Gebze Technical University

Computer Engineering

CSE222 – 2022

HOMEWORK 1 REPORT

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1.INTRODUCTION

1.1) System Requirements

First, we need to create the street class where our structures will be held. In street class, we only keep the length of the street. We also keep a 2-dimensional buildings array and save the structures we create in it.

```
private int length;
Buildings[][] builds;
```

Since the street will be on both sides, the number of rows in our array will be 2 and the number of columns will be the length of the street.

```
length=lengthStreet;
builds=new Buildings[2][length];
```

After sending the building created by the user to the setBuild function, we save it to the builds array.

```
public boolean setBuildHouse(Houses h)
```

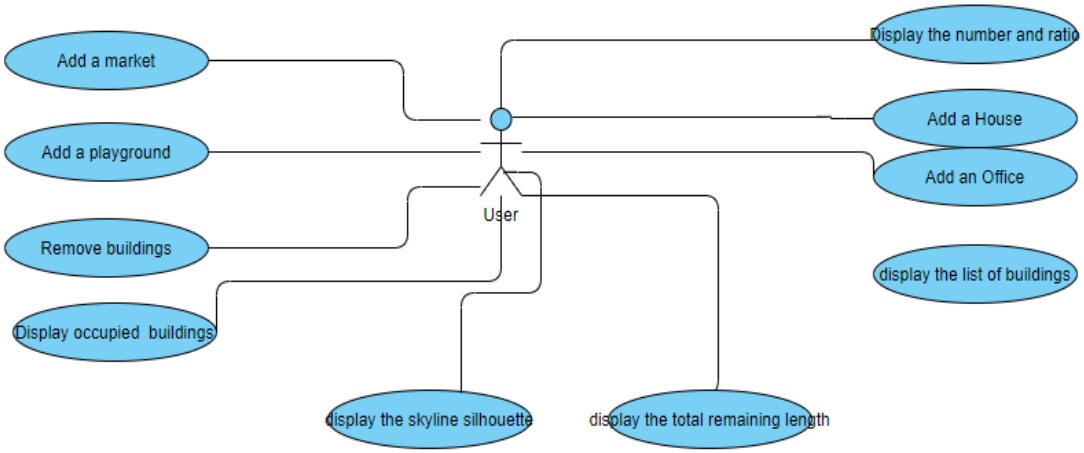
We do our operations according to the object type. While creating, we check whether the position the user wants to use is full or empty.

When the user wants to delete the building in the desired position and on the street, our function runs and we check whether there is a building in the desired location.

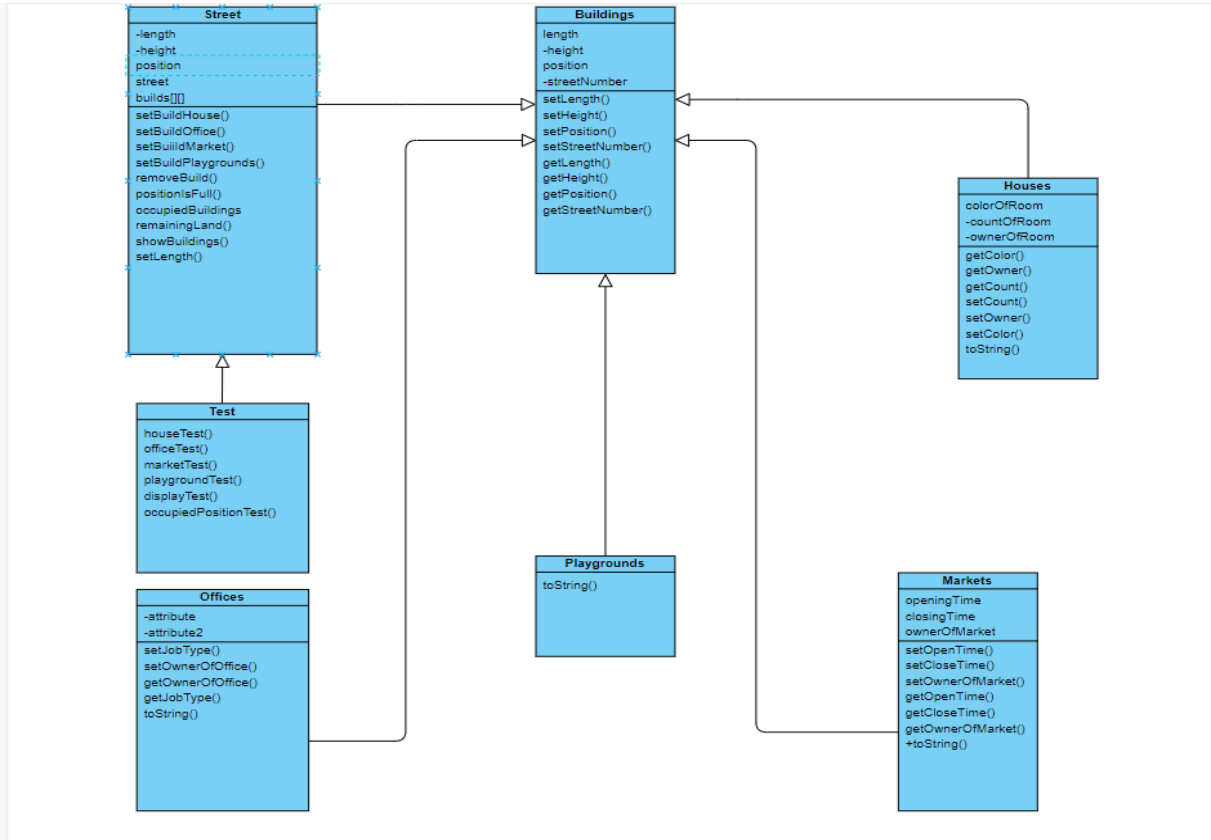
```
public boolean removeBuild(int streetNum,int position)
```

2) Method

2.1) Use Case Diagram



2.2) Class Diagram



2.3) Problem Solution Approach

I determined my system requirements and problems. Then I tried to determine the relationship between the classes correctly. I was careful to follow the oop hierarchy. I extended the house, office, market and playground from the Buildings class.

3) Result

3.1)Test Cases

-Create a House

```
Houses temp=new Houses("Red","Eray Alçin",4,15,20,5,1);
```

```
The house was created.
Houses [colorOfRoom=Red, ownerOfRoom=Eray Alçin, countOfRoom=4]
```

-Create an Office

```
Offices temp=new Offices("Service","Eray Alçin",15,25,15,2);
```

```
he office was created.
)ffices [jobType=Service, ownerOfOffice=Eray Alçin]
```

-Create a Market

```
Markets temp=new Markets("09.00","21.00","Eray Alçin",10,15,15,1);
```

```
The market was created.
Markets [openingTime=09.00, closingTime=21.00, ownerOfMarket=Eray Alçin]
```

-Create a Playground

```
Playgrounds temp=new Playgrounds(10,15,15,1);
```

```
The playground was created.
Playgrounds []
```

- Remove a Build

```
The house was created.
Houses [colorOfRoom=Red, ownerOfRoom=Eray Alçin, countOfRoom=4]

1)  Street :1 / Position :5 / Houses [colorOfRoom=Red, ownerOfRoom=Eray Alçin, countOfRoom=4]
2)  Street :2 / Position :5 / Houses [colorOfRoom=Green, ownerOfRoom=Alçin, countOfRoom=3]
The house has been deleted.

1)  Street :2 / Position :5 / Houses [colorOfRoom=Green, ownerOfRoom=Alçin, countOfRoom=3]
```

```
)ffices [jobType=Service, ownerOfOffice=Eray Alçin]

1)  Street :1 / Position :40 / Offices [jobType=Bank, ownerOfOffice=Alçin]
2)  Street :2 / Position :15 / Offices [jobType=Service, ownerOfOffice=Eray Alçin]
The office has been deleted.

1)  Street :1 / Position :40 / Offices [jobType=Bank, ownerOfOffice=Alçin]
```

```
1)  Street :1 / Position :15 / Playgrounds []
The playground has been deleted.
```

-Total Remaining Length

```
Total remaining length of land on street : 85
```

-Total Length of Street Occupied By The Markets,Houses or Offices

```
Total length of street occupied by the markets, houses or offices : 35
```

-Display All Buildings in The Street

```
1)  Street :1 / Position :5 / Houses [colorOfRoom=Red, ownerOfRoom=Eray Alçin, countOfRoom=4]
2)  Street :2 / Position :3 / Playgrounds []
3)  Street :2 / Position :25 / Playgrounds []
```

Running command

-Add a House

```
Enter the length,heigth,street number,position, number of room, color and owner of house    :10 15 2 5 4 Red Eray

Added.


(1) Add a house
(2) Add an office
(3) Add a market
(4) Add a playground
(5) Remove a building
(-1) Exit

Choice : -1
Exiting...
(1) Editing mode
(2) Viewing mode
Choice :  2


(1) Display the total remaining length of lands on the street.
(2) Display the list of buildings on the street.
(3) Display the number and ratio of length of playgrounds in the street.
(4) Calculate the total length of street occupied by the markets, houses or offices.
(5) Display the skyline silhouette of the street
(-1) Exit

Choice : 2

1)  Street :2 / Position :5 / Houses [colorOfRoom=Red, ownerOfRoom=Eray, countOfRoom=4]
```

-Add an Office

```
Enter the length,heigth,street number,position, job type and owner of office                    :10 15 2 20 Service Eray1

Added.


(1) Add a house
(2) Add an office
(3) Add a market
(4) Add a playground
(5) Remove a building
(-1) Exit

Choice : -1
Exiting...
(1) Editing mode
(2) Viewing mode
Choice :  2


(1) Display the total remaining length of lands on the street.
(2) Display the list of buildings on the street.
(3) Display the number and ratio of length of playgrounds in the street.
(4) Calculate the total length of street occupied by the markets, houses or offices.
(5) Display the skyline silhouette of the street
(-1) Exit

Choice : 2

1)  Street :2 / Position :5 / Houses [colorOfRoom=Red, ownerOfRoom=Eray, countOfRoom=4]
2)  Street :2 / Position :20 / Offices [jobType=Service, ownerOfOffice=Eray1]
```

-Add a Market

```
Enter the length,heigth,street number,position, opening time,closing time and owner of market                    :10 15 2 5 09.00 21.00 Eray1

Added.


(1) Add a house
(2) Add an office
(3) Add a market
(4) Add a playground
(5) Remove a building
(-1) Exit

Choice : -1

Exiting...
(1) Editing mode
(2) Viewing mode
Choice :  2


(1) Display the total remaining length of lands on the street.
(2) Display the list of buildings on the street.
(3) Display the number and ratio of length of playgrounds in the street.
(4) Calculate the total length of street occupied by the markets, houses or offices.
(5) Display the skyline silhouette of the street
(-1) Exit

Choice : 2

1)  Street :2 / Position :5 / Markets [openingTime=09.00, closingTime=21.00, ownerOfMarket=Eray1]
```

-Add a Playground

```
Enter the length,street number,position of playground                          :20 1 2

Added.


(1) Add a house
(2) Add an office
(3) Add a market
(4) Add a playground
(5) Remove a building
(-1) Exit

Choice : -1
Exiting...
(1) Editing mode
(2) Viewing mode
Choice :  2


(1) Display the total remaining length of lands on the street.
(2) Display the list of buildings on the street.
(3) Display the number and ratio of length of playgrounds in the street.
(4) Calculate the total length of street occupied by the markets, houses or offices.
(5) Display the skyline silhouette of the street
(-1) Exit

Choice : 2

1)  Street :1 / Position :2 / Playgrounds []
2)  Street :2 / Position :5 / Markets [openingTime=09.00, closingTime=21.00, ownerOfMarket=Eray1]
```

-Remove Build

```
1)  Street :1 / Position :2 / Playgrounds []
2)  Street :2 / Position :5 / Markets [openingTime=09.00, closingTime=21.00, ownerOfMarket=Eray1]
Select  street number and position to remove building  :1 2


(1) Add a house
(2) Add an office
(3) Add a market
(4) Add a playground
(5) Remove a building
(-1) Exit

Choice : -1
Exiting...
(1) Editing mode
(2) Viewing mode
Choice :  2


(1) Display the total remaining length of lands on the street.
(2) Display the list of buildings on the street.
(3) Display the number and ratio of length of playgrounds in the street.
(4) Calculate the total length of street occupied by the markets, houses or offices.
(5) Display the skyline silhouette of the street
(-1) Exit

Choice : 2

1)  Street :2 / Position :5 / Markets [openingTime=09.00, closingTime=21.00, ownerOfMarket=Eray1]
```

-Total remaing land

```
(1) Display the total remaining length of lands on the street.
(2) Display the list of buildings on the street.
(3) Display the number and ratio of length of playgrounds in the street.
(4) Calculate the total length of street occupied by the markets, houses or offices.
(5) Display the skyline silhouette of the street
(-1) Exit

Choice : 1
Total remaining length of land on street : 110
```

-List of Buildings

```
(1) Display the total remaining length of lands on the street.
(2) Display the list of buildings on the street.
(3) Display the number and ratio of length of playgrounds in the street.
(4) Calculate the total length of street occupied by the markets, houses or offices.
(5) Display the skyline silhouette of the street
(-1) Exit

Choice : 2

1)  Street :2 / Position :5 / Markets [openingTime=09.00, closingTime=21.00, ownerOfMarket=Eray1]

(1) Display the total remaining length of lands on the street
```

-Calculate total length of Street occupied by the markets,Office and house

```
(1) Display the total remaining length of lands on the street.
(2) Display the list of buildings on the street.
(3) Display the number and ratio of length of playgrounds in the street.
(4) Calculate the total length of street occupied by the markets, houses or offices.
(5) Display the skyline silhouette of the street
(-1) Exit

Choice : 4
Total length of street occupied by the markets, houses or offices : 10
```

-The number and ratio of length of playgrounds

```
Enter the length,street number,position of playground                          :10 1 5

Added.


(1) Add a house
(2) Add an office
(3) Add a market
(4) Add a playground
(5) Remove a building
(-1) Exit

Choice : -1
Exiting...
(1) Editing mode
(2) Viewing mode
Choice :  2


(1) Display the total remaining length of lands on the street.
(2) Display the list of buildings on the street.
(3) Display the number and ratio of length of playgrounds in the street.
(4) Calculate the total length of street occupied by the markets, houses or offices.
(5) Display the skyline silhouette of the street
(-1) Exit

Choice : 3
The number and ratio of length of playgrounds in the street   :  0.08333333333333333
```