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Course: CMPT-276

Use Case 1: collecting the reward

Primary actors: the player

Goal in context: to increase the final score of the player for winning the game

Precondition: the game starts

Trigger: the character “touch” the rewards

Scenario:

1. The player logs on to the game
2. The system loads the map and its features
3. The system displays the entire environment and rewards on viewing window:
 - a. Regular Reward: appears throughout the entire round
 - b. Bonus Reward: only appear for a limited amount of time
4. Player controls the character move inside the map and avoiding enemy
5. Players control character to collect the reward
6. Reward will disappear after being collected and display the effect
7. The user’s final score will increase according to the type of reward
8. If player collect enough points, the gate for the next level will display on the viewing window
9. Players can either staying to collect more reward or enter the gate leads to the next level

Exception:

1. The system is incomplete or unable to load the map. The use case end
2. The player aborts the game, the use case being aborted. The use case end
3. The character being eliminated (“touch” moving enemy at any time or punishment while the final score is 0). The use case end
4. The time is running out, but the player does not collect enough score to open new level. The use case end

Priority: High priority, fundamental function of the game engine

When available: Initial of the game

Frequency of use: highly frequent

Channel to actor: via PC application

Secondary actor: the character

Channel to secondary actors: PC-based system

Open issues:

1. Potential problems related to maintain high rate of frame per second for stable motion of the game
2. Reward and punishment appear at the same coordinate
3. The system is unable to update the user's final score when the character "touch" the reward
4. The game crash during the run time

Use Case 2: Interact with moving enemies

Primary actors: the player

Goal in context: terminate the game if the character has contact with moving enemies

Precondition: the game starts

Trigger: player's character collides with the moving enemy

Scenario:

1. The player logs on to the game
2. The system loads the map and its features
3. The system displays the entire environment and moving enemies on viewing window:
 - a. A few moving enemies will randomly generate at beginning of the game (based on level)
 - b. Moving enemies' able to move 1 cell at the "tick".
 - c. Moving enemies can only move within the boundary of the game.
4. The player starts to move the character around the map
5. The moving enemy will target on the character if she stays within its radar' radius and approach him. Otherwise, the moving enemy will randomly wander around the map
6. There will be no effect if the enemy pass the reward and punishment
7. The player controls the character to avoid the enemy and barrier
8. The character collides the enemy the game end and the final score turn to 0
9. The system displays announcement message on the screen

Exception:

1. The system is not fully load or unable to load the map. The use case end
2. The player aborts the game, the use case being aborted. The use case end
3. The user enters the gate to new level. The use case will be aborted (being loaded at the next level)
4. No interaction between character and moving enemies during run time. The use case continues
5. The character collides with the moving enemies, but shows no effect, game crash. The use case end

Priority: moderate priority, after the basic function

When available: Initial of the game

Frequency of use: highly frequent

Channel to actor: PC-based system

Secondary actor: character, moving enemies

Open issues:

1. Moving enemies are unable to move or get trapped at the obstacles/walls
2. Moving enemies do not change direction while colliding with walls or obstacles
3. Moving enemies do not chase the character while character's position stays inside enemy's radar
4. There is no exit at the initial location of moving enemies
5. The game crash during the run time.

Use Case 3: Interact with punishment

Primary actors: the player

Goal in context: deduct the player's final score or end the game

Precondition: the game starts

Trigger: character directly interact with the punishment

Scenario:

1. The player logs on to the game
2. The system loads the map and its features
3. The system displays the entire environment and punishment (no motion) on viewing window
4. The player starts to move the character around the map
5. The character touches the punishment
6. The player's final score will be subtracted by the amount of the punishment
 - a. if the final score is 0 at the time of interaction, the user will lose the game, the system sends announcement message
7. The punishment will disappear after the contact with the character

Exception:

1. No interaction between punishment and character during run time. The player's final score remains unchanged. The use case continues
2. The user aborts the game (during run time), the use case also being aborted. The use case end
3. The character "touches" the punishment while the player's final score is 0. The use case end
4. The user enters the next level gate. The use case end (will be loaded for the next level).

Priority: moderate priority, after the basic function

When available: Initial of the game

Frequency of use: medium frequent

Channel to actor: PC-based application

Secondary actor: character, punishments

Open issues:

1. The interaction between character and punishment shows no effect
2. The system fails to update the player's final score after interaction of the character and punishment
3. The punishment appears at the same position with reward
4. The punishment locates at non-accessible area on the map
5. The game crash during run time

Use Case 4: access the game

Primary actors: the character

Goal in context: display the map and related features on the screen

Precondition: the user log-in the game

Trigger: the system finish loading the map and all features

Scenario:

1. The player logs on to the game
2. The system loads the map and its features
3. The system displays the boundary of the map, barriers, and features (rewards, moving enemies and punishments) on screen
4. The system displays the final score and time within viewing window
5. The system displays the ready message at each game, player presses any button to trigger
6. The user controls the character moving around the map by 4 keyboard buttons (left, right, up, and down)
7. The system displays the effect when the character interacts with features (rewards, moving enemies, and punishments)
8. The system displays the announcement message if the user successfully enters the level gate
9. The system displays the announcement message if the user fails to complete the level (either "touch" moving enemies or "touch" punishment while the score equal to 0 or running out of time)

Exception:

1. The system is not fully load or unable to load the map. The use case end
2. The player aborts the game, the use cased being aborted. The use case end
3. The character being eliminated ("touch" moving enemy at any time or punishment while the final score is 0). The use case end
4. The time is running out, but the player does not collect enough score to open new level. The use case end

Priority: High priority, fundamental function of the game engine

When available: Initial of the game

Frequency of use: highly frequent

Channel to actor: PC-based application

Secondary actor: system/game

Open issues:

1. Power outage occurs, system suddenly shutdowns
2. The game crash during run time