GTU DEPARTMENT of COMPUTER ENGINEERING

CSE 222/505 – Spring 2022

HOMEWORK #01 Report

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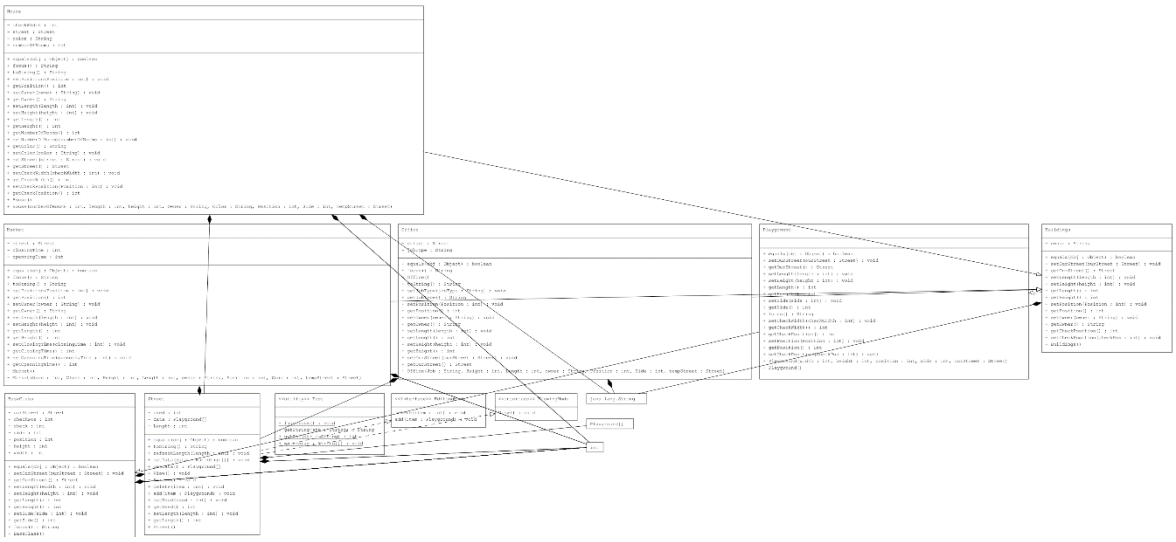
1. System Requirements

First of all, this is a designing and implementing city planning.

Therefore, if we have like a system, there must be a Street to build something. There are some requirements for homework. We can build market,Office,house and playground and these structures can build on a Street or remove from there . Morever, you can view skyline. Therefore we have 2 interfaces one of them is about adding and deleting the other one is about viewing.

USE CLASS DIAGRAMS

I ADDED MORE HD PICTURE



PROBLEM SOLUTION APPROACH

Before I started we have some rules. We have to use standart java array and we can build market, Office , house and playground. I list all necessary things and I decided to make a base class. Because there are a lot of methods that are common each other thanks to this, I can use polymorphism easily.Morever, this is the principles of object oriented. We need to implement add, delete, view mode. I implemented it

TEST CASES

This is the main menü

```
-------------------- Welcome ----------------------
 <-- Design and Implementing a city planning
1-) Add your building to the street
2-) Remove your building from the street
3-) View your street
4-) Quick Example
5-) Exit
Enter a value
First Menu Choice
```

To be able to test system I create a Street.

```
Street LakeStreet = new Street();
LakeStreet.setLength(50);
```

After that I use add functions to add some buildings to the Street

```
House house1=new House( numberOfRooms: 5, length: 5, height: 10, Owner: "Cagri Yilmaz", Color: "Blue", Position: 0, Side: 1,LakeStreet);
LakeStreet.add(house1);
LakeStreet.add(new House( numberOfRooms: 10, length: 10, height: 10, Owner: "Emir Yilmaz", Color: "Yellow", Position: 10, Side: 1,LakeStreet));
House house2=new House( numberOfRooms: 5, length: 5, height: 10, Owner: "Furkan Yilmaz", Color: "Blue", Position: 0, Side: 1,LakeStreet);
LakeStreet.add(new House( numberOfRooms: 16, length: 10, height: 10, Owner: "Onur Akbay", Color: "Red", Position: 10, Side: 2,LakeStreet));
LakeStreet.add(new House( numberOfRooms: 20, length: 10, height: 10, Owner: "Gokhan Digircibasi", Color: "Yellow", Position: 20, Side: 1,LakeStreet));
LakeStreet.add(new Office( Job: "Pharmacy", Height: 10, Length: 10, owner: "Omer Faruk Istemihan", Position: 17, Side: 1,LakeStreet));
LakeStreet.add(new Market( Open: 8, Close: 20, Height: 10, Length: 10, owner: "Atakan Yilmaz", Position: 35, Side: 2,LakeStreet));
```

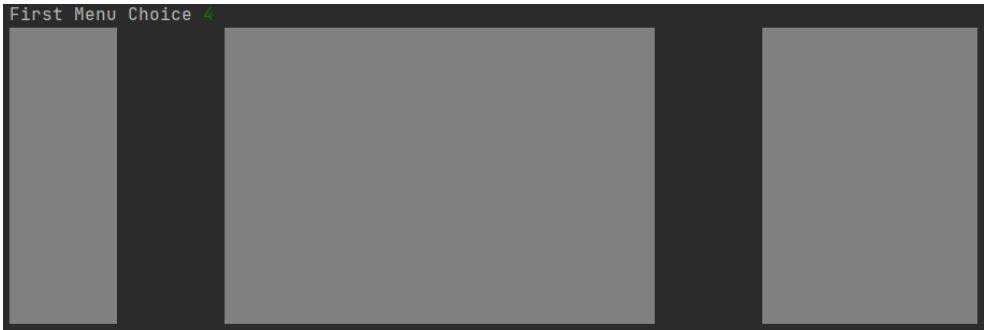
I overrided equal method to all class. You can see one of the examples below.

```
if(house1.equals(house2)){
    System.out.println("The same");
}
```

It prints out ” The same”.

After adding some structures.

```
First Menu Choice 4
```

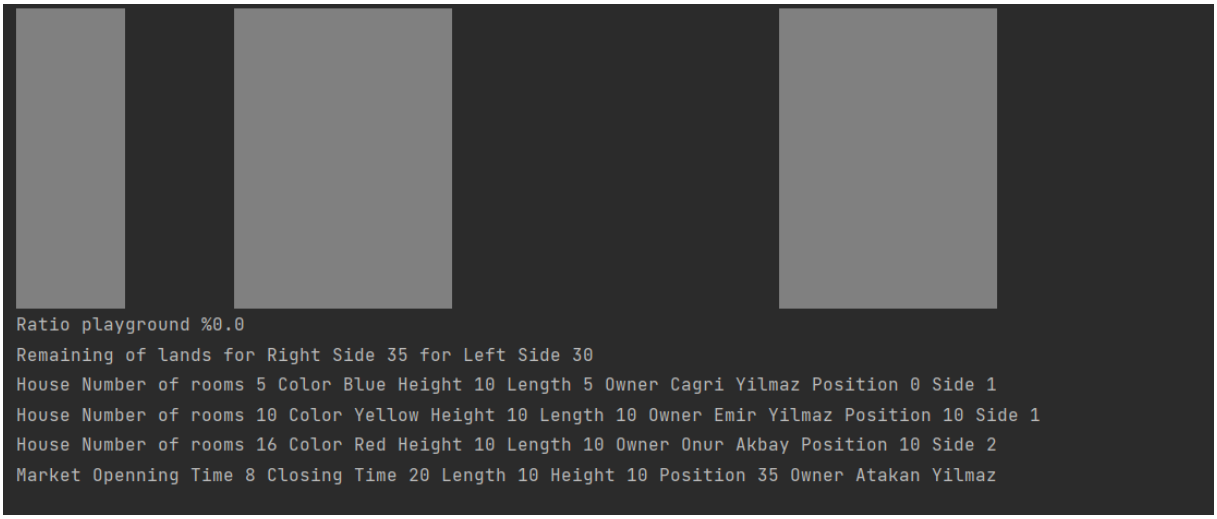


```
Ratio playground %0.0
Remaining of lands for Right Side 25 for Left Side 30
House Number of rooms 5 Color Blue Height 10 Length 5 Owner Cagri Yilmaz Position 0 Side 1
House Number of rooms 10 Color Yellow Height 10 Length 10 Owner Emir Yilmaz Position 10 Side 1
House Number of rooms 16 Color Red Height 10 Length 10 Owner Onur Akbay Position 10 Side 2
House Number of rooms 20 Color Yellow Height 10 Length 10 Owner Gokhan Digircibasi Position 20 Side 1
Market Openning Time 8 Closing Time 20 Length 10 Height 10 Position 35 Owner Atakan Yilmaz

the total length of street occupied by markets houses or offices : 45
```

Now I am going to find that if I delete something there will be change anything or not by viewing.

```
LakeStreet.View();
LakeStreet.delete( item: 3);
LakeStreet.View();
```



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Ratio playground %0.0
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Market Openning Time 8 Closing Time 20 Length 10 Height 10 Position 35 Owner Atakan Yilmaz
```