REQUIREMENT ANALYSIS DOCUMENT

Requirement Specification

Vision

The purpose of the Project is simulate the monopoly game. The requirement of the system is players, board, dices, bank, chance and community cards and some special cases like going to jail. Also, getting lands, hotels are the actions of the game and should be simulated in the game.

Problem Statement

Monopoly is a board game where players roll two six-sided dice to move around the game board, buying and trading properties, and developing them with houses and hotels. Players collect rent from their opponents, with the goal being to drive them into bankruptcy. Money can also be gained or lost through Chance and Community Chest cards, and tax squares.

Scope

In the second iteration there are specific squares for lands with different color and community places and chance squares like goToSquare current location decreases 3 squares, gain100dollars player's money increase 100 dollars doctorFee player pay 100 dollar to doctor and decrease player's money, lottery increase the player's Money 75 dollars, and goToJail makes the player in jail.

Also in the second iteration, that function is added: if the square has an owner other players locate in that square have to pay rent to owner player.

When players buy all of same color lands they can built hotel and the rent will increase.

The Square class, is for the squares in monopoly boards.Each square has description .Property object and card object used in this class for assigning the properties of each square. Specific methods for chance cards gain100Dollars, goToSquare, doctorFee, goToJail ,lottery, ang goToStart methods are implemented in this class.

The Card class is for representing the cards in Monopoly.

The Property class is for squares' properties the square can be lands, hotels etc..Set and get methods also added the class. The property of the square includes price, rent,housePrice,mortgage price and color.If the square is community place it just has

price,rent,mortgage price and color(default White). Also hasOwner variable shows if the square has owner.

Also, isUpgraded shows that the square upgraded to a hotel or not.

Player class is for players.It has player's id, Money amount, current locations, debt to players and debt to banks,isJail, isBankruptycy variables.This class includes colorCounter method.This method is for determining colors of the land if player has all of the same color land.

askForBuiltHotel method added and this method calls colorCounter and ask to built hotel if player has all same color lands.

Dice class is for 2 dices.It has roll method to change the values of dices and get and set mothods included.

Monopoly class is the main class. The execution of the game is here.

Board class consist of squares array, cards, square properties, set descriptions and properties of the squares and pullRandomCard method for randomly card selection.

System constraints:

Will run within a CMD environment and so no additional software to be installed on a client machine.

Stakeholders:

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Glossory of the Terms(Alphabetically)

Board: A place where the game board simulated and it includes squares and square properties.

Card: Shows the community and chance cards.

Dice : Items that have values from 1 to six on its faces

Player - A person who plays the game.

Property: Reflect the squares' characteristics.

Square :A location of the player. There are 40 squares in board

Use Cases

User enters the number of players.

Actors: User, Monopoly Simulation System

Precondition: none

1: Monopoly System asks to user how many players will exist.

2: User enters the number of players.

3: Monopoly System rolls dice and generate random numbers.System shows dice numbers and total of the dice.

4: Monopoly System creates the board, 40 squares on the board, the number of user entered players on the board.

7: Monopoly System starts all the players in first square and increase their money 200 dollar.

8: Monopoly System changes the location of the players depends on the dice.

9: Monopoly System demonstrates the description of the square and ask for buying the square.If player buy the square system shows remaining money of the player.

10:If location owned by other player system pays the rent and shows the remaining money of the player.

11:If player is in jail and pays 50 dollars can go out from the jail.

12:If player comes to Free Banking Square nothing happens, gain100dollars player's money increase 100 dollars, lottery increase the player's Money 75 dollars

13:If players come starting point gains 200 dollars.

14:If player has community chest card and doctor fee selected, player pays 50 dollars.

15:If player come in chance square and tree back square card selected, player's back 3 squares

16: If player come in chance square and goToJail selected, player become in jail.In order to become free player must pay 50 dollars.

17:If player become bankrupticity system gives goodbye message for player.