

REQUIREMENT ANALYSIS DOCUMENT

Requirement Specification

Vision

Monopoly is a board game that represents business men and their properties including their balances. The number of players must be between 2 and 8. In the game, players rolling two six-sided dices to move around the board to buying and trading properties, and developing them with houses and hotels.

The main object of players is to own as much property and to be the richest person. Any bankrupt player is disqualified from the game. The last remaining player wins the game.

Scope

Monopoly game will provide

- 40 squares that includes jail, go to jail, taxes, properties, utilities, community squares, card squares and start square.
- At the beginning of the a certain amount of money is given to the players.
- Players are moving by tossing dices. There can be two or more dices.
 - If a player comes to a property square, utility square or a community square (in short, purchasable square), he has two option: buy or pay rent.
 - If the land has no owner, the player may buy it. The buying option is based on the number that generated randomly (between 1 and 100). If the number is greater than 80, he buys.
 - If the land has an owner, the player pays the that land's rent to the owner.
 - If the owner is itself, player tries to build property only if it is property square.
 - If the player has set of that color, he/she can build a house. The difference between the number houses at different squares which has the same color cannot be greater than one.

- If a player wants to build a hotel, the number of houses at each square which has the same color has to have maximum number of houses or he/she have to have hotel.
- All the information about property, utility and community squares is given via a json file.
- If a player comes to the tax square, he/she pays tax. If the tax amount is less than 20% of the player's money, he/she will pay certain amount of tax. Else, the player will pay 20% of his/her money as tax.
- If a player passes from the start square, he/she receives a certain amount of money.
- If a player comes to the card square(chance or community chest), he will do the action what is written in the card.
- If the player rolls double dice, he/she rolls again. If he/she rolls double three times in a row, he is put in the jail.
- If a player comes to the go to jail square, he is put in the jail. If a player comes to the jail square, he just visits.
- If a player is in jail, there is two options to get out from the jail: either he will roll double dice when the turn comes to him or he will wait 3 cycles. And at the fourth cycle, he can play.
- If a player's money becomes less than or equal to the 0, firstly he/she tries to sell his/her community square properties, then utility squares, then hotels, then houses, at last property squares to avoid bankrupt. If this is not enough, the player bankrupts.
- The game continues until 1 player remains. The last remaining player who is not bankrupt wins the game.

System Constraints

GUI part is not included. The required information messages are displayed on the console. To be able to run the Monopoly application JDK must be installed.

Stakeholders

Murat Can Ganiz – Customer

Ahmet Faruk Çolak - Project Manager, Analyst/Programmer

Evrin Şahin - Project Manager, Analyst/Programmer
Furkan Kuse - Project Manager, Analyst/Programmer
Murat Şenol - Project Manager, Analyst/Programmer

Glossary of Terms

- Die: The object which is used to get two random number between 1-6.
- Board: Where the game is played. It has 40 squares on it.
- Jail: The square that prevents the player from moving.
- Go To Jail: The square that caused the player to go to jail.
- Piece: The mascot which represents the player and moves on the board.
- Square: The abstraction for properties etc..
- Tax Square: The square that causes the player to pay a certain amount of money to the bank.
- Start Square: The square where players start the game and receive a certain amount of money for each pass.
- Property Square: The square that serves as a land which can be bought. (In the next iteration, the house or hotel can be laid.)
- Utility Square: The square that serves as a land which can be bought. (No laying house or hotel, in the next iteration too.)
- Community Square: The square that serves as a land which can be bought. (No laying house or hotel, in the next iteration too.)
- Regular Square: The square that doesn't have a specific property.

Use Case

User runs the application

- At the beginning, the program takes inputs from a txt file.
- After that, the board is set with inputs from the json file.
- Every player tosses a dice to decide the playing order.
- Each player plays sequentially based on the dices he/she tosses and moves on the board.

- Based on the square type that player went, he/she does action. This action may be either buying, building properties, paying rent, going to jail, trying to get out from the jail or paying tax.
- A cycle is completed when all the players are played. They play in same order in the next cycle.
- If a player loses his/her all money, he/she will be bankrupt and disqualified from the game.