



Marmara University

Faculty of Engineering

Department of Computer Engineering

Fall 2017 - CSE3063 Object Oriented Software Design

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Monopoly (City Edition) Project

Final Iteration Report

Introduction

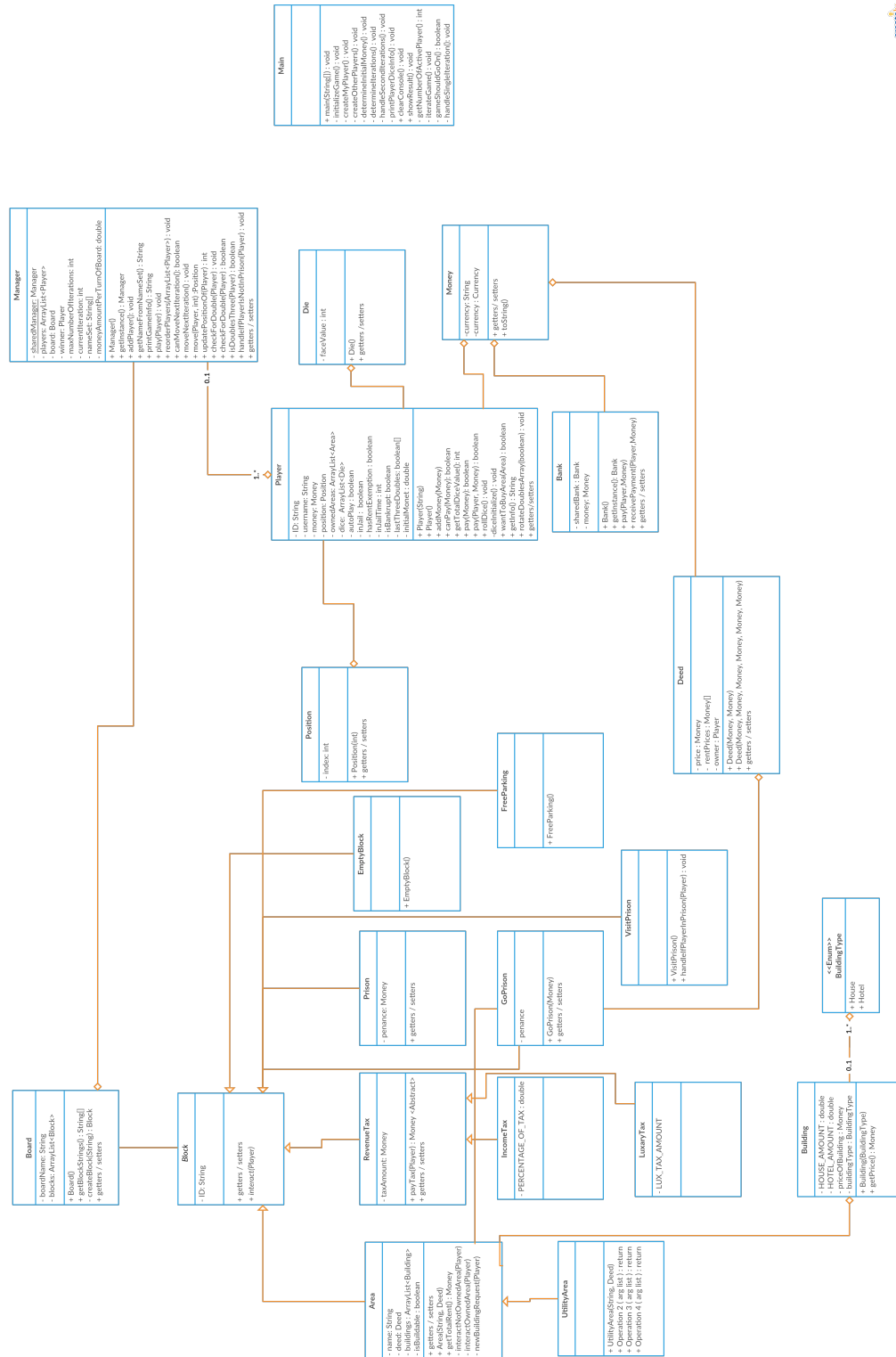
Monopoly is a strategy game which players aim to be the richest one and have other players bankrupt at the end of the game. It's played with at least 2 players and at most 8 players. People are walking on a board which consists of several types of blocks. Those blocks can be an area which can be bought 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.

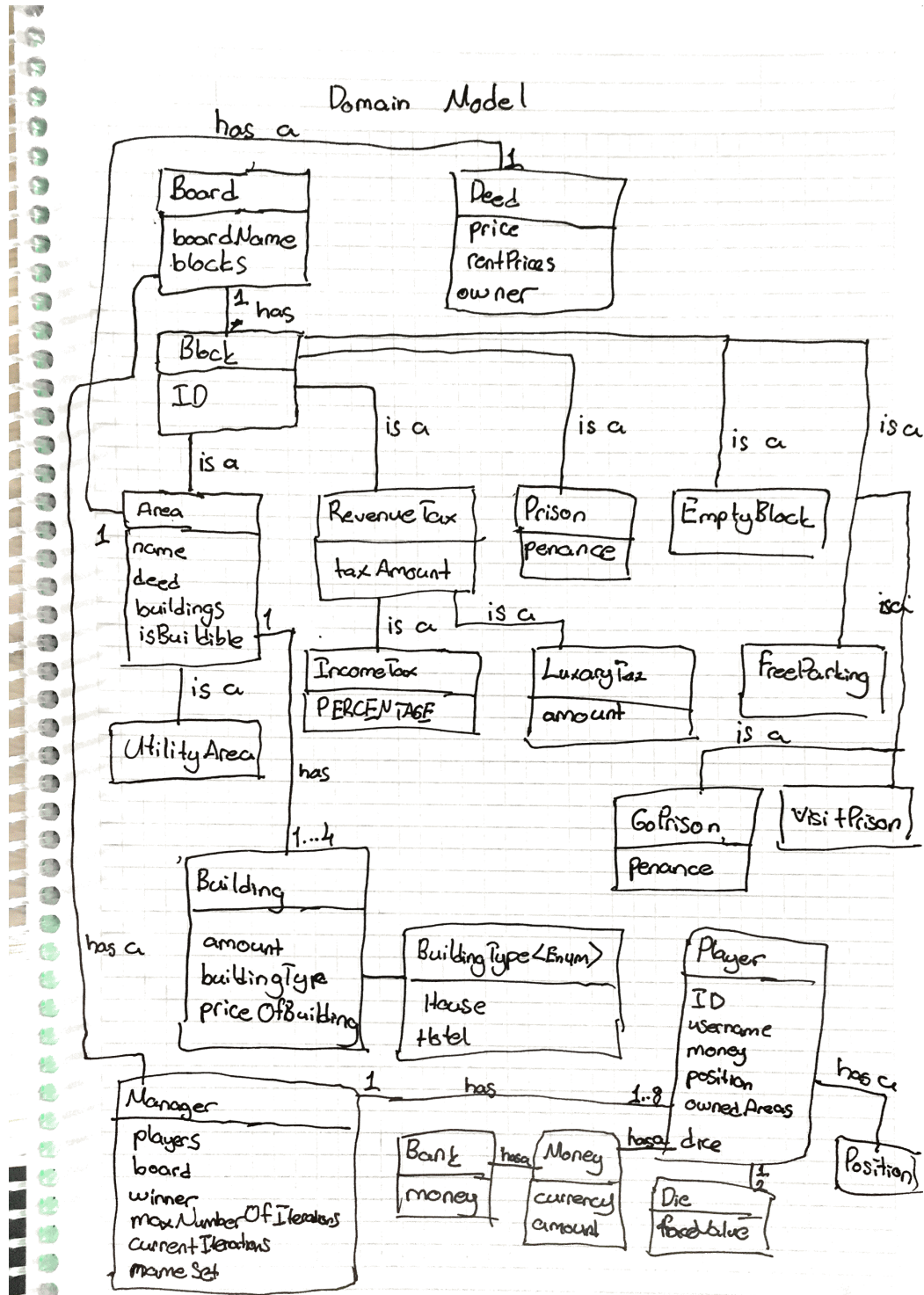
Game continues for a number of iterations where each iteration means one turn of all payers, if specified. Otherwise, game will continue until everyone except one bankrupt and the remaining player will be the winner.

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 second iteration of the entire project.

- User is asked to insert username
- User is asked how many players are going to attend to the game.
- User is asked to determine whether s/he intend to play with iteration or not.
- If user chooses the no iteration way, game will last till the last player left in the game.
- User is asked to prompt initial money (before the input our initial money is 200 000
- In order to determine the first player and others order, user is asked to press any button to roll dice. Afterwards, order will be announced from command line.
- Depending on the block type, players will be faced with some conditions. These conditions are:
 - If player lands on GoPrison block, without any interaction user will be wait for others to finish their process.
 - If player lands on VisitPrison block, player needs to pay to penance to be able to avoid from prison. If user does not have enough money, user

will be derailed from playing 3 rounds. In addition, player may ends up in prison if s/he gets doubles three times in a row.

- If player lands on incomeTax bloc, player needs to pay ten percent of his/her current money to Bank.

- If player lands on luxuryTax block, player needs to pay predefined amount of money to Bank.

- If player lands on any area has no owner, player needs to decide whether s/he is willing to purchase this area or not. If player decides to purchase the area player needs to pay the price to the bank and player gets deed for this area. If the are has an owner, our player needs to pay the rentPrice unless s/he has rentExemption.

- RentExemption can be gained from freeParking block.

- There are 2 types of utility blocks such as WaterUtility, ElectricUtility,

- These blocks' price is 150 and when a player lands on these blocks, s/he needs to pay 10 times the face values.

- Other type of block is RailRoad which has 200 price.

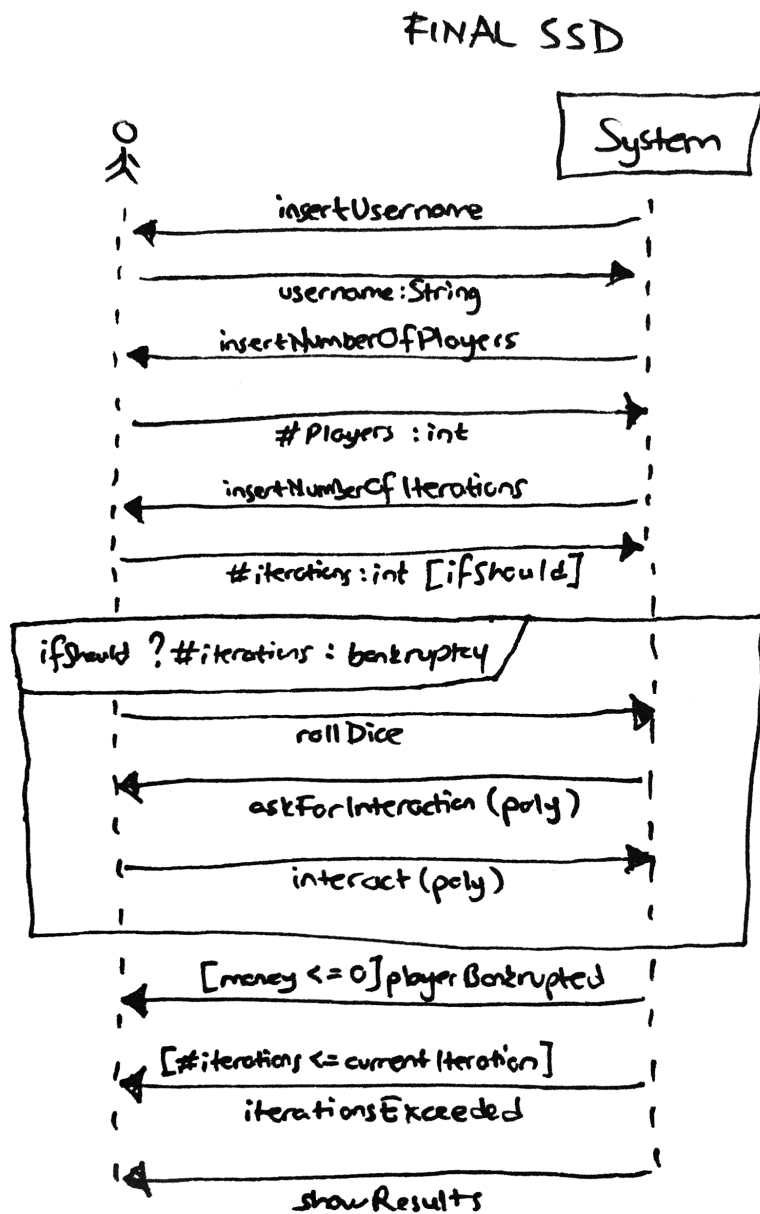
- If the player lands on RailRoad block , player needs to pay the dice's face value's 5 times plus 25 to the bank

- .At the end of the game - it can be max number of iteration or everyone goes to bankrupt except one last person standings will be announced from command line and game will end.

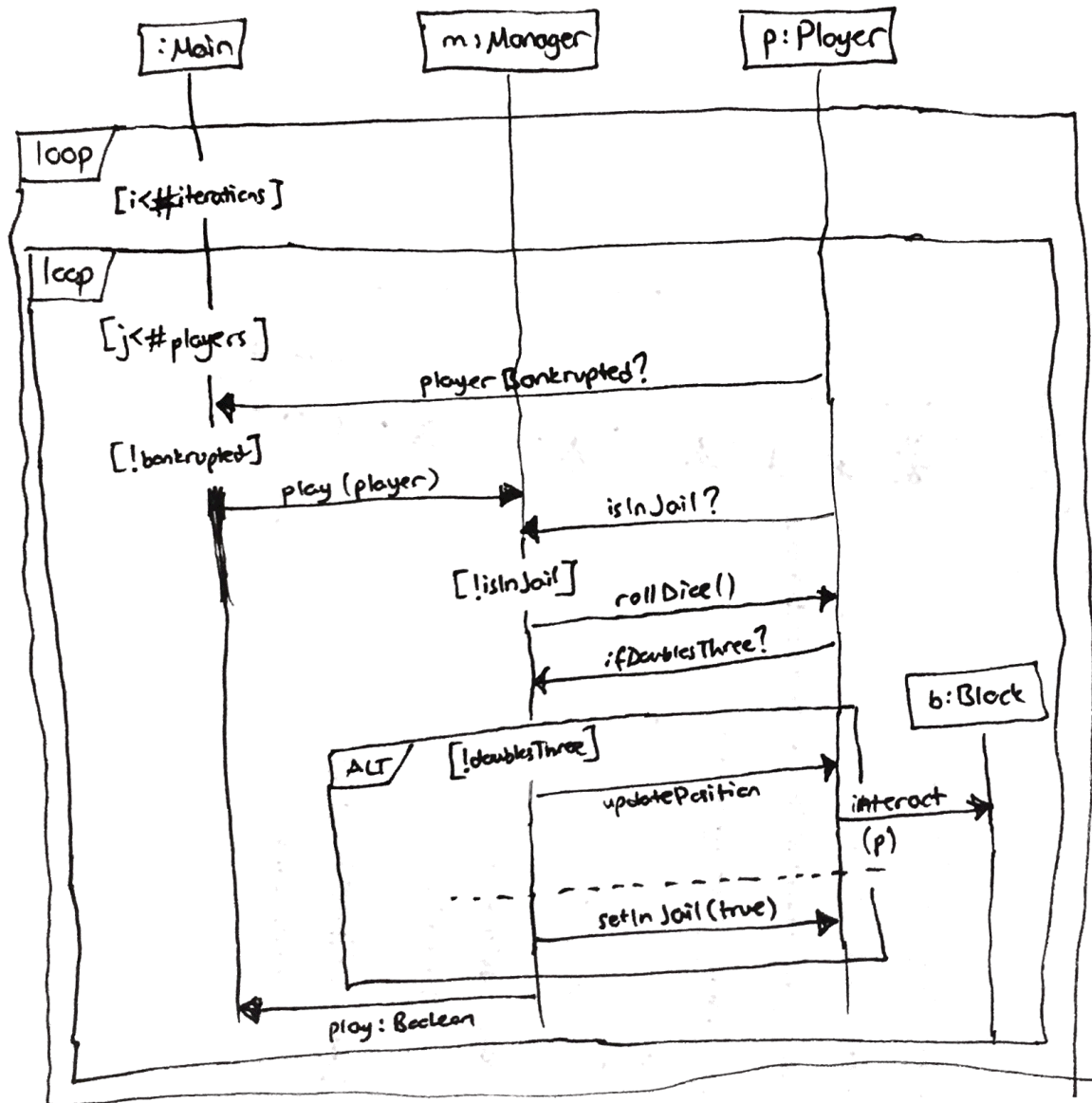
- Every user can build buildings on the area who owns.

- First of all user can build a house. After s/he builds one home to every area that s/he owns, s/he can build one more house.
- Maximum three houses and one hotel can be built on an area.

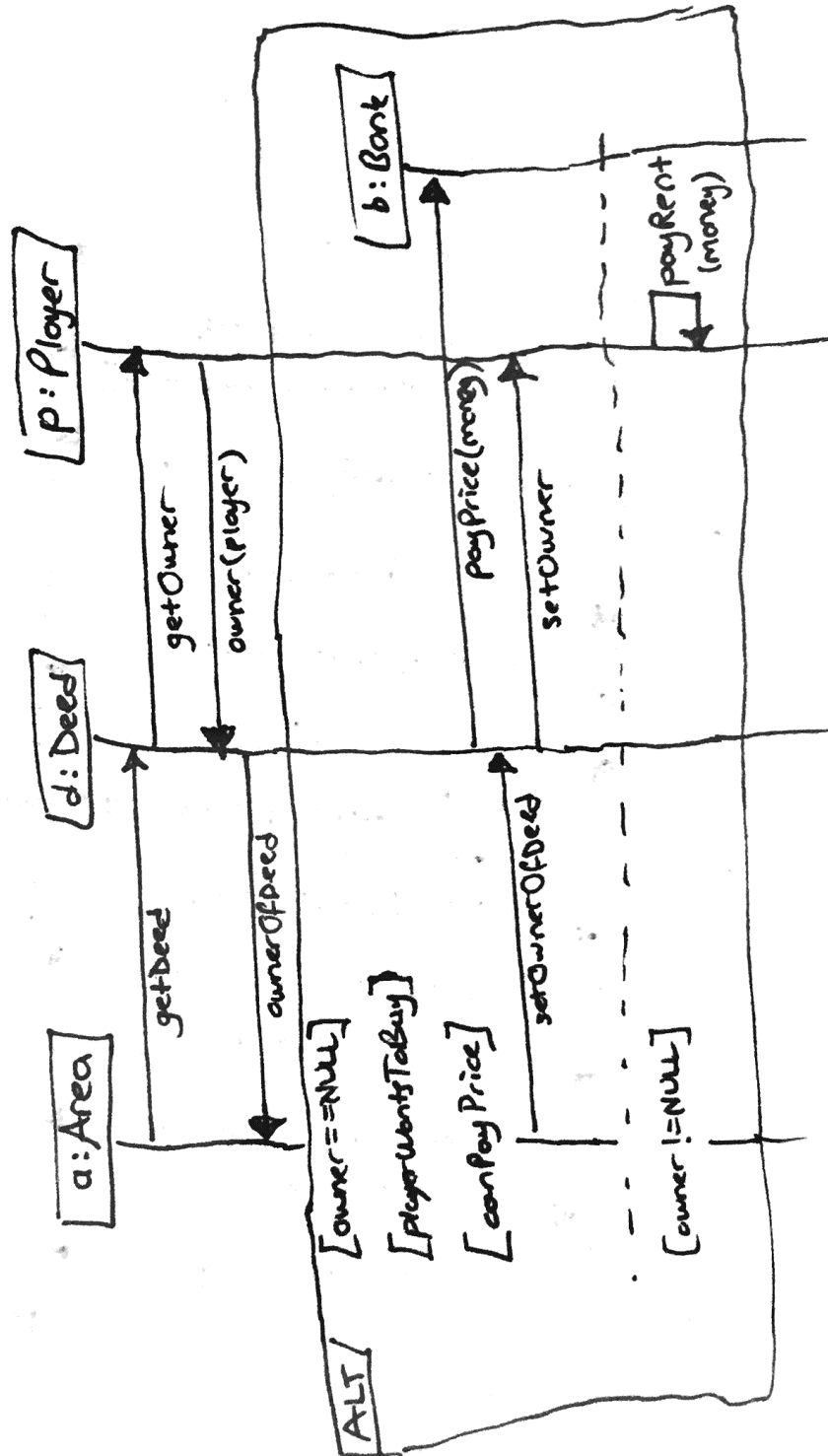
System Sequence Diagram



Sequence Diagrams



Interact of Area



Timechart Work Report

Original size of timechart report can be found in our Github private repository.

ISSUES , GROUP BY WORK AUTHOR		TIME ESTIMATED	TIME SPENT
Bilgehan Nal (bilgehanl.03)			15h25m
MP-58	Bankruptchy Control in Money Issues	1h	45m
MP-55	Blocks will be created using txt file	1h	45m
MP-78	Buildings will be implemented.	4h	4h45m
MP-53	Dice array will be converted to ArrayList	5m	5m
MP-45	Luxury Tax Block will be implemented	1h	45m
MP-60	New areas will be added in board.txt	30m	30m
MP-59	Not enough money control to buy an area	45m	15m
MP-44	Renting System will be implemented	2h	2h45m
MP-68	Tax System will be implemented	3h	2h45m
MP-38	UML will be updated	45m	45m
MP-70	UML will be updated to its final version.	2h	1h
MP-66	winner will be determined	5m	5m
MP-64	İflas etme olayı çözülmeli	15m	15m
Serdar Sayın (srdrsayın)			8h15m
MP-80	Initial money of all players will be determined by user input.	1h	45m
MP-81	Output file will be updated.	1h	2h
MP-40	Requirement Analysis will be updated	1h	1h
MP-71	Requirement Analysis will be updated to its final version.	1h	30m
MP-67	Unit Tests will be implemented	4h	4h
Yusuf Kamil Ak (ykamilak)			7h2m
MP-57	Any minor bug found until the delivery of iteration will be fixed	—	45m
MP-51	Any other logic relevant to Bank will be implemented.	—	30m
MP-74	Beginning Block's name will be updated.	1m	1m
MP-49	Currency will be determined as enumeration	15m	30m
MP-77	Decision of buying areas of computer will be determined according to the dice thrown.	20m	25m
MP-48	Distributing money to players logic will be implemented	30m	1m
MP-73	Ending rule of the game will be changed.	15m	2m
MP-46	Free parking system will be implemented	30m	10m
MP-47	Initial money logic of Bank will be implemented	1h	30m
MP-76	Municipality superclass will be removed from the project.	10m	2m
MP-61	Prison Position Bug will be fixed	—	20m
MP-65	Rapor yazılacak, timechart çıkarılacak	—	1m
MP-30	Readme.md file will be edited.	—	15m
MP-75	Report with timecharts and detailed techinal descriptions will be prepared.	1h	30m
MP-69	SSD and Sequence Diagrams will be updated to its final version.	1h	1h
MP-62	Sahibi hapiste olan playera kira ödenmeyecek	—	20m
MP-84	Some minor bugs will be fixed	—	30m
MP-50	Starting block will be implemented.	15m	10m
MP-72	Utility and Railroad classes will be implemented.	30m	1h

Total time spent: 30h42m
out of 30h11m

Conclusion

Latest version of our project as Monopoly City Edition is committed to the private repository of the project. Since we have developed a different edition of the game, we have made some arrangements about prices or amounts due to prevent inconsistencies between the original edition and city edition. 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.