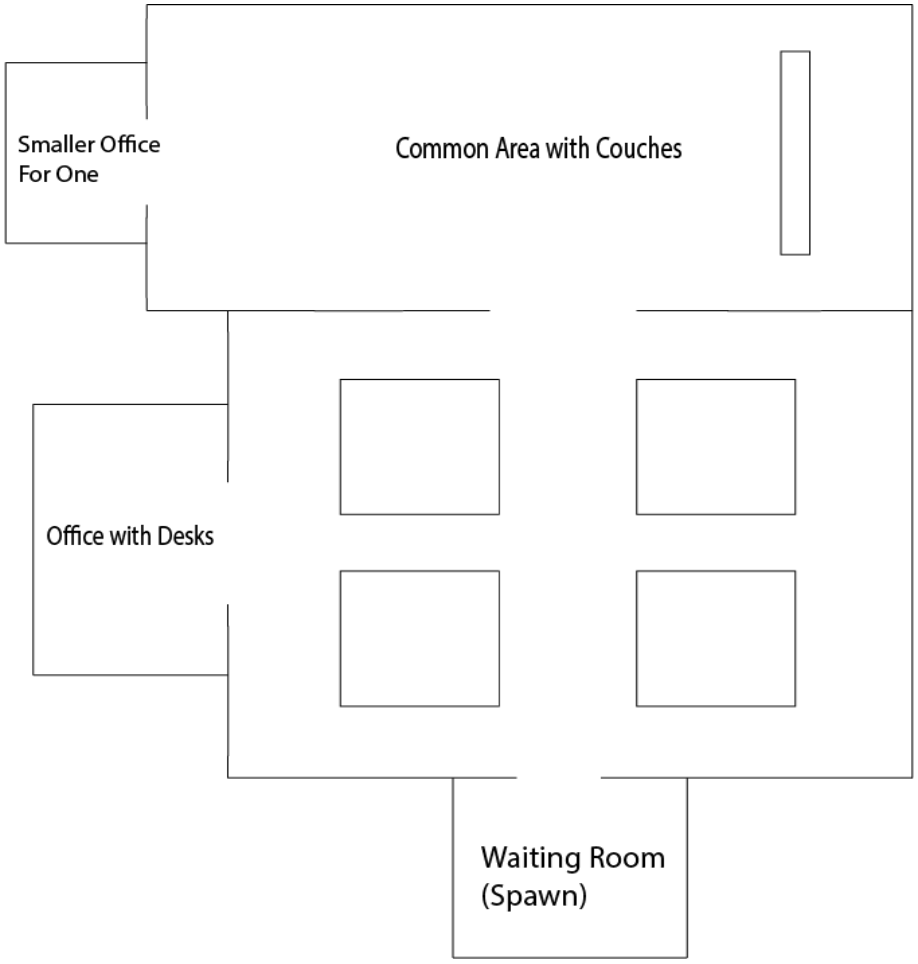
- **ENEMY AI:**
  This game will include 2 types of enemies: a normal enemy and an armored enemy.
  Normal Enemy:
  Idle: Normal enemies will patrol between set nodes. Their line of sight is at an angle of 150 degrees, facing forward in the direction of their heads, and their hearing picks up on player footsteps or gunshots nearby.
  Chasing/Shooting: Once the player is within the enemy's line of sight or hearing range, the enemy will permanently start chasing the player. The enemies will chase the player until they are within shooting distance of the player and have an unobstructed line of sight to the player. At that point, the enemies will start

shooting. Their guns rapidly fire bullets in a spread, and if a single enemy bullet hits the player, the player dies and must restart the level.
Health: Normal enemies die instantly from a single successful shot or knife attack from the player. These enemies can also be killed because of friendly fire from other enemies (these kills will not increase the player's score).
Drops upon Death:
SMGS: MP5, Tommy Gun, UMP45.
Pistols: M9, G21, AUTOMAG III, G40 Suppressed (Our suppressed pistol).
Shotguns: KS-23, KSG-12.
Rifles: AKM, TAR-21, M16A4.

Armored Enemy:
Idle: Armored enemies will have the same idle behavior as normal enemies; however, they will be much slower.
Chasing/Shooting: Once the player is within the enemy's line of sight or hearing range, the armored enemy will start chasing the player. This enemy will move towards the player and start shooting once the player is within its shooting range and line of sight. If the enemy loses a direct line of sight to the player, it will stop chasing them and move towards their last known location. If the player is still not in their line of sight, they will move back to patrolling. If the player comes back into their line of vision, the enemy will start chasing or shooting the player, depending on the distance. The armored enemy's bullets can kill normal enemies, but cannot take damage from enemy bullets.
Health: Armored enemies will not take any damage if attacked from the front. To defeat these enemies, the player must sneak up behind them and attack their unprotected backs. These enemies will die in one hit from a successful sneak attack.
Drops upon Death:
Special Weapons: MATEBA Revolver, ZC-1050, RN-50.

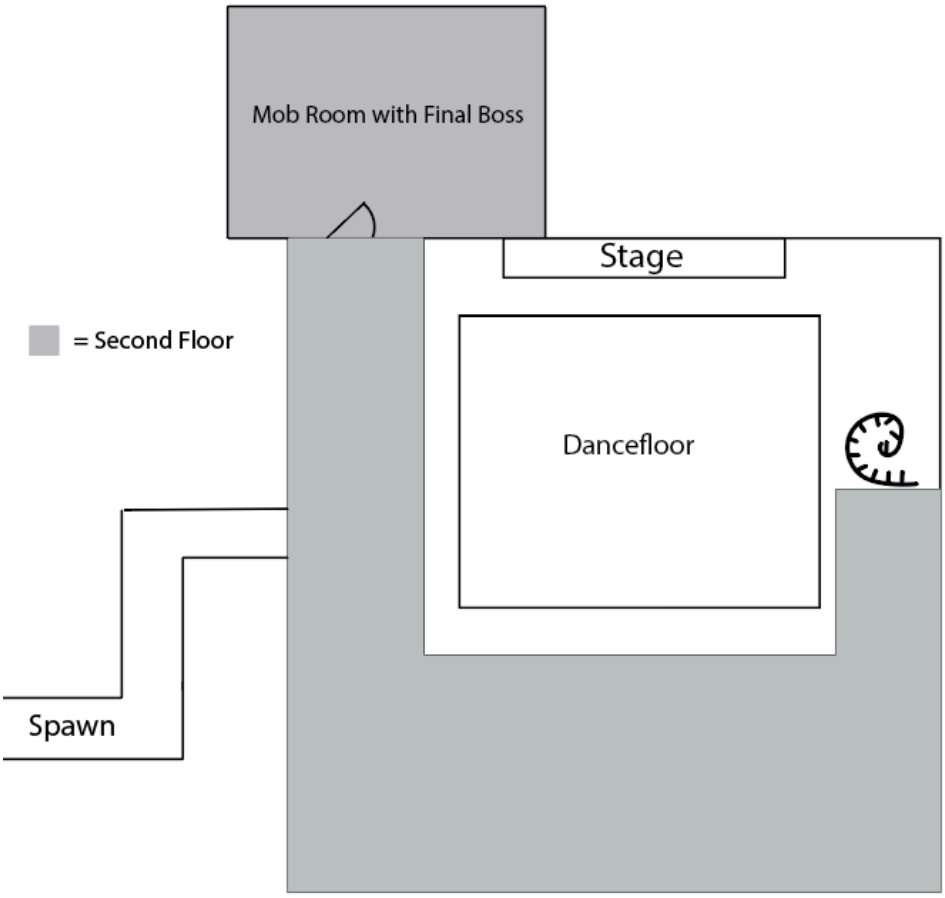
3. ENVIRONMENT DESIGN

- **LEVEL DESIGN:**
  There will be 3 levels. There will be multiple areas with the level design or props that allow for flanking opportunities:
  1. Level 1 - The first level is an office building where you start in a waiting room. The player will have to navigate through a grid-like area at the start with an office room to the side and some other rooms where enemies will be patrolling.



2. Level 2 - This will be set in a trashy, local bar.

3. Level 3 - Set in a nightclub with lots of neon lighting. The player will have to fend off enemies while navigating to the second floor, across a balcony, and into the main boss room where the final boss will be waiting.



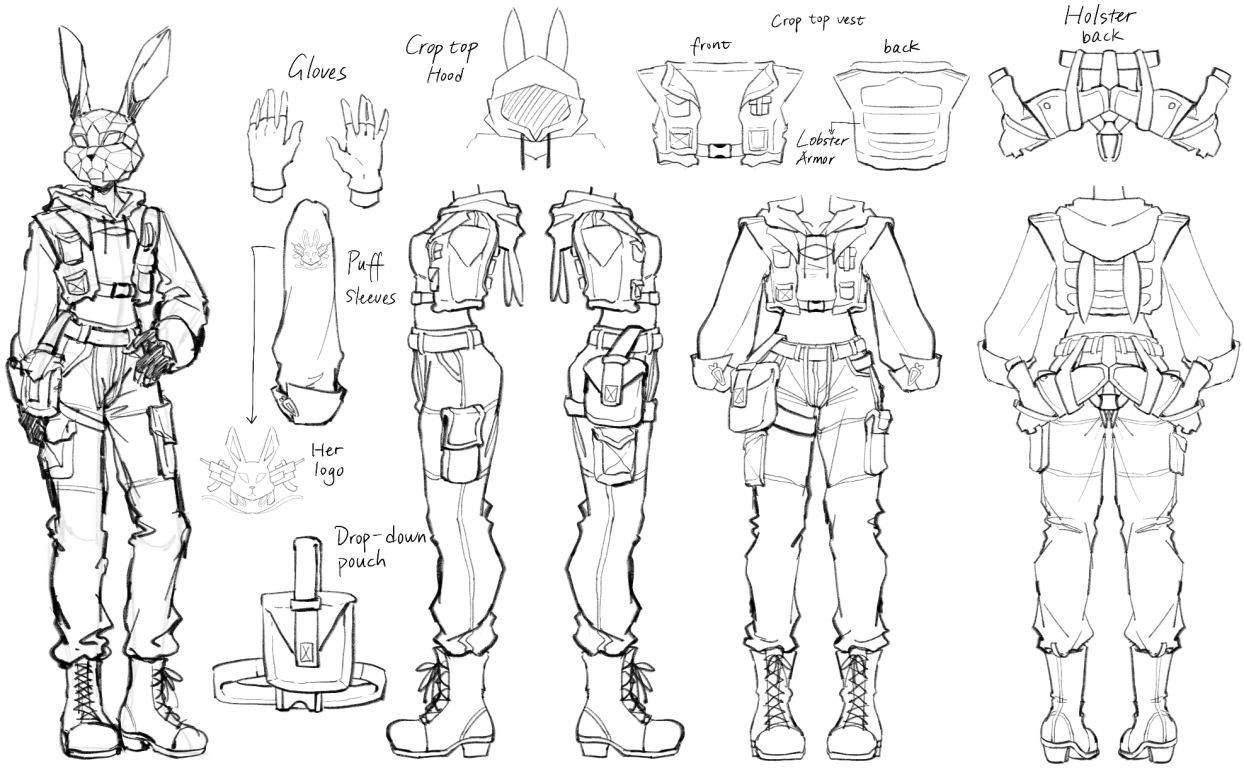
- **ENVIRONMENT:**
  Each level will have increasing neon elements in it, with the final one very lit up with neon lights and loud music. The second and third levels will have a brick & neon aesthetic, where the buildings seem to be made of very old brick.

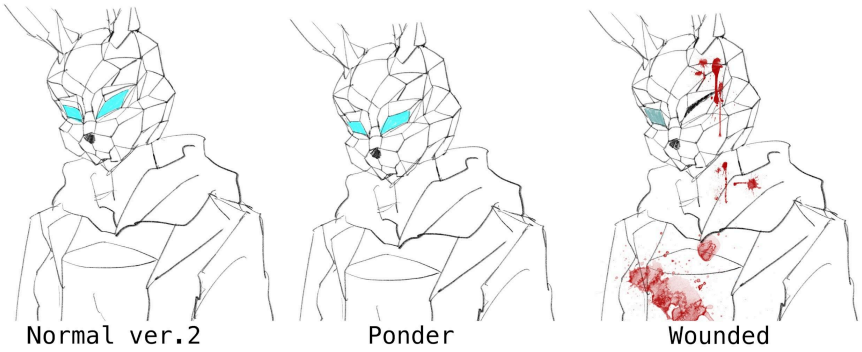
4. ART DIRECTION

- **ART STYLE:**
  Art style of the game will be retro graphics (low poly) with bright/gloomy colors for the specific level. The style of our game will be futuristic retro with sharp edges but still old time feel to it. The areas you'll be going to still use brick buildings and wooden floors but have futuristic props in them. Graphics as said before won't be realistic but more arcadey and low poly making some areas look simple in design.

- **CHARACTER DESIGNS:**
    - **MAIN CHARACTER:**
        - The main character is made to look small and agile. Always shorter than her enemies but with this comes her strengths. That being agility, endurance, and dexterity. She might die in one shot but since she is a fast moving character that does not need a run button as she can quickly move to cover. Her design also portrays this with her wearing slick clothing, light boots, and having everything strapped and close to her body making movement easier for her. She comes with a pair of akimbo uzis. Her mask is a rabbit mask making it known to her enemies that she is quick on her feet.

Rabbit Mask





- **MOBSTERS:**
  - The mobsters are taller and bulkier characters portraying themselves are tough, hardened gangsters with an ego. They tower over our main character and are slower moving than her. They wear a black gray suit with a black gray undervest and red dress shirt underneath that vest. Some of them will have light body armor underneath their suit jackets. Heavy mobsters throw their suit jackets and vests away and keep their dress shirts on. Wearing heavy front paneled armor that only protects the front of their body. Their suit pants and arms also have panel armor strapped to them. Making their backside completely open due to them still needing to walk around.
  - In the future we might have more enemy designs like other gangs but for now we are looking at the mobsters.

5. PROJECT TIMELINE

Our game development project follows a structured timeline, utilizing GitHub for version control and collaboration, and Taiga for managing tasks and kanban views. Below is a detailed breakdown of our progress and upcoming milestones.

Initial Development Phase (October 2 - October 12)

- Project Kickoff (October 2, 2024): We initiated the project three weeks ago, focusing on foundational work:
    - Core mechanics were established, along with early design concepts and wireframes.
    - Development environment was set up, and the project repository was initialized on GitHub.
    - Tasks were organized using Taiga, outlining key phases and objectives for the project.

Version 1 (v1) Build — Released (October 13, 2024)

- v1 Build Release (October 13, 2024): We completed our first playable version, which included:
    - Basic gameplay mechanics were integrated.
    - Key character models and animations were implemented.
    - Initial level design and a basic user interface (UI) were introduced.
    - Feedback was gathered internally, leading to our first round of bug fixes and iterations.

Ongoing Development (October 14 - November 14)

- This phase is dedicated to iterative development and feature implementation:
    - Refining gameplay mechanics based on internal feedback.
    - Expanding levels and enhancing the visual aesthetics.
    - Implementing additional features like advanced AI behavior and multiplayer mechanics.
    - Using GitHub's project board to track development progress, and Taiga for sprint management and task prioritization.

Project Milestones

- **October 30, 2024:** Second internal playtest scheduled to review the current build's progress.

- **November 15, 2024:** Feature-complete milestone. All primary features must be implemented by this date.
- **November 22, 2024:** Begin polishing phase—dedicated to tuning gameplay, bug fixing, and performance optimization.
- **November 28, 2024:** Start of Beta Testing Phase with a focus on gathering feedback from selected testers.

Final Development & Release

6. **Target Completion Date: December 3, 2024**
    a. The final build will be completed by December 3, marking the conclusion of active development.
    b. Focus will shift to final quality assurance (QA) checks, finalizing documentation, and preparing for the public release.

7. TEAM BIO - Carrot Trail Studios

Our Studio Philosophy

“Crafting Worlds with Passion, Precision, and Play.”

At Carrot Trail Studios, we believe that every game tells a story, and every story deserves to be told with heart. Our small but passionate team collaborates across disciplines to create unique, immersive experiences for players everywhere.

Meet the Team Behind Carrot Trail Studios:

Aditi Kelwalkar - Programmer

- **Bio**: Aditi is the architect of Carrot Trail Studios' codebase. She focuses on gameplay mechanics, AI development, and overall system optimization, ensuring players have a smooth and immersive experience.
- **Additional Role**: *Technical Lead* — Aditi also oversees integration between mechanics, ensuring our game performs at its best.
- **Fun Fact**: Loves challenging puzzle games and platformers and often uses them as inspiration for innovative coding solutions.
- **Favorite Game**: *Super Mario Galaxy*

Enci Zheng - Concept & Environment Artist

- **Bio**: Enci is the creative force behind the environments and visuals at Carrot Trail Studios. She designs immersive landscapes and atmospheric game worlds, crafting a unique visual style for each project.
- **Additional Role**: *VFX Artist & 2D artist* — Enci creates the iconic character designs, magical effects, environmental elements, and other visual details to enhance player immersion.
- **Fun Fact**: An all- nighter who puts her thoughts and ideas together at midnight to help her organize everything she sees, hears, feels as a part of her aesthetic.
- **Favorite Game**: *Hifi-Rush*

Jack Parent - Game Designer

- **Bio**: Jack is the visionary behind the game mechanics and level design at Carrot Trail Studios. He crafts engaging gameplay loops and intuitive levels that challenge and delight players.
- **Additional Role**: *Narrative Designer* — Jack also writes the stories, dialogue, and lore, seamlessly integrating narrative elements into gameplay.
- **Fun Fact**: Has a bunny named bun bun
- **Favorite Game**: *Team Fortress*

Luna Stephenson - Programmer

- **Bio**: Luna specializes in scripting, and building systems that make characters and environments come to life.

- **Additional Role**: *Scripting Developer* —- Luna writes the scripts to bring gameplay concepts to life, allowing the game to feel more playable and satisfying.
- **Fun Fact**: Luna loves playing RPG games and DND, she also enjoys reading the occasional novel, manga, or watching anime.
- **Favorite Game**: *Fallout: New Vegas*

Samantha Thompson - 3D Modeler & Prop Artist

- **Bio**: Samantha brings the game's characters and environments to life through detailed 3D modeling. She creates a bit of everything from characters to intricate props, adding a tactile feel to the game world. She also adds animations to models to give them a more lively feel.
- **Additional Role**: *3D Aesthetic Lead* — Samantha works with our 2D artist to create unforgettable aesthetics in a 3D space. Finally, she also does some video editing to help bring the game together such as loading screens, logo animations, etc.
- **Fun Fact**: An avid enjoyer of breaking games; Finding bugs, mechanics to abuse, and scaling up places that are not intended to be ascended are sometimes more enjoyable than playing the game normally for her.
- **Favorite Game**: *Elden Ring*

Somesh H. Gopi Krishna - Game Designer, Programmer, UI/UX Designer

- **Bio**: Somesh is responsible for UI/UX design and programming, ensuring that players have a seamless and intuitive experience. He blends aesthetic appeal with functionality, designing user interfaces that are both beautiful and practical.
- **Additional Role**: *QA Lead* — Somesh also tests gameplay mechanics, identifies bugs, and ensures smooth, responsive performance across platforms.
- **Fun Fact**: An avid gamer who has mastered speedrunning classic platformers.
- **Favorite Game**: *Celeste*

Game Post-Mortem: *Vexor Proxies*

Carrot Trail Studios (Team 8) - Aditi | Enci | Jack | Luna | Sam | Somesh

What Went Right?

1. **Playable Demo Achieved**:
    - **Milestone Delivery**: The team successfully created a playable demo featuring core game mechanics, functional enemy types, and key levels.
2. **Gameplay Mechanics**:
    - **High-Intensity Combat**: The gameplay loop emphasized quick reflexes, precise aiming, and strategic movement.
    - **Refined Player Controls**: Movement and shooting mechanics were responsive, allowing players to quickly adapt to the game's high-risk, high-reward nature.
3. **Art and Visual Design**:
    - **Distinct Visual Identity**: The neon, retro-futuristic art style gave the game a unique look and feel. The combination of 2D and 3D assets, shaders, and lighting created an immersive atmosphere that matched the game's tone of being dark and gritty.
    - **Cohesive Aesthetic**: The team's ability to maintain a cohesive visual direction was driven by clear communication and collaboration between the artists and designers.
4. **Audio and Music**:
    - **Immersive Sound Design**: Audio design is a highlight of the project, thanks to Jack's composition and the team's attention to sound effects.
    - **Thematic Cohesion**: The retro-inspired soundtrack complemented the visual style, reinforcing the game's neon, arcade vibe.
5. **Team Collaboration**:
    - **Specialized Contributions**: Each member brought a unique skill set, from scripting and level design to art and sound. This diversity allowed the team to tackle different aspects of the project effectively.
    - **Positive Environment**: The varying specializations and high skill levels of the team members inspired each other to excel.

What Went Wrong / Problems Faced?

1. **Time Management Issues**:
    - **Underestimating Scope**: The initial project plan underestimated the time required for developing, testing, and polishing key features. As development progressed, it became clear that certain tasks — such as verticality introduction in the mansion (for it to have multiple floors).
    - **Crunch Periods**: The final weeks before the demo submission required long hours and intense effort. This crunch led to fatigue, which sometimes resulted in lower productivity and minor errors that required additional debugging.
2. **AI Complexity**:
    - **Erratic Enemy Behavior**: Developing AI that behaved predictably and provided a fair challenge proved difficult. Issues such as enemies getting stuck on obstacles, failing to detect the player, or responding too quickly created frustration and required extensive debugging.
    - **Balancing Difficulty**: Finding the right balance between challenging and achievable AI behavior was a constant struggle. Early iterations were either too punishing or too lenient, undermining the intended gameplay experience.
3. **Level Design Iterations**:
    - **Environmental Design Conflicts**: The retro-futuristic aesthetic sometimes conflicted with gameplay needs. Ensuring the environments supported both the visual theme and strategic gameplay required constant revisions.
    - **Late-Stage Revisions**: Playtesting feedback often revealed major issues with level layouts late in development. Implementing these changes under time pressure led to rushed adjustments and increased the risk of new bugs.
4. **Bugs and Optimization**:
    - **Weapon Glitches**: Persistent issues with weapon mechanics, such as shooting delays, incorrect ammo counts, and weapon-swapping errors, disrupted gameplay.
    - **UI Transition Problems**: Transitions between screens (loading, death, pause) often caused unexpected glitches, such as UI elements failing to load or sound effects looping incorrectly. Debugging these issues took more time than planned.

How Did We Overcome Those Problems?

1. **Prioritization and Focus**:
    - **Core Features First**: To avoid falling further behind schedule, the team made the tough but necessary decision to prioritize core mechanics, such as AI behaviors, shooting systems, and level design.
2. **Iterative Playtesting**:
    - **Frequent Internal Testing**: We held regular playtesting sessions throughout development to catch issues early. This iterative approach helped refine combat mechanics, level pacing, and AI behaviors. For example, when testers found the mansion level too confusing, the layout was revised to improve player flow and navigation.
    - **Targeted Testing Phases**: Specific aspects of the game, such as AI behavior, weapon handling, and transitions, were isolated and tested independently. This allowed the team to focus on resolving issues in one area without being distracted by unrelated problems.
3. **Collaboration and Delegation**:
    - **Leveraging Specializations**: Each team member's unique skills and strengths were fully utilized to tackle different aspects of the project. For example, while Aditi and Luna focused on refining Purgewatch AI and gameplay mechanics, Sam and Somesh concentrated on creating visual assets and level design for the mansion. This division of labor ensured tasks were completed efficiently.
    - **Regular Team Meetings**: Open communication on our discord server kept everyone aligned and allowed for rapid problem-solving when issues arose.
    - **Mutual Support and Motivation**: The positive team dynamic helped maintain morale during stressful periods. Team members frequently supported and inspired each other, which was crucial for overcoming challenges. This sense of camaraderie kept the team motivated even during crunch periods.
4. **Debugging and Optimization**:
    - **Systematic Debugging**: The team adopted a systematic approach to debugging, tackling one major issue at a time. By isolating and resolving problems related to weapon mechanics, screen transitions, and performance, the team was able to make steady progress.
    - **Final Polish Phase**: The last phase of development was dedicated exclusively to bug fixing, performance optimization, and polishing the user experience. This focused effort ensured that the demo was as stable and smooth as possible.

What Did We Learn?

1. **Importance of Early Planning**:
    - **Identifying Dependencies Early**: Recognizing which tasks rely on others was crucial. The team discovered that early identification of dependencies helps prevent delays caused by overlapping or unfinished tasks.
2. **Flexibility is Key**:
    - **Adapting to Change**: The team learned to remain flexible, making strategic changes to scope and focus as challenges emerged.
    - **Balancing Creativity and Constraints**: The team learned to prioritize creative ideas that could realistically be implemented within the project timeline, without sacrificing the core vision.
3. **Balancing Scope and Quality**:
    - **Setting Realistic Expectations**: Learning to set achievable goals based on the team's capacity and timeline was essential. This experience taught the team how to evaluate their strengths and limitations more accurately, ensuring future projects are scoped appropriately.
4. **Effective Communication Drives Success**:
    - **Clear Role Definitions**: Clearly defined roles and responsibilities helped streamline the development process.
    - **Regular Check-Ins**: Consistent communication through regular meetings and updates kept the team aligned.
    - **Constructive Feedback**: A positive communication culture ensured that suggestions were taken in stride and led to meaningful improvements throughout the project.

Conclusion

We came together to make a game for an assignment, but we leave here as **Carrot Trail Studios** — a collective of passionate developers ready to craft amazing games now and in the future. The journey of creating *Vexor Proxies* has shown us what we're capable of when we collaborate, inspire each other, and pursue our vision with determination. This is just the beginning, and we're excited to see where our creativity, skill, and teamwork will take us next.