Rick Smith

CS 1010 – Intro to Interactive Entertainment

Cody Squadroni

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Module 8 – Challenge: Core Mechanics and Balancing

For one mechanic in my game *Shadow Realms*, I want to implement a **fire floor trap**.

Mechanics:

The fire floor trap activates when a character steps on a concealed pressure sensor embedded in the floor. When triggered, a portion of the floor erupts with flames for a short period, harming any characters in its radius. The sensor detects the character's weight exceeding a threshold (e.g. 20lbs).

Character Attributes Affected

When the trap is triggered, the character takes damage if caught in the flames. The damage is determined by a nonuniform random number generator:

- Damage = 15 + 1d20 dice roll. This results in damage ranging from 16–35. Additionally, characters will experience a temporary movement debuff if they are burned, slowing their escape from subsequent hazards.

Reset Period

After the flames subside, the trap enters a cooldown state for 10–20 seconds (randomly chosen with 10 + 1d10 dice roll). During this time, the pressure sensor resets and becomes active again.

Trap States

- Idle: The trap is inactive, waiting for a character to step on the pressure sensor.
- Triggered: The flames erupt from the floor, dealing damage to any characters in the affected radius.
- Cooldown: The flames extinguish, and the trap resets after the cooldown period.

Vulnerability

The pressure sensor can be bypassed by a character able to jump entirely over it, or by throwing an object (e.g. a weapon or item) on the sensor. Additionally, the trap has a limited range of effect, allowing players to skirt the edges of the flame radius without taking damage. A clever player could exploit this vulnerability by triggering the trap prematurely with a throwable object or luring an enemy onto the sensor to take the damage instead.

Balancing Checkers

To create an asymmetric version of checkers, I would change the rules so that one player is designated as the "King's Guard" and the other as the "Rebels" (attackers & defenders). The two sides differ in units, moves, and victory conditions:

Unit Types and Numbers

- King's Guard: 8 pieces, including one that starts as a king. Regular pieces move one square diagonally forward, while the king moves diagonally in any direction.
- Rebels: 12 pieces, but none start as kings. Rebels have faster movement, jumping two squares diagonally, but cannot capture enemy pieces until they are promoted to kings.

Victory Conditions

- King's Guard: Win by eliminating all Rebels.
- Rebels: Win by eliminating all King's Guard pieces or capturing the king.

Initial Play-Test Observations

During play-testing, the Rebels' numerical advantage and faster movement gave them an edge in the early game, but their inability to capture pieces until they've been kinged took away any real sense of threat from the attacking Rebels' side. Since the rebels need to reach the other side of the board to be promoted to pieces that can attack, it seems that a winning strategy is just to keep the back row of the defenders stable to prevent these upgrades.

Additional Rules

To prevent the back row of defenders from standing still and stopping promotion of the rebel pieces, I decided to implement a new rule where the 8 defenders (King's Guard) can only be placed on the 2nd and 3rd rows from the bottom. The king can be placed anywhere inside those two rows.

Additional Play-Test Observations

This felt like there was a bit more challenge here for the defending pieces. The majority of the game was spent trying to prevent the king from being captured. While this felt like a completely different game, I'm hesitant to say this was any better than the original rule set on checkers.

Conclusion

At first, I was excited by the new rule set to try and make checkers more interesting, but after trying the new rules, it's easy to see the holes in gameplay. I imagine much more testing and alteration of the rules would be required to balance this game and make it more engaging.

Pics of gameplay (pawns were used to mark pieces as "kings" which allowed them to move backwards.