Formidable Fortress

Artillery Game with Dynamic Difficulty Adjustment

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Introduction

Traditionally, games are designed with a fixed difficulty. In this approach, the game risks being either too difficult and frustrating or too easy and boring. This project tackles this issue by using **Dynamic Difficulty Adjustment (DDA)** in game design. DDA can be summarized as follows:

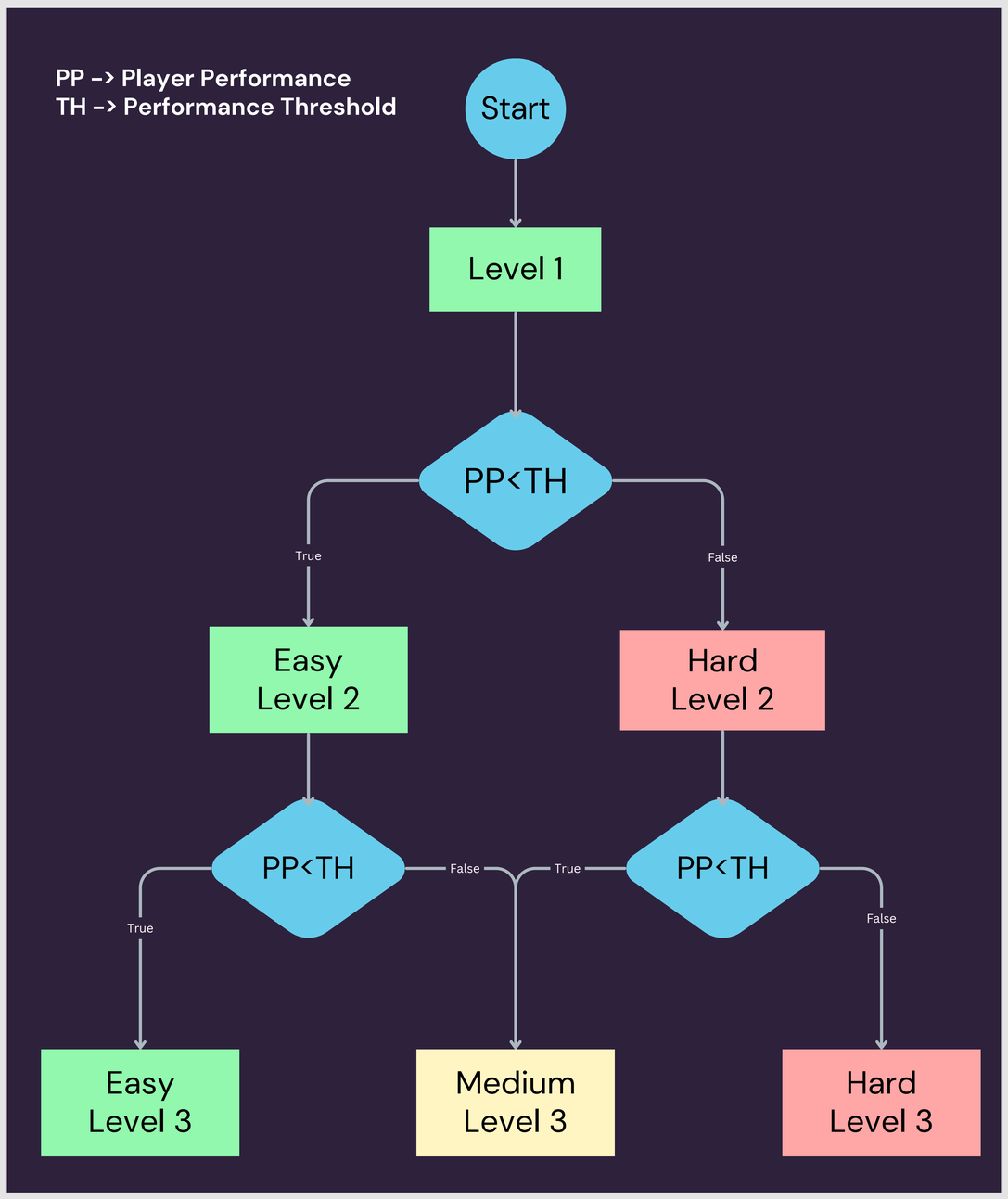
- A mechanism that dynamically adjusts difficulty based on player performance and skill level.
- Ensures the game remains challenging yet not frustrating.
- Keeps players engaged by preventing boredom from easy levels and reducing frustration from difficult ones.

Objectives

- Design and develop an artillery game
- Monitor metrics like accuracy, and attempts
- Adjust difficulty based on player performance

Design Considerations

- DDA is used only to increase the game's difficulty.
- If a level has "Easy" and "Hard" modes, both are more difficult than the previous level.
- Decision points determine which difficulty mode will be selected in the next level.
- The algorithm only decides which pre-designed level will be selected, avoiding unpredictability.
- The difficulty is adjusted only after the completion of a level, ensuring that players do not detect the DDA mechanism during gameplay.



Conclusion

Unlike other games with DDA, where the algorithm dynamically generates game elements like enemies, this game uses predesigned levels and modes. The DDA system decides which mode to select at each level, keeping this mechanism hidden from the player. This approach preserves the player's sense of agency while allowing the designer to maintain full control over the player's experience.

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