

Supplementary Specification

Group: Group 9

Introduction

This document is the repository of all RoKULike 302-Phase 1 Requirements not captured in the use cases.

Functionality

The System does lots of actions in the Game Mode (Running the AI of the monsters, deciding the location of the rune etc.). The details are explained in Application-Specific Domain Rules.

Usability

Human Factors

- The game should ensure that all items except the rune are clearly visible to the Player on the screen.
- User interface should be easy to understand and navigate.
- The system should give warnings when the Player does something outside the specifications of the game rules.
- The system must respond to the user input quickly.

Reliability

Recoverability

If there is an error, Player can restart the Game.

Performance

Game must not crash. Game must run smoothly, without visible fps drops.

Supportability

Configurability

The Player can configure the Game in Building Mode.

Adaptability

The Game should be built in a way that makes adding new features easy.

Implementation Constraints

RoKULike-302 Project Team uses Java (standard Java libraries, Java Swing, etc.) to implement the Game.

Application-Specific Domain Rules

General Game Rules:

- L is the default distance unit in the game. All the dimensions are going to be driven from this unit. By default, L is one pixel of the game, which is standard in all pixel art files
- The Hero, Fighter, and arrows from the Archer will move in L/secs.
- The size of the Hero is 16x16 L, along with the other enemies.

- There are 5 enchantments: Extra time, Extra life, Reveal, Cloak of Protection and Luring Gem.
- Enchantments can be found in the chests that are present in the Halls of the game.
- There are two main use types of the enchantments, namely:
 - Instantly used: Extra life and Extra time items are used up at the moment they are picked up, so they don't take up inventory space.
 - Stored in inventory: Reveal, Cloak of Protection, and Luring Gem are stored in the inventory once they are picked up. They can be used with their dedicated keyboard key, and the amount of the item used is decreased from the inventory.
- The chests are places where the enchantments and runes can be found. They are placed in the game during build mode. There needs to be at least one chest that contains the rune.
- Rune is a special item that only has one instance in each hall; after collecting the rune, Player goes to exit to finish the Hall. If every hall is complete, the game ends.
- The rune and enchantments are picked up by opening the chests and pressing the move button that points towards it.
- Monsters are spawned to the Halls every 8 seconds at a random location.
- Archer monster shoots an arrow every second, if the arrow connects with the player they lose a life. Archer monster should be within a distance of 4 square to the hero to make the hero lose a life. If the Hero uses a Cloak of Protection, Archer cannot see the Hero.
- Fighter monster cannot see so they move around randomly. Fighter monster must be next to the hero to stab him/her with a dagger. If the Player placed a Luring Gem on the ground, the Fighter will walk towards it.
- Wizard monster does not move or attack the player. However, they teleport the rune to a random chest every 5 seconds and the hero is not able to view teleportation.
- Using Reveal enchantment causes a 4x4 grid window to be highlighted, which one of them showing the current location of the rune

Building Mode Rules:

- Player enters the Build mode from the title screen.
- In Build mode, the Player can see all 4 Halls of the game and has access to a sidebar that includes decorative items, chests, and walls that can be placed in the Halls.
- After the Player finishes designing the levels, Halls need to be checked for the number of items they contain, whether there is a path from anywhere to chests, and chests to the exit, to prevent soft locking.
- If the Halls satisfy the requirements, the data for these levels are stored so they can be used in the future.

Enchantments:

The enchantment number is increased by 1 when enchantment is picked up.

The enchantment number is decreased by 1 when enchantment is used up.

Enchantments are used by their dedicated keys on the keyboard.

If there are multiple of the same enchantment in the Inventory, the system displays how many of them exist on top of the respective enchantment icon.

If the Player tries to use an enchantment they do not have, the system gives a warning.

Lives:

Player starts with 3 lives at the beginning of the game.

Every arrow and stab causes the player to lose one life.

If the player loses all of their lives before finding the runes and going to exit, they lose the game.

Moving the Hero:

The Hero is controlled by the arrow keys on the keyboard.

Hero cannot walk through the walls.

Timer:

The player has initially has a duration of $5 \times (\text{number of objects in the hall})$ seconds to complete the hall.