REQUIREMENT ANALYSIS DOCUMENT OF MONOPOLY GAME

REQUIREMENT SPECIFICATION

VISION

There are lots of board games for playing with friends. The most popular game is Monopoly. Our customers want a simulation of this board game. There must be only bots for this simulation. Bot number will be chosen by the system user. This simulation will continue until the last player remains.

PROBLEM STATEMENT

After system user enters the player number for the simulation, players will take turn, roll two dices, move on the board according to the sum of the dices' values and act automatically. They decide their actions with a predetermined decision. And the game will continue with original Monopoly Game rules.

SCOPE

-This system provides the ability to observe the results of a monopoly game without playing. Because the system is automatic, user gets the results faster.
-This system gives information about how game can result in different circumstances.

SYSTEM CONSTRAINTS

-The simulation can have 2 to 8 players.
-The system user enters the number of players, tax fine for tax squares, money amount at the beginning of the game, money amount for passing go square, fine for go out the jail, fine amount for each property,transport and utility, price amount for buy the properties,transports and utilities, go to jail square number in the game.
-The number of bot players entered starts playing the game. No external intervention.
-Simulation should run from a command line. No GUI part for this simulation.
-Each player must wait until it's their turn.
-The dices are thrown once per turn.
-Dices are thrown for buy the property, buy a house, buy a hotel, making decisions and go out from jail.

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GLOSSARY OF TERMS

Player : People who play the Monopoly
Square : Specified cells on the board
Board : Area, which has 40 squares, for play the game
Money : Money used for paying taxes
Dice : Two cube for playing the game
Piece : Objects for represent players
Tax Square : Players must pay fine when they come on that square
GO Square : Players take some money when they pass from this square
Free Parking Square: When a player lands here nothing happens and they move off the space on their next turn.
Go To Jail Square: If a player lands here, they immediately must move their token to jail.
Property Squares: Player can buy property squares.
Transport Square: Player can buy transport squares.
Utility Square: Player can buy transport squares.
Jail Square: A penalty square for every player.
Community Chest Square: Player has to draw a card from community chest cards.
Chance Square: Player has to draw a card from chance cards.
Community Chest Cards: Cards that has specific actions.
Chance Cards: Cards that has specific actions.
House: Player can built a house into the property squares if he/she can afford the money.
Hotel: Player can built a hotel if there is 4 houses in the same square.

USE CASES

1. Each player will roll a dice.
2. According to dice values, they determine their turn.
3. Each player chooses their pieces in the game.
4. Each player takes determined start money by the system user.
5. The game starts from first player and continues with next players.
6. Each player rolls two dices and moves according to dices' sum. If two dice values are equal, then the player will roll dice again.
7. After moving step, if the player is on the tax square, he/she pay determined tax value. If player is on the property square,transport square or utility square, he/she will roll a dice, if sum of dices is greater than the threshold value, this square was not taken by another player before and the player has enough money to buy this square, the player will be the owner of the square.
8. If player is on the square which has owner, he/she will pay fine to the owner of the square.
9. If a player pass from the go square, he/she will take pass go money.
10. If player is on the community chest square, he/she has to draw a card from community chest cards.
11. If player is on the chance square, he/she has to draw a card from chance cards.
12. If player has all colors and has enough money to build a house to a square, he/she will build a house.
13. If player has 4 houses in the same square, houses will transform into a hotel. 4 houses counts as 1 hotel. But there is a threshold value for build a hotel. Player has to roll a dice.
14. Each player applies same steps for their turns.
15. If a player does not have any money, he/she will lose the game.

PRELIMINARY ESTIMATES

Activity	Person-Hours
Project design	3
Individual use case development (3 per use case)	45
	48 Total Hours(per person)