

C Programming Language

#Project - 8

The Monopoly Game with Linked List

In this project, you are going to enhance the Monopoly game that you implemented in the previous project. The following features will be added:

- Playing Against Computer
- Board Implementation
- Fortune Cards

Gameplay Rules for Computer:

(Unless it is told, actions are the same as user actions defined in the previous project.)

- When played against the computer, it rolls a dice just like a user. Dice rolling result for the computer must be printed as "Computer rolled the dice: N".
- If computer arrives at an unowned property, it decides what to do based on the followings:
 - If the price of the property is below the average cost of all properties, then computer must buy the property.
 - Otherwise, the computer rolls the dice again. If the outcome is between 1 and 3, then the computer must buy the property. If the roll is between 4 and 6, the computer skips its turn.
- If the computer lands on a property it owns, it may construct up to 3 houses on that property. The number of houses it can built depends on the number of properties it owns:
 - If the computer owns 1/3 of all the properties, it rolls a dice. If the result is between 1 and 3, then the computer constructs a house. Otherwise, it skips the current turn.
 - If computer does not have 1/3 of all his properties, it skips its turn.
- When computer does not have enough money to pay its rent/tax, then the bank asks it to sell some of its properties. The computer must sell starting with the highest priced property till it pays off its dept.
- Player_type for computer is "cap". Update your implementation accordingly.

Board Implementation:

- You must convert your array-based board implementation to a linked list.
- There are 4 more blocks added to the board. The total number of blocks on the board now is 24.

Fortune Cards:

- Whenever a player lands on a fortune card block, player draws a card from fortune card deck (you randomly pick a fortune card). It carries out the action the card says.
- Location of fortune card blocks on board are defined in the blocks.xlsx file.
- Block type is “fortune”. You must update your block_type enumeration implementation accordingly.
- Define a struct with name “fortune_card”. Rest of the implementation is up to you.
- Fortune cards are defined below.

Card No	Fortune Card Name	Explanation
1	Free House	Build a house on one of your properties for free.
2	Time Travel	Roll a dice. If result is [1-3], move forward by 2 blocks. Else, move backward by 2 blocks.
3	Garnishment	Pay 5.000 to the bank.
4	Generosity	Give 10.000 to the opponent.
5	Treasure Hunter	Take 20.000 from the bank.