Project : Monopoly Game

# 1. TEAM:

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# 2. Topic and scope:

* This project is a term project for PROG8140 C# programming course's capstone project.
* This project is simulating Monopoly game, but it will be customized to finish within two week's project

**Rules:**

* Initially, each player has $10,000
* Each Player will get $1,000 for each turn
* If player decide to buy a square, he should pay $2,000
* If another player place the square, which already bought by another player, he should pay $500
* If player landed on Income Tax Cell, he will pay min($2000, 10% of his property value)
* If user landed on GotoJail Cell, he will move to Jail cell and will be skipped at the next turn
* If user landed on Lot Cell, he will do nothing, i.e no operation.
* If user landed on Jail Cell, he will be skipped.

# 3. Users:

* This software can be used anyone who likes playing monopoly game or wants to learn the game rule.
* However, due to lack of development time, this project will simulate the monopoly game not like real game. In other words, if user enter number of player, it will simulate the game until there is a winner.

# 4. Preliminary Design:

## GameMaster

* This class will perform the overall control of monopoly game

## Die

* To simulate real die, 2 die objects will be generated.
* Each object will generate random number between 1 and 6

## Player

* Player is be instantiated according to the input from user
* Player object will be generated between 2 and 8
* This class has cell
* Cell also has one player
* Gameboard will get or set information of player with this class

## Cell

* For simplicity, each cell has no property at 1st iteration
* Each cell can be bought with fixed $2000, if that cell is not sold (Can be changed)
* If cell is occupied by another player, the payer should pay $500(Can be changed)
* Player class will get or set cell information with this class

## GameBoard

* Gameboard has 40 Cells which is already defined real Monopoly game.
* Game Master will get information of Cell through Gameboard



# 5. Test Plan:

Due to lack of time and skills, this software will be tested with pre-defined test cases and check the output for each step and random test.

## 5-1 Test cases: (Test Category, Description, Expected result)

### 1. Number of player

* User enter number of player 1, check the output
* The output shows the error message

### 2. Number of player

* + User enter number of player 9, check the output
  + the output shows the error message

### 3. Number of player

* + User enter number of player 2, check the output
  + The game will start, and shows user's name, rolling result of two dices, and piece movement, and location of piece.

### 4. Initial State

* + Check all player has initial cash of $10,000

### 5. Changing Cash State

* + If a player turns all cells, the player’s cash will increase by $1,000

### 6. Buy Cell

* + If a Player buy the Cell, the player’s cash will decrease by $2,000

### 7. Pay Rent

* + If a player positioned the cell, which is owned by another player, the retn player will pay to owner player by $500, which will decrease the rent player’s cash by $500 and increase the owner player’s cash by $500.

8. Cell Property

* + If a player wants to sell the cell which he owns, he can sell with value of $1500, which will increase the player’s cash by $1500 and the cell will be vacant.