## Implemented UX Improvements

### 1. Hostage Pickup and Extraction Mechanic

• The player can now pick up and carry a hostage to the extraction zone using the **E key**.

• The extraction zone is visually marked using texture materials to enhance visibility and goal recognition.

• **UX Justification:** This mechanic aligns with **cognitive load reduction**, ensuring clear objectives and intuitive control mapping.

### 2. Compass in HUD for Directional Intuition

• A **compass UI element** has been added to the HUD to help players navigate toward the extraction zone.

• **UX Justification:** Supports **spatial awareness and directionality**, reducing frustration and improving engagement.

### 3. Enemy AI: Zombie Behavior

• Zombies will follow the player when within range and return to their initial position when out of range.

• Added zombie **health and damage mechanics**, where they take damage upon being shot.

• **UX Justification:** Improves **enemy predictability** while maintaining dynamic challenges.

### 4. Crosshair and HUD Elements

• Added a **crosshair** to assist in aiming.

• Instructional notes display key bindings:

• **E**: Pick up hostage

• **WASD**: Move

• **Space**: Jump

• **LMB**: Shoot

• **UX Justification:** Increases **player clarity** and reduces guesswork in interaction.

## 5. Environmental Enhancements

• Added **grass-like texture material** to improve immersion.

• Extraction zone is visually distinct to ensure clear player guidance.

• **UX Justification: Aesthetic usability effect**, improving player satisfaction.

## 6. Win Condition Implementation

• The game ends successfully when the player reaches the extraction zone with the hostage.

• **UX Justification:** Establishes a **clear game loop**, preventing confusion on objective completion.

### Blueprint Node Locations & Comment Labels

The original Blueprint node segments are located in:

• **BP_FirstPersonCharacter0**

• Player Health and HUD

• Hostage Pickup

• **BP_Zombie / BP_Zombie2**

• Follow Player and Back to Home

• Zombie Damage and Death

• **DecalActor / DecalActor2**

- Extraction zone visual indicators

- **FetalPrisoner_Blueprint**

- Hostage

  - **SM_Cube4_Blueprint**
  - Win condition

Each Blueprint section contains **comment block labels** for clarity.

**References**

- **FAB Resources** for AI and player interaction implementation

- **Epic Games Blueprint Tutorials** for UI and game mechanics

## UX justification:

**UX Justification of Game Improvements**

The improvements made to the game focus on **clarity, cognitive ease, motivation, and emotional engagement**, aligning with **Hodent's UX framework**. These changes enhance **player guidance, immersion, and engagement** while reducing cognitive friction.

**1. Hostage Pickup and Extraction – Clarity & Cognitive Load Reduction**

**(Pillars: Perception, Cognition)**

The **hostage pickup and extraction mechanic** provides a clear **goal-oriented task**, improving **player engagement**. Marking the **extraction zone with distinct textures** ensures that players easily **recognize their objective** without unnecessary cognitive strain.

The **HUD displays keybind instructions (E to pick up, WASD to move, LMB to shoot)**, reducing reliance on memory. Hodent's framework emphasizes that UX should

minimize **working memory load**, allowing players to focus on gameplay instead of **recalling controls**.

## 2. Compass HUD – Spatial Awareness & Directional Intuition

**(Pillars: Perception, Cognition)**

The **compass on the HUD** provides continuous **directional feedback**, preventing **disorientation**. Hodent emphasizes that players rely on **intuitive spatial cues** rather than abstract navigation. This aligns with **mental models of real-world navigation**, reducing cognitive fatigue and enhancing **flow**.

## 3. Enemy AI (Zombie Behavior) – Predictability & Challenge

**(Pillars: Cognition, Motivation, Emotion)**

Zombies now exhibit **range-based pursuit** behavior, following the player when within range and returning to their initial position when out of range. This predictable behavior enhances **strategic play**, as players quickly **learn and adapt** based on enemy proximity.

This mechanic **maintains engagement** by striking a balance between **challenge and fairness**, reinforcing **intrinsic motivation** through a **clear risk-reward system**. Players feel a **sense of accomplishment** when escaping or strategically avoiding zombies.

## 4. Crosshair & HUD Elements – Player Guidance & Reduced Cognitive Overload

**(Pillars: Perception, Cognition)**

Adding a **crosshair** improves **aiming feedback**, reducing uncertainty and frustration. Hodent emphasizes that UX should provide **instant, clear feedback** to minimize ambiguity in interactions.

Keybind instructions further **reduce cognitive effort**, allowing players to **learn through exposure** rather than trial and error. This supports **seamless onboarding**, preventing frustration from unclear controls.

## 5. Environmental Enhancements – Visual Cues & Immersion

**(Pillars: Perception, Emotion)**

The **grass-like ground texture** and **extraction zone markers** enhance **spatial clarity and immersion**. According to Hodent, **aesthetic usability** improves player **engagement and perceived usability**, making key locations more **instinctively recognizable**.

## 6. Win Condition – Clear Progression & Satisfaction

**(Pillars: Motivation, Emotion)**

Reaching the **extraction zone with the hostage** triggers a **win condition**, reinforcing **goal clarity and motivation**. Without a clear **completion state**, players may feel lost or unmotivated. This structured objective enhances **player satisfaction and emotional engagement**.

**References:**

1. https://www.youtube.com/watch?v=7UuFRs2TBI0
2. https://forums.unrealengine.com/t/tutorial-blueprint-compass-16-direction/27753
3. https://www.youtube.com/watch?v=NZK5V24U1zk

Screenshots and references of code in project: