Beta Test Plan

1. Core Functionalities for Beta Version

Below are the essential features that must be available for beta testing, along with any changes made since the initial Tech3 Action Plan.

Feature Name	Description	Priority (High/Medium/Low)	Changes Since Tech3
In-Game Animation System	Implement animations (walk, run, jump, strafes, climbing, combat animations) for enemies, NPCs, and player characters	High	Added strafes and climbing; refined animations for better immersion
Realistic Game Physics	Ensure realistic collisions, gravity, and physics-based interactions with the environment	High	Improved collision detection
Advanced AI Management (Bot)	Implement complex bot logic, including pathfinding and LLM-based NPC dialogues	High	Integrated LLM for dynamic NPC dialogue; change used LLM: Llama 3 8b -> Hermès 3 8b
Multiplayer	Enable multiple players to connect and interact in the same game environment	Medium	Introduced a basic lobby system; established initial netcode
Quest Creation with LLM	Use an LLM to dynamically generate quest lines and objectives	Medium	Added quest triggers; refined LLM prompts for better storyline coherence

Horror Atmosphere	Incorporate horror-themed lighting, sound effects, and environmental cues	Low	Improved lighting system; introduced new horror assets and ambient audio
Environment Interactions	Allow interactions with consumables, NPCs and items in the inventory	High	Expanded interactive object set; added inventory UI for clarity
Combat System	Create comprehensive combat mechanics, including weapons, combos, and mana usage	High	Implemented a combo system; integrate taking damages
Consumables	Add various potion types (heal, poison, stamina regen) with distinct effects	Medium	Balanced item effects; improved potion-effect triggers
LLM Server	Deploy a dedicated LLM server to optimize game development performance and AI logic	Medium	Set up server infrastructure; improved dev workflow with faster AI training and testing + trying to set it locally

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2. Beta Testing Scenarios

2.1 User Roles

The following roles will be involved in beta testing.

Role Name	Description
Listen Server	Host the game
Client	Connected to the host

2.2 Test Scenarios

Scenario 1: In-Game Animation System

- **Role Involved:** Both
- **Objective:** Be able to walk, run, jump, strafe, climb, enemies' combat animations, NPCs, and player characters.
- **Preconditions:** Have a graphic card. Create or join a game successfully.
- **Test Steps:**
    1. Start a game.
    2. Move around (walk, run, jump, strafe, climb).
    3. Attack someone (not your friend), with and without combo, see enemies reaction.
- **Expected Outcome:** Be able to walk, run, jump, strafes, climbing, enemies' combat animations. Have NPCs, enemies reactions (attack or dying).

Scenario 2: Realistic Game Physics

- **Role Involved:** Both
- **Objective:** Ensure realistic collisions, gravity, and physics-based interactions with the environment (body movement take falling damages).
- **Preconditions:** Have a graphic card. Create or join a game successfully.
- **Test Steps:**
    1. Start a game.
    2. Jump.
    3. Move in front of solid entities.
    4. Fall from high point.
- **Expected Outcome:** Have falling and realistic animations, be blocked by solid entities.

Scenario 3: Advanced AI Management (Bot)

- **Role Involved:** Both
- **Objective:** Have complex bot logic, including pathfinding and LLM-based NPC dialogues.
- **Preconditions:** Have a graphic card. Create or join a game successfully.
- **Test Steps:**
    1. Start a game.
    2. Interact with an NPC.
    3. Attack an NPC.
    4. Run away.
- **Expected Outcome:** See NPC dialogues, see NPC chasing me.

Scenario 4: Multiplayer

- **Role Involved:** Both
- **Objective:** Connect and interact in the same game environment.
- **Preconditions:** Have a graphic card, be 2 players or more.
- **Test Steps:**
    1. Listen Server: Host a game.
    2. Client: Join Listen Server game.
    3. Move around, and attack + interact with the environment (take items, speak with NPCs...).

- **Expected Outcome:** Can see each other, that means see your mates moving and interacting well.

Scenario 5: Quest Creation with LLM

- **Role Involved:** Both
- **Objective:** Use an LLM to dynamically generate quest lines and objectives.
- **Preconditions:** Have a graphic card. Create or join a game successfully.
- **Test Steps:**
    1. Start a game.
    2. Interact with NPCs
    3. Kill an NPC who's linked to the dialogue's history.
    4. Talk again to another linked NPC.
- **Expected Outcome:** You can read the first NPC dialogue. The other dialogue changed because of your action.

Scenario 6: Horror Atmosphere

- **Role Involved:** Both
- **Objective:** Incorporate horror-themed lighting, sound effects, and environmental cues.
- **Preconditions:** Have a graphic card. Create or join a game successfully.
- **Test Steps:**
    1. Start a game.
    2. Move around
- **Expected Outcome:** You can see horrific environment/ambience (no sunny, night with fog, sound design, horrific assets)

Scenario 7: Environment Interactions

- **Role Involved:** Both
- **Objective:** Allow interactions with consumables, NPCs and items in the inventory.
- **Preconditions:** Have a graphic card. Create or join a game successfully.
- **Test Steps:**
    1. Start a game.
    2. Talk to an NPC.
    3. Take a consumable, for example a poison potion and a healing potion.
    4. Use poison potion.
    5. Use healing potion.
- **Expected Outcome:** You should see some dialogues. Life should decrease, and life should increase.

Scenario 8: Combat System

- **Role Involved:** Both
- **Objective:** Create comprehensive combat mechanics, including weapons, combos, and mana usage.
- **Preconditions:** Have a graphic card. Create or join a game successfully.
- **Test Steps:**

1. Start a game.
2. Equip a weapon for example a sword (that you found).
3. Attack someone (enemie, NPC)

- **Expected Outcome:** The entities who received damages should attack you back, run away or die.

Scenario 9: Consumables

- **Role Involved:** Both
- **Objective:** Add various potion types (heal, poison, stamina regen) with distinct effects.
- **Preconditions:** Have a graphic card. Create or join a game successfully.
- **Test Steps:**
    1. Start a game.
    2. Take a consumable, for example a poison potion and a healing potion.
    3. Use poison potion.
    4. Use healing potion.
- **Expected Outcome:** Life should decrease, and life should increase.

Scenario 10: LLM Server

- **Role Involved:** Both
- **Objective:** Deploy a dedicated LLM server to optimize game development performance and AI logic.
- **Preconditions:** Have a graphic card. Create or join a game successfully.
- **Test Steps:**
    1. Start a game.
    2. Speak to an NPC.
    3. Restart another game.
    4. Start a new game.
    5. Speak to the same NPC.
- **Expected Outcome:** You should have 2 different dialogues.

2.3 Success Criteria

Criterion	Description	Threshold for Success
Stability	No major crashes or critical bugs	at most 1 crash allowed for each user playing *(statistics are based on the major game licenses observed)*

Usability & Playability	Users can explore and understand features, controls and game mechanism with minimal guidance	80% positive **in-game feedback** from testers
Performance	Consistently good performance (stable framerate, low lag)	80% positive **in-game feedback** for frame rate
Immersion	The player dives into the game	80% positive **in-game feedback** for atmosphere
AI Integration	Players interact with AI	80% positive **in-game feedback** for AI integration in game

2.4 Issues & Limitations

Issue	Description	Impact	Planned Fix? (Yes/No)
Generation's time	The generation of a *run* takes time.	Mediu m	Yes & No
Resource heavy	The game can be resource heavy to play.	High	Yes
AI Interaction	AI can be generated at the start of the run, but can't be inside the run period.	Low	No