MONOPOLY

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OUTLINE

1. Game and Rules
2. Model Part
3. Viewer/Controller Part (GUI)
4. Demonstration
5. Future Work

Monopoly is a multi-player economics-themed board game. Each player rolls dice to move around, buy and trade properties, etc.

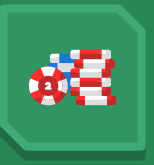
Rules:

- Number of Players: 2-6
- The game starts by each of the player rolling the dice
- Moving according to the number on the rolled dice

CLASSES

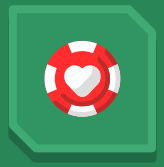
Core

Main



Player

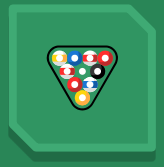
Chance



GoToJail

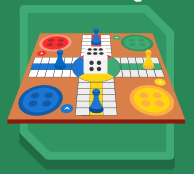
Location

NotValidNumber ofPlayers



Purchasable Location

Monopoly



OTHER CLASSES

Player

-int count
-String name
-int id
-int position
-int money
-int needToSetInJail
-int diceValue
-int numberofProperties

+Player(String):
+Player(Player):
+toString(): String
+getPosition(): int
+getName(): String
+getMoney(): int
+getNumberofProperties(): int
+getId(): int
+getDiceValue(): int
+setDiceValue(): void
+addNumberofProperties(): void
+pay(int): boolean
+take(int): void
+clone(): Player
+equals(Object): boolean
+move(int) :int
+setInJail(boolean): void
+isInJail(): boolean

Monopoly

+final int Number_Of_Square
-Location[] board
-Player[] players
-int numberofPlayers
-int turn

+Monopoly(int, String[]):
+getPlayerAt(int): Player
+getNumberofPlayer(): int
+getLocation(int): Location
+hasPositionAt(int, int): boolean
-playerGenerator(int, String[]): void
-numberofPlayersCheck(int,int):
Void
-boardGenerator(): void
+dice(): int
+toString(): String
+getTurn(): int
+setNextTurn():void

LOCATION CLASS

Location

-int place
-String name
-String[] applicableActions

+Location(int, String, String[]):
+Location(int, String):
+ setApplicableActions(String[]): void
+isActionsAvailable(): boolean
+getApplicableActions() String[]
+getCountOfApplicableActions(): int
-applicableActionsGenerator(String[]): String[]
+getPlace(): int
+getName(): String
+ toString(): String
+ clone(): Location
+doAction(String,Player): String

PurchasableLocation

-Player owner
-int price
-int rent
-int cost
-String message

+PurchasableLocation(String, int,String,int):
+doAction(String, Player): String
+isPurchased(): boolean

GoToJail

+GoToJail(int):
+doAction(String, Player): String

Chance

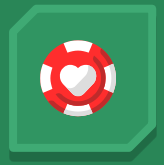
+Chance(int, String[]):
+getApplicableActions(): String[]

VIEWER/CONTROLLER

GUI

MonopolyUi

SquareBoard



Issues that rose during the work

- Connecting part(Transformations)
- Button solution
- Abstraction/encapsulation

```
private void window(){
    Player player = game.getPlayerAt(game.getTurn());
    Location location = game.getLocationAt(player.getPosition());
    String[] options =  location.getApplicableActions();
```

Polymorphism

```
    String outputMassage = location.doAction(options[n], player);
```

THANK YOU!