

Relic Raider - Use Case Specification

(Plain Document Format)

UC-1: Start Game & Load Map

Primary Actor: Player

Preconditions: Game launched and assets available.

Trigger: Player selects 'Start Game'.

Main Flow:

1. Engine loads board (walls, rewards, punishments, enemies).
2. Player spawns at start cell; exit cell defined.
3. HUD displays score and time.

Alternative Flow:

Missing/invalid map → show error.

Postconditions: Game world initialized; ready for player input.

UC-2: Move the Main Character

Primary Actor: Player

Preconditions: Game running and player spawned.

Trigger: Player presses arrow key during tick.

Main Flow:

1. Engine checks target cell.
2. If not wall/barrier, move succeeds.
3. Else, stay in place.

Alternative Flow:

No input → stay idle; enemies still move.

Postconditions: Player position updated or unchanged.

UC-3: Enemy Pursuit (A* Pathfinding)

Primary Actor: Game Engine

Preconditions: Enemies exist on map.

Trigger: Each tick.

Main Flow:

1. Compute A* step toward player.
2. Move one cell if path open.
3. Skip walls/barriers.

Alternative Flow:

Enemy reaches player → triggers Game Over.

Postconditions: Enemy positions updated.

UC-4: Collect Reward / Trap Interaction

Primary Actor: Player

Preconditions: Player on cell with item (reward or trap). **Trigger:** End-of-tick collision check.

Main Flow:

If reward → increase score and remove item.

If trap → decrease score; remove if applicable.

Alternative Flow:

Score below 0 → Game Over.

Postconditions: Score updated; item resolved.

UC-5: Get Caught (Lose Condition)

Primary Actor: Game Engine

Preconditions: Game running with enemies active.

Trigger: Enemy and player occupy same cell after movement resolves. **Main Flow:**

1. Detect overlap between player and enemy.
2. Stop game loop; display 'Game Over' screen.

Alternative Flow:

None.

Postconditions: Game state set to 'Defeat'; score and time recorded.

UC-6: Win Condition - Reach Exit

Primary Actor: Player

Preconditions: All regular rewards collected; exit available.

Trigger: Player reaches exit cell.

Main Flow:

1. Detect zero regular rewards.
2. Player steps on exit.
3. Display victory screen with score/time.

Alternative Flow:

The player reaches the exit before collecting all rewards → no win.

Postconditions: Game state set to 'Victory'; stats shown.

UC-7: Pause and Resume Game

Primary Actor: Player

Preconditions: Game in progress.

Trigger: Player presses 'P' key or clicks pause icon.

Main Flow:

1. Freeze all tick updates and enemy movement.
2. Display pause overlay.
3. Resume restores prior state.

Alternative Flow:

Unexpected input → ignored while paused.

Postconditions: Game state toggled between Running and Paused.