

## Operation Contracts for Rokue-Like

### 1. Move Hero

**Contract CO1:** moveHero

**Operation:** moveHero(direction: String)

**Cross Reference:**

- Use Case: Move Hero

**Preconditions:**

- The Hero is in a hall.
- The direction is valid (up, down, left, right).

**Postconditions:**

- The Hero's position is updated to a new location based on the direction.
  - The system confirms the Hero's new position.
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### 2. Search for Rune

**Contract CO2:** searchObject

**Operation:** searchObject(objectID: Integer)

**Cross Reference:**

- Use Case: Search for Rune

**Preconditions:**

- The Hero is adjacent to the object.
- The object is clickable and within the hall.

**Postconditions:**

- If the object contains the rune:
    - The Rune is marked as found.
    - The exit door is unlocked.
  - If the object does not contain the rune:
    - A "not found" message is displayed.
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### 3. Collect Enchantment

**Contract CO3:** collectEnchantment

**Operation:** collectEnchantment(enchantmentID: Integer)

**Cross Reference:**

- Use Case: Collect Enchantment

**Preconditions:**

- An enchantment is present within the hall.
- The Hero is adjacent to or within range of the enchantment.

**Postconditions:**

- The enchantment is added to the Hero's inventory or applied immediately.
  - The enchantment is removed from the hall.
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#### **4. Use Enchantment**

**Contract CO4:** activateEnchantment

**Operation:** activateEnchantment(type: Enum)

**Cross Reference:**

- Use Case: Use Enchantment

**Preconditions:**

- The specified enchantment is present in the Hero's inventory.

**Postconditions:**

- The effect of the enchantment is applied, gives a succes message (e.g., Cloak of Protection activates).
  - The enchantment is removed from the inventory if it has limited uses.
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#### **5. Timer Countdown**

**Contract CO5:** countdownTimer

**Operation:** countdownTimer()

**Cross Reference:**

- Use Case: Timer Countdown

**Preconditions:**

- A hall has been entered and the timer is active.

**Postconditions:**

- The remaining time is decremented.
  - If the timer reaches zero:
    - The game ends with a "Game Over" screen.
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## **6. Unlock Door**

**Contract CO6:** unlockDoor

**Operation:** unlockDoor()

**Cross Reference:**

- Use Case: Unlock Door

**Preconditions:**

- The Hero has found the rune in the hall.

**Postconditions:**

- The exit door is unlocked.
  - A success message or sound effect is played.
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## **7. Progress to Next Hall**

**Contract CO7:** progressToNextHall

**Operation:** progressToNextHall()

**Cross Reference:**

- Use Case: Progress to Next Hall

**Preconditions:**

- The Hero has unlocked the exit door.
- The current hall is completed.

**Postconditions:**

- The Hero is transitioned to the next hall.
  - The new hall is initialized with its respective objects, monsters, and rune.
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## **8. Game Over**

**Contract CO8:** endGame

**Operation:** endGame(reason: String)

**Cross Reference:**

**GoGirls** – Sarp Çağan Kelleci - Kemal Serbay Uğur - Emsalinur Arıca - Berke Karamanlı - Muhammet Üçler Çetin - Eray Önder

- Use Case: Game Over

**Preconditions:**

- The Hero's lives have reached zero, or the timer has expired.

**Postconditions:**

- The game ends.
- A "Game Over" screen is displayed with the reason for failure.