



# Marmara University

*Faculty of Engineering*  
*Department of Computer Engineering*

**Fall 2017 - CSE3063 Object Oriented Software Design**

Bilgehan Nal (150114038), Yusuf Kamil Ak (150116827), Serdar Sayın (150115068)

## **Monopoly (City Edition) Project**

### **First Iteration Report**

#### **Introduction**

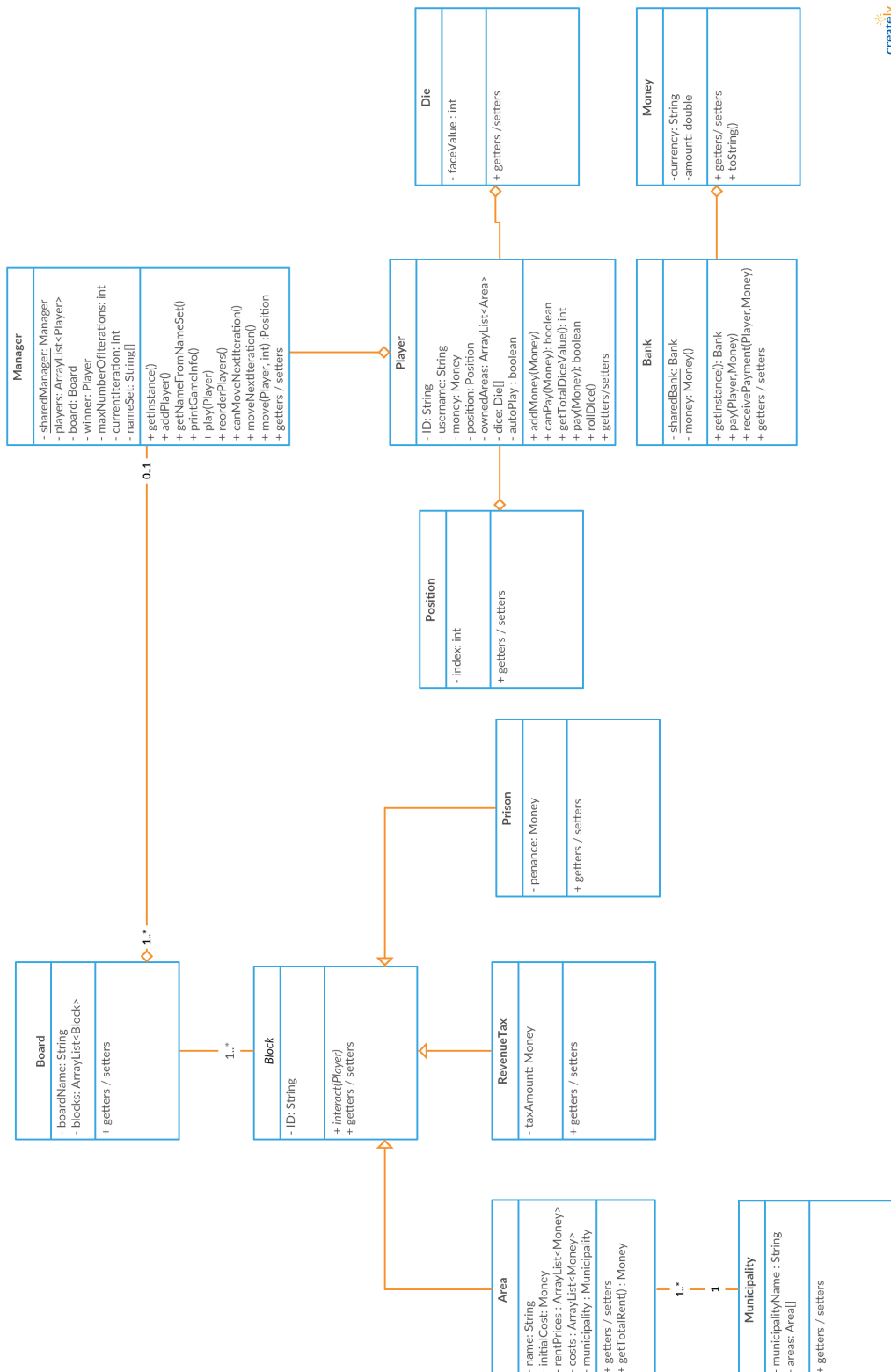
Monopoly is a strategy game which players aim to be the richest one and have other players bankrupt at the end of the game. It's played with at least 2 players and at most 8 players. People are walking on a board which consists of several types of blocks. Those blocks can be an area which can be bought by people, a revenue tax block where you need to pay 10% of your current money when you step on or a prison that you will be punished for two turns of game.

When you step on a area block, if that area is owned by another player then you have to pay rent to its owner. You can buy that area for a specified amount of money. If this area is owned by another player, then price of the area to buy will increase.

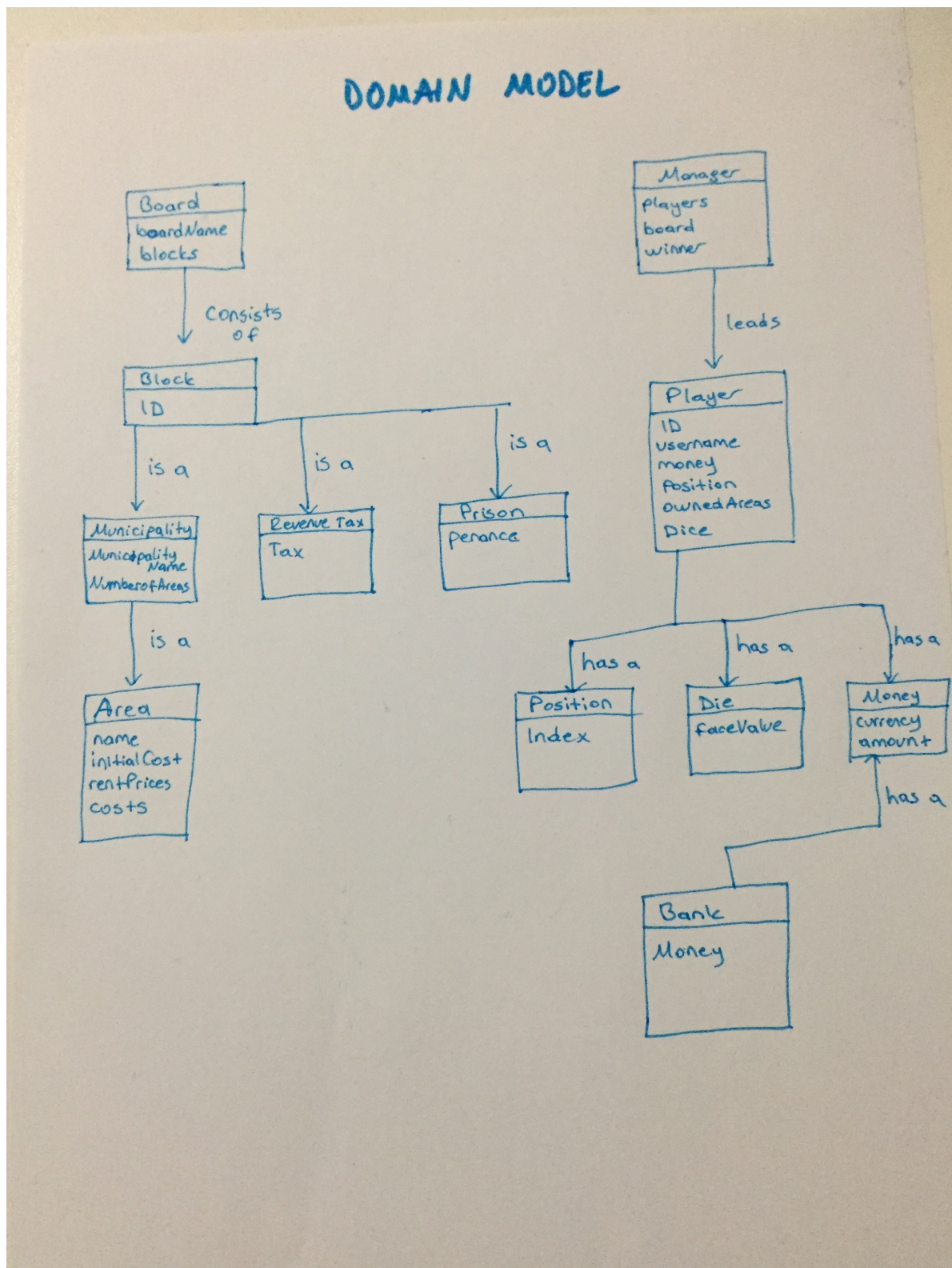
Game continues for a number of iterations where each iteration means one turn of all payers, if specified. Otherwise, game will continue until everyone except one bankrupt and the remaining player will be the winner.

# UML Class Diagram

Original size of UML diagram can be found in our Github private repository.



## Domain Model



## Application Flow & Requirements Analysis

Please remind that requirements include only first iteration of the entire project.

- User is asked to prompt username.
- User is asked how many players are going to attend to the game.
- User is asked to determine whether s/he is intend to play with iteration or not.
- User needs to prompt number of iterations.
- If the user is on an area, user will be asked if s/he will buy this area or not. If area is owned by another user, then user will have to pay a rent. If the area is already user's, then you can also build some building (house, shop, skyscrapers for different amount of costs).
- If the user is on revenue tax, then s/he will have to pay a tax if s/he has a shop.
- If the user is on prison, then user will be punished for 2 turns. User still can attend to auction, buy/sell areas and buildings.
- At the end of game (Iteration is reached to max number) all users will be ordered in console with their money status.

## Expected Output

Welcome to Monopoly!

Who is this?

- Serdar

How many players would you like to play with?

ENTER PLAYER NUMBER EXCEPT YOU (1..7) :

- 3

Would you like to determine a maximum number of iterations?

If so, the richest player will win the game at the end of those iterations. (y / n)

- y

ENTER NUMBER OF ITERATION :

- 40

Let's play!

These are dice of other players:

John Doe: 4,5

Jane Doe: 1,1

Hugo: 2,3

Press any button to roll your dice:

- §

Serdar: 3,4

John Doe will begin!

John Doe has moved 9 blocks. Now, he is in big trouble. He will be waiting for 2 turns at jail.

Hugo has moved 5 blocks. He is in Bağlarbaşı. He decided to buy Bağlarbaşı for \$1,2M.

You have moved 7 blocks.

Oopss! You're at Revenue Tax. You have to pay %10 of your money.

Your debt: \$286K

Press any button to pay.

- ö

John Doe is in JAIL! He will not be able to move 1 more turn.

Jane Doe has moved 6 blocks. He has paid \$400K for rent to Hugo at Bağcılar.

Hugo has moved 4 blocks. He has decided to buy Kadıköy from John Doe for \$1,8M.

You have moved 12 blocks.

Hey, you're on your lucky day! You have a luck card. (will be added in next iteration)

-- END OF ITERATIONS --

Iteration Limit Exceeded!

Hugo has won the game with \$38M.

#2: Jane Doe with \$20M

#3: Serdar with \$19M

#4: John Doe with \$-12M

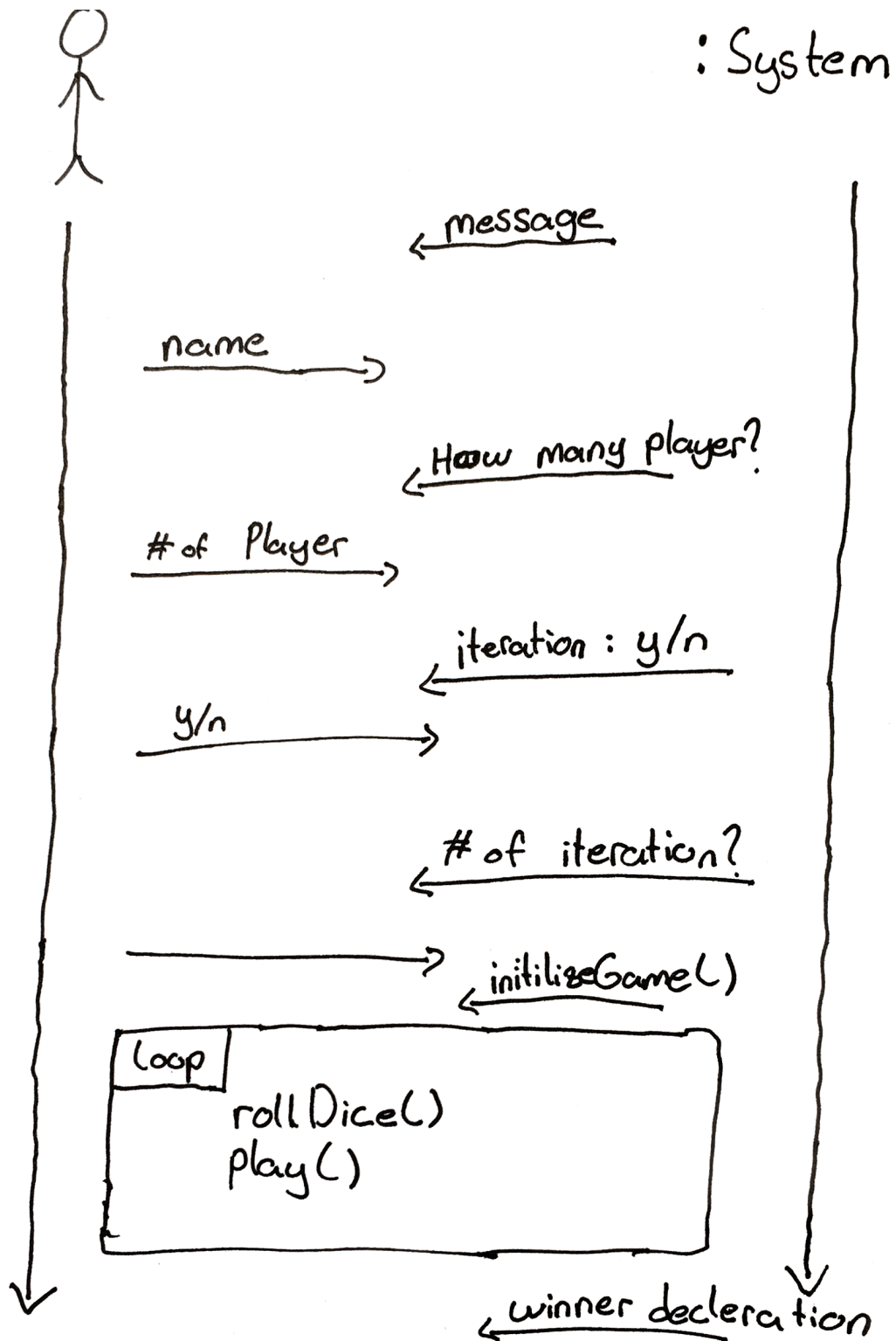
# Timechart Work Report

Original size of UML diagram can be found in our Github private repository.

ISSUES , GROUP BY ASSIGNEE		WORK TYPE	TIME ESTIMATED	TIME SPENT
<b>Unassigned</b>			<b>5h</b>	<b>3h45m</b>
MP-23	Program Flow before the iteration loop will be implemented all together.	Development	4h	2h
MP-35	UML diagram will be simplified according to the needs of first iteration	Documentation	—	15m
MP-20	UML will be updated. [all together]	Development	1h	1h30m
<b>bilgehanl.03</b>				<b>2h50m</b>
MP-12	Area, RevenueTax will be initialized.	Development	—	10m
MP-10	Board and Block will be implemented.	Development	—	10m
MP-36	Iteration part of main will be implemented	Development	—	1h15m
MP-11	Municipality, Prison classes will be initialized.	Development	—	15m
MP-7	Project should be divided into three parts	Development	—	15m
MP-8	Project should be initialized and distributed to all developers.	Development	—	30m
MP-22	Slack integration for GitHub	Documentation	—	15m
<b>srdrsayin</b>			<b>2h10m</b>	<b>2h45m</b>
MP-16	Bank will be initialized [Pair Programming with Yusuf]	Development	15m	15m
MP-27	Changes in prior classes in UML will be applied in implementation [Pair programming with Serdar]	Development	45m	30m
MP-26	Domain Model will be updated.	Documentation	—	20m
MP-14	Manager will be initialized. [Pair Programming with Yusuf]	Development	15m	15m
MP-24	Pay and ReceivePayment methods are implemented for Player and Bank classes.	Development	15m	20m
MP-19	Player array will be arranged by order of first rolls.	Development	30m	30m
MP-18	Position class will be initialised. [Pair Programming with Yusuf]	Development	10m	5m
MP-2	Software Sequence Diagram should be drawn	Development	—	30m
<b>ykamalak</b>			<b>1h5m</b>	<b>2h50m</b>
MP-29	Bank class will be updated	Development	—	5m
MP-17	Bitbucket slack integration will be held.	Documentation	—	15m
MP-6	Exact output of the program should be determined on a timeline. [PAIR PROGRAMMING WITH SERDAR]	Documentation	30m	45m
MP-13	Game class will be initialized. [Pair Programming with Serdar]	Development	20m	15m
MP-28	New classes at changes of UML will be implemented.	Development	—	15m
MP-15	Player will be initialized. [Pair Programming with Serdar]	Development	15m	10m
MP-33	Report of First Iteration will be received from Youtrack	Documentation	—	10m
MP-9	Sourcetree, bitbucket, sourceControl training will be held.	Documentation	—	30m
MP-32	UML will be updated again.	Documentation	—	10m
		Development		15m
			Total time spent: 12h10m out of 8h15m	



## System Sequence Diagram





## Conclusion

Latest version of our project is committed to the private repository of the project. We continue to develop it by extending requirements and enhancing functionality of the entire project. In this period, we are using professional tools such as YouTrack Agile by JetBrains, Sourcetree and Github for version control. We also use Slack to communicate each other and get used to it.

Developing such a project let us improve our software designing and implementation capabilities, gets us prepared to the industry.