

#### Use case: start the game

- Primary actor: player
- Goal in context: to start playing this 2D game
- Precondition: the device that runs the game should be able to run java program, keyboard and mouse should be working
- Trigger: the player want to play the 2D game
- Scenario:
  1. Player clicks on the start button on main menu
  2. The system displays the first stage
- Priority: moderate priority, it is a basic function
- When available: as long as the game is able to run on the given device
- Frequency of use: median

#### Use case: move main character

- Primary actor: player
- Goal in context: to move the main character on the game window
- Precondition: the player still “alive” (points is not lower than 0)
- Trigger: the player wants to collect the reward and avoid the enemy
- Scenario:
  1. The player presses the direction keys
  2. The main character moves to the next cell on the corresponding direction
- Exceptions
  1. There is a barrier on the corresponding direction – see use-case: move to a cell with entity
  2. Overall score is negative
  3. Main player is caught by the movable enemy
- Priority: high priority, this function allows programmer to debug code and is the way for asking user input
- When available: the thread is running and main charact is on a stage
- Frequency of use: high

#### Use case: move to a cell with entity

- Primary actor: main character
- Goal in context: to interact with the entity in game
- Precondition: the main character still “alive” (points I s not lower than 0)
- Trigger: the player wants to move to the cell with reward, or is accidentally caught by emeny
- Scenario:
  1. The main character moves to a barrier
  2. The system goes to next tick, but the main character stay at the same position
  3. The main character moves to an unanimated enemy
  4. The system decreases the overall score
  5. The main character moves to a reward
  6. The system increases the overall score
  7. The main character moves to a movable enemy
  8. The system displays lose-interface

- Priority: high priority, interaction is necessary part of the game
- When available: the thread is running and the main character is on a stage

Use case: move to next stage

- Primary actor: main character
- Goal in context: the main character moves to exit cell for display next stage
- Precondition: all necessary rewards have been collected
- Trigger: want a higher overall point (score)
- Scenario:
  1. The main character has collected necessary reward
  2. The system unlocks the exit for next stage
  3. The main character moves to the exit
  4. The system changes the broad to the next stage
- Exception:
  1. There is at least one necessary reward that have not collected
- Priority: moderate priority, this function is easy to implement if programmers have already implements other basic functions
- When available: there is a next stage
- Frequency of use: low

Use case: win the game

- Primary actor: main character
- Goal in context: to win the game
- Precondition: main character is on the last stage and has collected all the necessary reward
- Trigger: want to win the game
- Scenario:
  1. Main character has gone through all the stage and moved to the exit
  2. The system displays a winning message
- Priority: moderate priority, easy to implement after other function have implemented
- When available: there isn't a next stage
- Frequency of use: once per game

Use case: change setting of the game

- Primary actor: player
- Goal in context: change sound or difficulty
- Precondition: the game is on the main menu
- Trigger: want to change sound or difficulty
- Scenario:
  1. The player clicks on setting button on the main menu
  2. The system displays setting OS for player to change sound and difficulties
- Priority: low priority, this function is not necessary for game to run
- When available: the main menu is on the screen
- Frequency of use: median

#### Use case: exit the game

- Primary actor: player
- Goal in context: to stop the game
- Precondition: the game is able to display exit button
- Trigger: want to exit the game
- Scenario:
  1. The player clicks on exit button on the main menu
  2. The system exits the game
  3. The player wins/loses the game
  4. The system displays corresponding interface with exit button on it
  5. The player clicks on exit button on wins/loses interface
  6. The system exits the game
- Priority: moderate priority
- When available: when player win/lose or main menu is on the screen
- Frequency of use: low