

GIT Department of Computer Engineering
CSE 222/505 - Spring 2022
Homework # Report

Ufukcan Erdem
1901042686

1. SYSTEM REQUIREMENTS

1.1 Non-functional Requirements

- Java as a programming language.
- The system runs offline.

1.2 Functional Requirements

- A method adds an element to array of objects.
- A method deletes an element from array of objects.
- A method search a specific value from array of objects

1.3 User Requirements

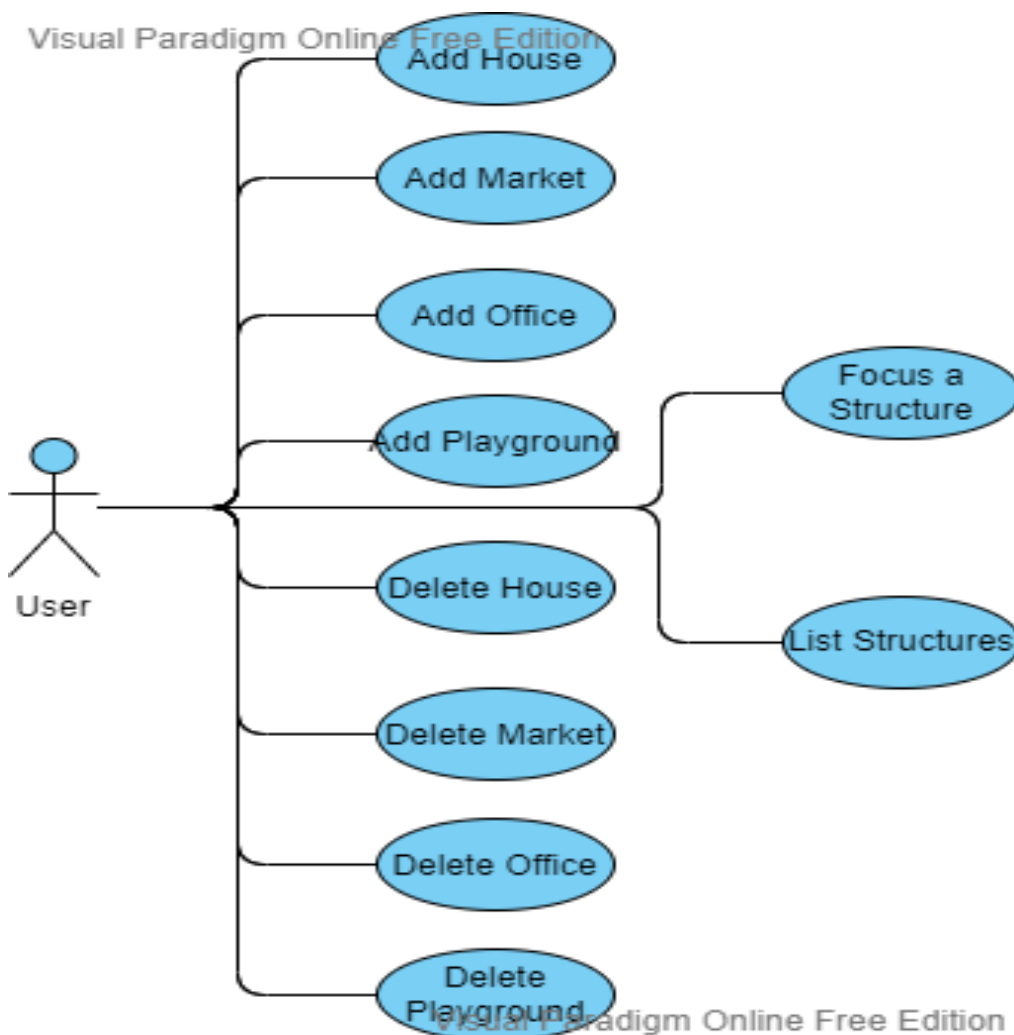
- User can add a house, market or office.
- User can add a playground.
- User can delete any type of a building.
- User can search and focus a structure on a specific position.

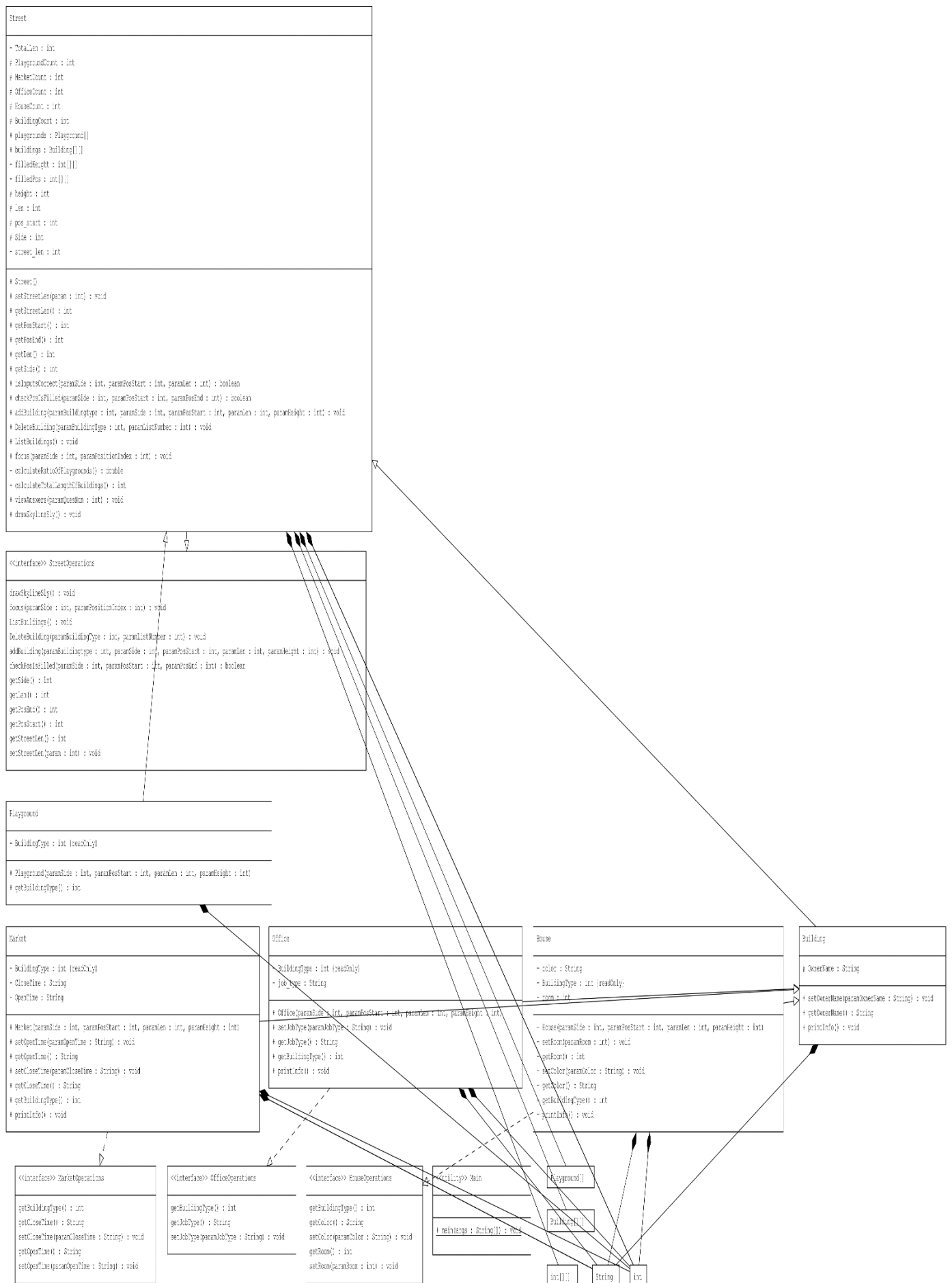
1.4 System requirements

- Checks if the array of objects is empty.

2. USE CASE AND CLASS DIAGRAMS

I ALSO ADDED PNG VERSIONS OF THIS DIAGRAMS SEPARATELY.





3. PROBLEM SOLUTION APPROACH

The problem is to create a street, then add buildings on them and also can delete after that structures. So my approach to this situation is to create a Street class which is a superclass. And then other subclasses according to rules like Street->Building->House, Office, Market or Street->Playground. So basically I followed this way and tried to do everything right.

4. TEST CASES

In the start of driver, I tried to add some structures (buildings or playgrounds) to free positions and unfree positions.

There is an example piece of code:

```
31 s1.addBuilding(0,0,9,3,3);
32 ((House)s1.buildings[0][s1.HouseCount-1]).setColor("pink");
33
34 s1.addBuilding(3,0,7,5,11); //INCORRECT INPUT, MUST FAIL AND SHOW ERROR MESSAGE!
35 //THERE IS A PLAYGROUND TRY TO ADD BETWEEN 7 TO 12 IN LEFT SIDE OF THE STREET.
36 //WHILE THERE IS ALREADY A STRUCTURE
37 //IT MUST NOT BE IN THE LIST
```

Then I tried to give some wrong inputs like 'paramSide=3' which is must be invalid because side is 0 when it's left and 1 when it's right.

There is an example piece of code:

```
48 ((Market)s1.buildings[2][s1.MarketCount-1]).setCloseTime( 21.00 );
49
50 s1.addBuilding(1,1,52,3,3);
51 ((Office)s1.buildings[1][s1.OfficeCount-1]).setJobType("Technology");
52
53 s1.addBuilding(1,3,133,11,3); //TRIES TO ADD A STRUCTURE TO SIDE 3 WHICH IS NOT VALID,MUST FAIL
54
```

I also check a lot of parameter when creating structures like invalid parameter or input etc.

And checked User Inputs too.

5. RUNNING AND RESULTS

I ALSO ADDED ALL THIS SCREENSHOTS IN SEPARATE FOLDER.

```
ufuk@ufuk-Lenovo-Y520-15IKBN: ~/222hw1/CSE222-HW1-1901042686/src$ java Main
House Added.
House Added.
House Added.
Position(s) is already filled or Wrong Input(s)! ERROR!!!
Office Added.
Playground Added.
Office Added.
Market Added.
Office Added.
Position(s) is already filled or Wrong Input(s)! ERROR!!!
Market Added.

---HOUSES---
1)House color: red
2)House color: blue
3)House color: pink
---OFFICES---
1)Office job type: Bank
2)Office job type: Engineer
3)Office job type: Technology
---MARKETS---
1)Market open/close time: 09.00 21.00
2)Market open/close time: 09.00 21.00
---PLAYGROUNDS---
1)Playground length: 30

House is deleted.

---HOUSES---
1)House color: red
2)House color: pink
---OFFICES---
1)Office job type: Bank
2)Office job type: Engineer
3)Office job type: Technology
---MARKETS---
1)Market open/close time: 09.00 21.00
2)Market open/close time: 09.00 21.00
---PLAYGROUNDS---
1)Playground length: 30

Office is deleted.

---HOUSES---
1)House color: red
2)House color: pink
---OFFICES---
1)Office job type: Engineer
2)Office job type: Technology
---MARKETS---
1)Market open/close time: 09.00 21.00
2)Market open/close time: 09.00 21.00
---PLAYGROUNDS---
```

```
ufuk@ufuk-Lenovo-Y520-15IKBN: ~/222hw1/CSE222-HW1-1901042686/src
1)Playground length: 30

Office is deleted.

---HOUSES---
1)House color: red
2)House color: pink
---OFFICES---
1)Office job type: Engineer
2)Office job type: Technology
---MARKETS---
1)Market open/close time: 09.00 21.00
2)Market open/close time: 09.00 21.00
---PLAYGROUNDS---
1)Playground length: 30

Market is deleted.

---HOUSES---
1)House color: red
2)House color: pink
---OFFICES---
1)Office job type: Engineer
2)Office job type: Technology
---MARKETS---
1)Market open/close time: 09.00 21.00
---PLAYGROUNDS---
1)Playground length: 30

---HOUSES---
1)House color: red
2)House color: pink
---OFFICES---
1)Office job type: Engineer
2)Office job type: Technology
---MARKETS---
1)Market open/close time: 09.00 21.00
Playground Added.

---HOUSES---
1)House color: red
2)House color: pink
---OFFICES---
1)Office job type: Engineer
2)Office job type: Technology
---MARKETS---
1)Market open/close time: 09.00 21.00
---PLAYGROUNDS---
1)Playground length: 22

Focused structure is Playground. Start position is -> 211
Focused structure -> Side:0 posStart:9 posEnd:12 height:3 House Room:0 Color:pink

ufuk@ufuk-Lenovo-Y520-15IKBN: ~/222hw1/CSE222-HW1-1901042686/src
---HOUSES---
1)House color: red
2)House color: pink
---OFFICES---
1)Office job type: Engineer
2)Office job type: Technology
---MARKETS---
1)Market open/close time: 09.00 21.00
2)Market open/close time: 09.00 21.00
---PLAYGROUNDS---
1)Playground length: 30

Market is deleted.

---HOUSES---
1)House color: red
2)House color: pink
---OFFICES---
1)Office job type: Engineer
2)Office job type: Technology
---MARKETS---
1)Market open/close time: 09.00 21.00
---PLAYGROUNDS---
1)Playground length: 30

---HOUSES---
1)House color: red
2)House color: pink
---OFFICES---
1)Office job type: Engineer
2)Office job type: Technology
---MARKETS---
1)Market open/close time: 09.00 21.00
Playground Added.

---HOUSES---
1)House color: red
2)House color: pink
---OFFICES---
1)Office job type: Engineer
2)Office job type: Technology
---MARKETS---
1)Market open/close time: 09.00 21.00
---PLAYGROUNDS---
1)Playground length: 22

Focused structure is Playground. Start position is -> 211
Focused structure -> Side:0 posStart:9 posEnd:12 height:3 House Room:0 Color:pink
Press 1 for edit menu, press 2 for viewing menu!
Press 99 for exit the program.
99
ufuk@ufuk-Lenovo-Y520-15IKBN: ~/222hw1/CSE222-HW1-1901042686/src$
```



```

Press 1 for edit menu, press 2 for viewing menu!
Press 99 for exit the program.
2
Press 1 for display the total remaining length of lands on the street.
Press 2 for display the list of buildings on the street.
Press 3 for o display the number and ratio of lenth of playgrounds in the street.
Press 4 for calculate the total length of street occupied by the markets, houses or offices.
Press 5 for display the skyline silhouette of the street.
3
Total Number of Playgrounds is -> 1
Ratio of length of Playgrounds in the street is -> 0.025714285714285714
Press 1 for edit menu, press 2 for viewing menu!
Press 99 for exit the program.
2
Press 1 for display the total remaining length of lands on the street.
Press 2 for display the list of buildings on the street.
Press 3 for o display the number and ratio of lenth of playgrounds in the street.
Press 4 for calculate the total length of street occupied by the markets, houses or offices.
Press 5 for display the skyline silhouette of the street.
4
Total length of street occupied by the markets, houses or offices is -> 13
Press 1 for edit menu, press 2 for viewing menu!
Press 99 for exit the program.
2
Press 1 for display the total remaining length of lands on the street.
Press 2 for display the list of buildings on the street.
Press 3 for o display the number and ratio of lenth of playgrounds in the street.
Press 4 for calculate the total length of street occupied by the markets, houses or offices.
Press 5 for display the skyline silhouette of the street.
8
Undefined!!
Press 1 for edit menu, press 2 for viewing menu!
Press 99 for exit the program.
2
Press 1 for display the total remaining length of lands on the street.
Press 2 for display the list of buildings on the street.
Press 3 for o display the number and ratio of lenth of playgrounds in the street.
Press 4 for calculate the total length of street occupied by the markets, houses or offices.
Press 5 for display the skyline silhouette of the street.
X
Input is incorrect!!!
Undefined!!
Press 1 for edit menu, press 2 for viewing menu!
Press 99 for exit the program.
99
Press 1 for add a building,
Press 2 for delete a building, according to list
2
----HOUSES----
1)House color: red
2)House color: pink
----OFFICES----
1)Office job type: Engineer
2)Office job type: Technology
----MARKETS----
1)Market open/close time: 09.00 21.00
----PLAYGROUNDS----
1)Playground length: 22
2)Playground length: 9

Enter Building Type! (BuildingType=0 is House, BuildingType=1 is Office, BuildingType=2 is Market and BuildingType=3 is Playground).
3
Enter list number of building!
1
----HOUSES----
1)House color: red
2)House color: pink
----OFFICES----
1)Office job type: Engineer
2)Office job type: Technology
----MARKETS----
1)Market open/close time: 09.00 21.00
----PLAYGROUNDS----
1)Playground length: 9
Press 1 for edit menu, press 2 for viewing menu!

```