Functional Requirements Specification

1. Introduction

This FRS document discuss all the functions of the proposed trade game system. Elaborates on the performance requirements and the functions in enough detail, relating them to the system environment.

1. System Functions

use cases are the functions of the trade game system. We can represent use cases in the form of user stories because in the trade game we have so many use cases to explain and if we

Use cases step Tests Cases

Input:

Player Info 0 player information

Turn:

Move player 1 player1 move

Switch Turn 1 player2 move

Space Cards:

Pass Go cell 2 passed Go

Free parking 2 free parking

Go To Jail 2 Jail1

Get out of Jail 2 Jail2

Card cell 2 C chest & Chance

Draw a Jail card 3 C chest1 or chance 1

Draw a lose Money card 3 C chest 2 or chance 2

Draw a gain Money card 3 C chest 3 or chance 3

Draw a move player card 3 C chest 4 or Chance 4

Tradable cells:

Purchase Property 4 property1

Pay Rent 4 propery2

Buy Railroad 4 railroad1

Pay rent to railroad 4 railroad2

Buy Utility 4 utility1

Pay rent to utility 4 utility2

Buy house 4 buyhouse1

Trading:

Trade 5 Trade Accept and Decline

Bankruptcy:

Bankrupt 6 give money and tradable cells

Current Status:

View information 7 status of the game

Functional requirements of the listed system functions:

Title: Enter the player Info

Right after the game gets started, the player Information dialog will prompt the Banker to enter the details of the players.

Inputs:

Enter the number of players in the game [2<=p<=8];

Name of the each player [“string”];

Title: Move Player

The player rolls the dice by clicking on the Roll Dice button. The Roll Dice dialog pops up to indicate the value of the dice roll. In this game, there are two six-faced dice.A player moves based on the dice roll [1-6] [1-6]. When the user reaches the end of the board, he cycles around.

Inputs:

The value of the roll dice.

Title: Switch Turn

The player’s turn ends when he clicks on the END button. The other player moves in turn.

Title: Pass GO cell

When a player passes or lands on the GO cell, the bank gives the player $200.

Title: Free Parking

When a player lands on Free Parking, nothing happens

Title: Go to Jail

When a user lands on the "Go to Jail" cell, the player goes directly to jail, does not pass go, and does not collect $200.

Title: Get Out of Jail

When a player is in Jail, he must pay 50 dollars to get out of jail in the next turn. If he does not have enough money, he is out of the game, and the cells he owns become available without any houses.

Title: Card cell

When the player lands on the card cell. he clicks on the Draw card button depending on the type of cell (C chest or Chance). . A card is drawn from the top of the Community Chest cards pile or Chance Cards pile, depending on the type of cell the player lands on. The player performs the actions described on the card [S1-S4]. After that, the card is put back to the bottom of the card pile, and the status of the player is updated and displayed.

Title: Draw Jail Card

When a player lands on a Community Chest or Chance cell, the player draws a card from the Community Chest or Chance. If the card is a Jail card, the player goes to Jail without getting paid when passing the Go cell.

Title: Draw Lose Money Card

When a player lands on a Community Chest or Chance cell, the player draws a card from the Community Chest or Chance. If the card is a lose money card, the player pays the money to the bank. If he does not have enough money, he is out of the game, and the cells he owns become available without any houses.

Title: Draw Gain Money Card

When a player lands on a Community Chest or Chance cell, the player draws a card from the Community Chest or Chance. If the card is a gain money card, the player gets the money from the bank.

Title: Draw Move Player Card

When a player lands on a Community Chest or Chance cell, the player draws a card from the Community Chest or Chance. If the card is a move player card, the player goes to the specified cell. If the player passes go, he or she is paid $200 from the bank.

Title: Purchase Property

When a player lands on a property cell, and it is available, the player may purchase it. The price is the land value of that property.

Title: Pay Rent

When a player (A) lands on a property owned by another player (B), A must pay rent to B. The level of rent paid is a base level of rent, unless the owner has a monopoly of a color group and houses/hotel. If this happens rent almost doubles the base level.

Title: Buy Railroad

The land value of the railroads is the same [$200].

Title: Pay Rent to Railroad

When player A lands on player B's railroad, A pays rent to B based on the number of railroads B owns. If the base rent of a railroad is R, and the number of the railroads B owns is N, the amount of rent A needs to pay B is

* Rent = R \* 2 N-1.

Title: Buy Utility

The land value of the utilities is the same.

Title: Pay Rent to Utility

When player A lands on player B's utility, A pays rent to B based a dice

* If player B owns 1 utility, A pays 4 times the dice roll. Rent = 4\* dice
* If player B owns 2 utilities, A pays 10 times the dice roll. There can only be two utilities on a game board.

Title: Buy House

A player has monopoly when he purchases all the properties of a color group. When a player has a monopoly of a color group, he can buy houses for those properties at the beginning of his turn. Player cannot purchase more than 5 houses on any given monopoly.

When the Buy house button clicked, the Buy house dialog shows up. Input:

* The player selects the monopoly color group and
* The number of houses he wants [MAX =5].
* After clicking on OK in the dialog box, the player pays the money and the houses are built.

Title: Trade

If the player wants to trade with another player, he clicks on the “Trade” button. The Trade property dialog pops up

Input:

* player enters the player (seller) he wishes to trade with,
* The cell he wishes to buy, and
* The amount of money he wish to pay.

Then another dialog shows up to ask the seller if the seller agrees with the deal. Player can decide to accept or decline the offer.

Input:

* + - * Yes (cell is sold to the player for that amount of money).
      * No

Title: Bankruptcy

If player 2 wishes to purchase a property from player 1, player 2 will name an amount of money to pay player 1 for the property they wish to own. Player 1 can decide to accept or decline the offer

Title: View information

The players can see their status, including theirs names, money, and properties on the game board. The attributes of the cells, including the names, the owners, the number of houses, and the price, is displayed on the game board, too.