

Comparison of Design Alternatives

Current Design

Observations: GamePanel combines game loop and rendering; Hero handles both logic and rendering; Hero directly accesses KeyHandler variables.

Pros: Simple implementation.

Cons: Tight coupling and poor separation of concerns.

Alternatives

1. A GameState class could manage the hero's position, the tile map, and other entities.
 - a. Pros: Centralizes game logic for easier updates.
 - b. Cons: Adds complexity.
2. A Renderer class would be responsible for drawing tiles, entities, and UI elements.
 - a. Pros: Domain objects like Hero would not have rendering specific methods, which would lead to a better separation of model and view.
 - b. Cons: Adds complexity.
3. KeyHandler updates a centralized InputState. The game loop reads InputState and updates the GameState accordingly.
 - a. Pros: Decouples input handling from entities.
 - b. Cons: Adds complexity.