GTU Department of Computer Engineering

CSE 222/505 - Spring 2022

Homework 1

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System Requirements

a) Functional Requirements

System;

➢ Java Version
   - i. Requirement

     - openjdk 17.0.2 2022-01-18 LTS
     - OpenJDK Runtime Environment Corretto-17.0.2.8.1 (build 17.0.2+8-LTS)
     - OpenJDK 64-Bit Server VM Corretto-17.0.2.8.1 (build 17.0.2+8-LTS, mixed mode, sharing)

User;

➢ Can create street

   - i. Requirements:

     - Length of street

➢ Can create Buildings

   - i. Requirements

     - Position of building
     - Side of street
     - Length of building
     - Height of building

➢ Can create House

   - i. Requirements

     - Position of building
     - Length of building
     - Height of building
     - Number of rooms
     - Color
     - Owner

➢ Can create Office

   - i. Requirements

     - Position of building

- Length of building
- Height of building
- Job type
- Color
 - Owner

> ➢ Can create Market

  i. Requirements

    - Position of building
    - Length of building
    - Height of building
    - Opening/Closing time
     - Owner

> ➢ Can create Playground

  i. Requirements

    - Position of building
    - Length of building

> ➢ Can add buildings

> ➢ Can delete buildings

> ➢ Can list buildings on the street

> ➢ Can display the total remaining length of lands on the street.

> ➢ Can display the number and ratio of length of playgrounds in the street.

> ➢ Can calculate the total length of street occupied by the markets, houses or offices.

> ➢ Can display the skyline silhouette of the street.

> ➢ Can focus any building

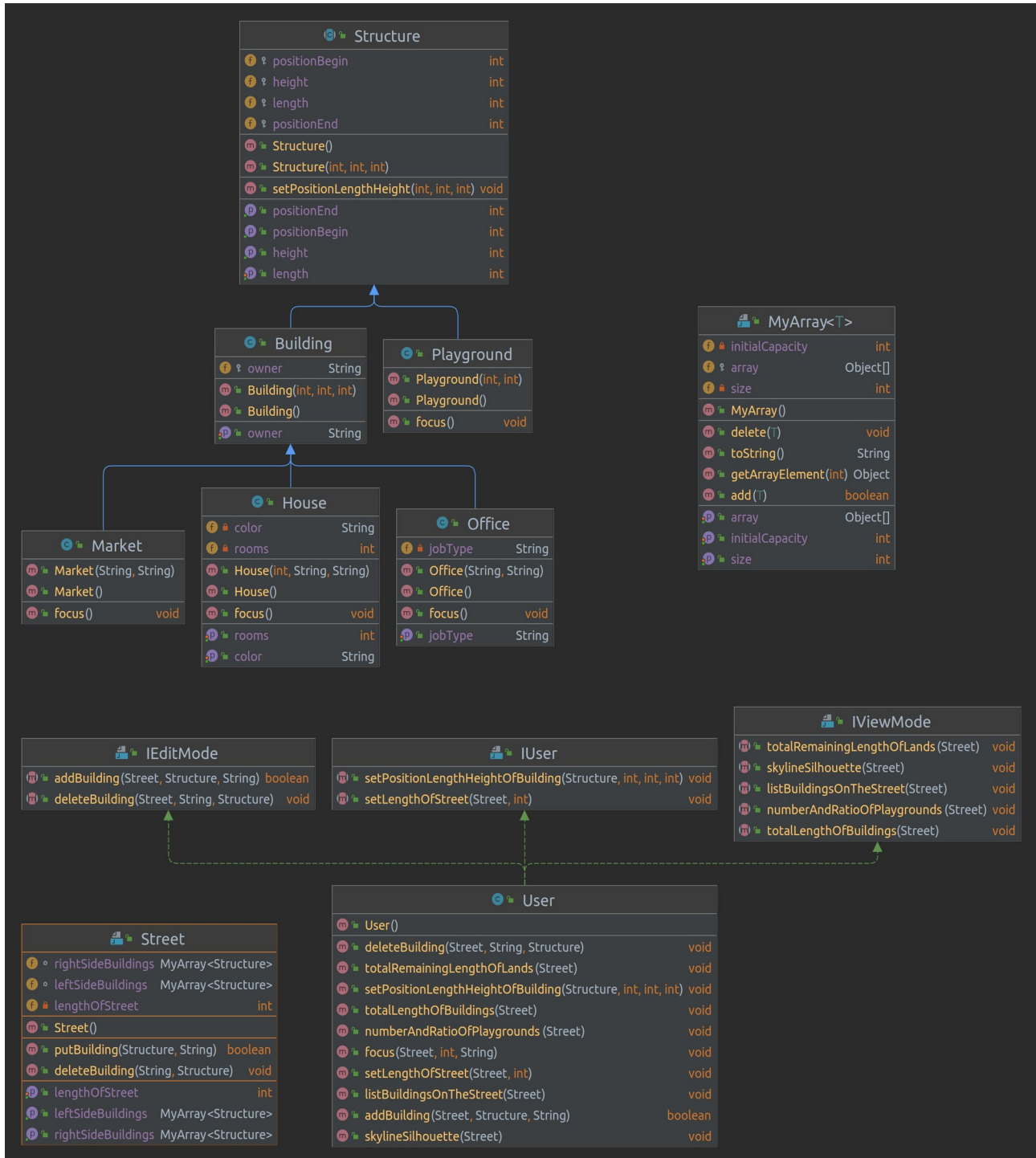## b) Non-Functional Requirements

Portability, Reusability, Security

- Only user can create buildings and playgrounds.
- Only user can delete buildings and playgrounds.
- Markets, Offices and Houses are buildings.
- A building is a Structure.
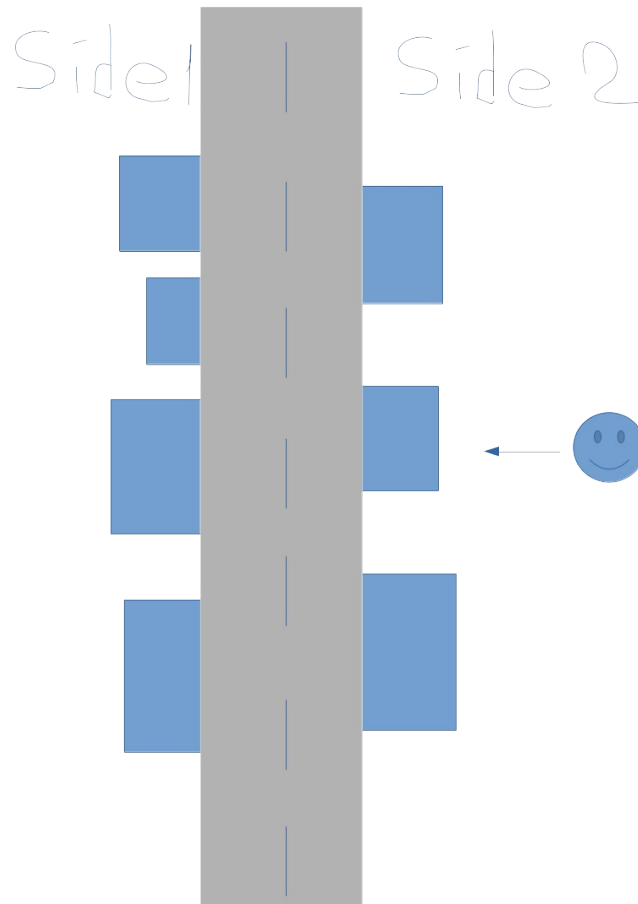- Playgrounds are Structures.

Use Case Diagrams

Class Diagram

Problem Solution Approach

We are asked to design and implement a city planning software that will be used for designing a small one street town. The street structure that I understand is as follows.

The blue ones may be Market(s), Office(s), House(s) or Playground(s). In the homework sheet, it has been said that playgrounds should not be considered a building. To make this, I created a "Structure" class and a "Building" class. "Building" class inherited from "Structure" class. I created the "Playground" inherited from "Structure" class. "Building" class has owner attribute but "Playground" and "Structure" classes do not have it. I created "Market", "Office" and "House" classes and they inherited from "Building" class. User can create building(s). To do this, I created an interface for edit operations. I also created an interface for view operations. This interfaces allow to make changes easily when improving. I put the building(s) and playground(s) to 2 different array. This arrays are created by me. I created an "MyArray" class for container purposes. In this class I set the initial capacity to 10 element. I created an "Street" class and it this class I have 2 Structure type array. One of them for left side and the other one is for right side of street. User creates building(s), playground(s) and sets length of street. After that user can put the building(s) to street if position is valid. To draw silhouette, I looked to all index of arrays and stored the highest height values to an integer array. This array will starts from the street begin part. So, drawing process will be easy. I drew the ceils first and then the below parts of building with "*" character.

Test Cases

** It runs driver code first. After than, user can go to menu or can exit from program.**
** Selection. Continue or exit.**
** Exception handling operations are made all inputs.**

Driver Function is worked!
Press 1 to go to menu
Press 2 to exit
2
Goodbye!

Driver Function is worked!
Press 1 to go to menu
Press 2 to exit
sadf
Input mismatch exception!

Driver Function is worked!
Press 1 to go to menu
Press 2 to exit
5
Invalid option!

Driver Function is worked!
Press 1 to go to menu
Press 2 to exit
1

** Edit – View Selection Menu **
Press 1 to go to Edit mode.
Press 2 to go to View mode.
Press 3 to Exit.
3
Goodbye!

Press 1 to go to Edit mode.
Press 2 to go to View mode.
Press 3 to Exit.
sdf
Input mismatch exception!

Press 1 to go to Edit mode.
Press 2 to go to View mode.
Press 3 to Exit.
1

** Edit Mode **
// if a street wasn't created, it get length of street.
Street was not created.
Please enter street length:
15
Add-Delete building
Press 1 to add a building.
Press 2 to delete a building.
Press 3 to Exit.
1
1) Create Market
2) Create House
3) Create Office
4) Create Playground
5) Go back

1
Enter market opening time: (ex. 9:30AM)
9:30AM
Enter market closing time: (ex. 9:30PM)
9:30PM
Enter market position, length, height and side accordingly: (ex. 3 5 6 left)
4
5
6
sdfdf
left, LEFT, right, RIGHT are acceptable words. Try again!
4
5
6
left
Structure is added to street left side.
1) Create Market
2) Create House
3) Create Office
4) Create Playground
5) Go back
5
Going back..
Press 1 to add a building.
Press 2 to delete a building.
Press 3 to Exit.
3
going to mode selection!
Press 1 to go to Edit mode.
Press 2 to go to View mode.
Press 3 to Exit.
2

8

********* View Mode *************
Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to focus any buildings.
Press 7 to Exit.
** Exit test **
7
going to mode selection!
Press 1 to go to Edit mode.
Press 2 to go to View mode.
Press 3 to Exit.
2
********* View Mode *************
Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to focus any buildings.
Press 7 to Exit.
** totalRemainingLengthOfLands() test **
1
Total remaining length of lands on the street: 25
Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to focus any buildings.
Press 7 to Exit.
** listBuildingsOnTheStreet() test **
2
Building lists:
Market: 1
House: 0
Office: 0

Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to focus any buildings.
Press 7 to Exit.
** numberAndRatioOfPlaygrounds() test **
3

9

Playground number and ratio of playgrounds len to street len:
Playground: 0

Playground / Street length ratio: 0.0
Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to focus any buildings.
Press 7 to Exit.
** totalLengthOfBuildings() test **
4
Total length of buildings:
Market: 5
House: 0
Office: 0

Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to focus any buildings.
Press 7 to Exit.
** skylineSilhouette() test **
5

```
         *  *  *  *  *
         *  *  *  *  *
         *  *  *  *  *
         *  *  *  *  *
         *  *  *  *  *
         *  *  *  *  *
0  1  2  3  4  5  6  7  8  9  10 11 12 13 14
```
Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 7 to Exit.

10

7
going to mode selection!
Press 1 to go to Edit mode.
Press 2 to go to View mode.
Press 3 to Exit.
1
********* Edit Mode *************
Press 1 to add a building.
Press 2 to delete a building.
Press 3 to Exit.
2
Enter position of building you want to remove:
4
Structure Removed!
There is no building at that location.
Press 1 to add a building.
Press 2 to delete a building.
Press 3 to Exit.
3
going to mode selection!
Press 1 to go to Edit mode.
Press 2 to go to View mode.
Press 3 to Exit.
2
********* View Mode *************
Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to Exit.
5

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
Press 1 to display the total remaining length of lands on the street.

11

Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to focus any buildings.
Press 7 to Exit.

** Add House **
Press 1 to add a building.
Press 2 to delete a building.
Press 3 to Exit.
1
1) Create Market
2) Create House
3) Create Office
4) Create Playground
5) Go back
2
Enter number of rooms: (5)
4
Enter house owner: (ex. Ali jack)
ali
Enter house color: (ex. Black)
red
Enter house position, length, height and side accordingly: (ex. 3 5 6 left)
2
4
6
left
Structure is added to street left side.
1) Create Market
2) Create House
3) Create Office
4) Create Playground
5) Go back
** Add office **
3
Enter job type: (software)
fostware
Enter house owner: (ex. Ali jackie)
veli
Enter office position, length, height and side accordingly: (ex. 3 5 6 left)
7
4
8
right
Structure is added to street right side.
1) Create Market
2) Create House

3) Create Office
4) Create Playground
5) Go back
**Add playground **
4
Enter playground position, length and side accordingly: (ex. 3 6 left)
7
4
left
Structure is added to street left side.
1) Create Market
2) Create House
3) Create Office
4) Create Playground
5) Go back
5
Going back..
Press 1 to add a building.
Press 2 to delete a building.
Press 3 to Exit.
3
going to mode selection!
Press 1 to go to Edit mode.
Press 2 to go to View mode.
Press 3 to Exit.
2
********* View Mode *************
Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to focus any buildings.
Press 7 to Exit.
1
Total remaining length of lands on the street: 18
Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to focus any buildings.
Press 7 to Exit.
2
Building lists:
Market: 0
House: 1
Office: 2

Press 1 to display the total remaining length of lands on the street.

13

Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to focus any buildings.
Press 7 to Exit.
3
Playground number and ratio of playgrounds len to street len:
Playground: 0

Playground / Street length ratio: 0.0
Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to focus any buildings.
Press 7 to Exit.
4
Total length of buildings:
Market: 0
House: 4
Office: 8

Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to focus any buildings.
Press 7 to Exit.
5

```
                  *  *  *  *
                  *  *  *  *
       *  *  *  *  *  *  *  *
       *  *  *  *  *  *  *  *
       *  *  *  *  *  *  *  *
       *  *  *  *  *  *  *  *
       *  *  *  *  *  *  *  *
       *  *  *  *  *  *  *  *
0  1  2  3  4  5  6  7  8  9  10 11 12 13 14
```
Press 1 to display the total remaining length of lands on the street.

14

Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to focus any buildings.
Press 7 to Exit.
6
Enter position and side to focus building.
7
left
Length: 6

Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to focus any buildings.
Press 7 to Exit.
7
going to mode selection!
Press 1 to go to Edit mode.
Press 2 to go to View mode.
Press 3 to Exit.

Running Command And Results

Test 2, 3 and 4 does not include focus part. Because I implemented those but forgot to put menu. So, I put it lately and used in Test1. Only Test1 includes focus parts. In other words it works well in code.

Test 1:

```
Driver Function is worked!
Press 1 to go to menu
Press 2 to exit
1
Press 1 to go to Edit mode.
Press 2 to go to View mode.
Press 3 to Exit.
2
********* View Mode *************
You should create a street in edit mode. Menu loading...
Press 1 to go to Edit mode.
Press 2 to go to View mode.
Press 3 to Exit.
1
********* Edit Mode *************
Street was not created.
Please enter street length:
15
Press 1 to add a building.
Press 2 to delete a building.
Press 3 to Exit.
1
1) Create Market
2) Create House
3) Create Office
4) Create Playground
5) Go back
1
Enter market opening time: (ex. 9:30AM)
11:11
Enter market closing time: (ex. 9:30PM)
11:11
```

```
Enter market position, length, height and side accordingly: (ex. 3 5 6 left)
2
4
6
left
Structure is added to street left side.
1) Create Market
2) Create House
3) Create Office
4) Create Playground
5) Go back
2
Enter number of rooms: (5)
4
Enter house owner: (ex. Ali jack)
ali
Enter house color: (ex. Black)
red
Enter house position, length, height and side accordingly: (ex. 3 5 6 left)
7
3
5
left
Structure is added to street left side.
1) Create Market
2) Create House
3) Create Office
4) Create Playground
5) Go back
3
Enter job type: (software)
softwware
Enter house owner: (ex. Ali jackie)
john
```

```
Enter office position, length, height and side accordingly: (ex. 3 5 6 left)
1
4
6
right
Structure is added to street right side.
1) Create Market
2) Create House
3) Create Office
4) Create Playground
5) Go back
4
Enter playground position, length and side accordingly: (ex. 3 6 left)
8
3
right
Structure is added to street right side.
1) Create Market
2) Create House
3) Create Office
4) Create Playground
5) Go back
5
Going back..
Press 1 to add a building.
Press 2 to delete a building.
Press 3 to Exit.
3
going to mode selection!
Press 1 to go to Edit mode.
Press 2 to go to View mode.
Press 3 to Exit.
2
```

```
********* View Mode *************
Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to focus any buildings.
Press 7 to Exit.
1

Total remaining length of lands on the street: 16
Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to focus any buildings.
Press 7 to Exit.
2
Building lists:
Market: 1
House: 1
Office: 1

Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to focus any buildings.
Press 7 to Exit.
3
Playground number and ratio of playgrounds len to street len:
Playground: 1
Playground / Street length ratio: 0.07142857142857142
```

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```
Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to focus any buildings.
Press 7 to Exit.
4
Total length of buildings:
Market: 4
House: 3
Office: 4

Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to focus any buildings.
Press 7 to Exit.
5




    *   *   *   *   *
    *   *   *   *   *     *   *   *   *
    *   *   *   *   *     *   *   *   *
    *   *   *   *   *     *   *   *   *
    *   *   *   *   *     *   *   *   *
```

```
   *   *   *   *   *
   *   *   *   *   *     *   *   *   *
   *   *   *   *   *     *   *   *   *
   *   *   *   *   *     *   *   *   *
   *   *   *   *   *     *   *   *   *
   *   *   *   *   *     *   *   *   *
0  1  2  3  4  5  6  7  8  9  10 11 12 13 14
Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to focus any buildings.
Press 7 to Exit.
6
Enter position and side to focus building.
1
right
Job type: softwware
Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to focus any buildings.
Press 7 to Exit.
7
going to mode selection!
```

```
going to mode selection!
Press 1 to go to Edit mode.
Press 2 to go to View mode.
Press 3 to Exit.
2
********* View Mode *************
Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to focus any buildings.
Press 7 to Exit.
6
Enter position and side to focus building.
2
left
Closing time: 11:11
```

```
Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to focus any buildings.
Press 7 to Exit.
5




       *   *   *   *
       *   *   *   *      *   *   *   *
       *   *   *   *      *   *   *   *
       *   *   *   *      *   *   *   *
       *   *   *   *      *   *   *   *
       *   *   *   *      *   *   *   *
 0  1  2  3  4  5  6  7  8  9  10 11 12 13 14
Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to focus any buildings.
Press 7 to Exit.
7
going to mode selection!
Press 1 to go to Edit mode.
Press 2 to go to View mode.
Press 3 to Exit.
```

```
Press 1 to go to Edit mode.
Press 2 to go to View mode.
Press 3 to Exit.
3
Goodbye!
Press 1 to go to menu
Press 2 to exit
2
Goodbye!


Process finished with exit code 0
```

Test 2:

```
Driver ×

1
Press 1 to go to Edit mode.
Press 2 to go to View mode.
Press 3 to Exit.
2
********* View Mode *************
You should create a street in edit mode. Menu loading...
Press 1 to go to Edit mode.
Press 2 to go to View mode.
Press 3 to Exit.
1
********* Edit Mode *************
Street was not created.
Please enter street length:
15
Press 1 to add a building.
Press 2 to delete a building.
Press 3 to Exit.
1
1) Create Market
2) Create House
3) Create Office
4) Create Playground
5) Go back
1
Enter market opening time: (ex. 9:30AM)
11:11
Enter market closing time: (ex. 9:30PM)
11:11
Enter market position, length, height and side accordingly: (ex. 3 5 6 left)
2
4
6
right
Structure is added to street right side.
```

```
1) Create Market
2) Create House
3) Create Office
4) Create Playground
5) Go back
2
Enter number of rooms: (5)
7
Enter house owner: (ex. Ali jack)
ali
Enter house color: (ex. Black)
red
Enter house position, length, height and side accordingly: (ex. 3 5 6 left)
4
5
3
left
Structure is added to street left side.
1) Create Market
2) Create House
3) Create Office
4) Create Playground
5) Go back
3
Enter job type: (software)
hairdresser
Enter house owner: (ex. Ali jackie)
john
Enter office position, length, height and side accordingly: (ex. 3 5 6 left)
9
3
8
left
Structure is not added. There is no enough space in the street
That position is not on empty land area. Try again!
```

```
Enter office position, length, height and side accordingly: (ex. 3 5 6 left)
1
4
6
left
Structure is not added. There is no enough space in the street
That position is not on empty land area. Try again!
Enter office position, length, height and side accordingly: (ex. 3 5 6 left)
1
4
6
right
Structure is not added. There no enough space in the street
That position is not on empty land area. Try again!
Enter office position, length, height and side accordingly: (ex. 3 5 6 left)
9
1
4
left
Structure is not added. There is no enough space in the street
That position is not on empty land area. Try again!
Enter office position, length, height and side accordingly: (ex. 3 5 6 left)
10
2
5
right
Structure is added to street right side.
```

```
1) Create Market
2) Create House
3) Create Office
4) Create Playground
5) Go back
4
Enter playground position, length and side accordingly: (ex. 3 6 left)
11
2
right
Structure is not added. There is no enough space in the street
That position is not on empty land area. Try again!
Enter playground position, length and side accordingly: (ex. 3 6 left)
11
2
left
Structure is added to street left side.
1) Create Market
2) Create House
3) Create Office
4) Create Playground
5) Go back
5
Going back..
Press 1 to add a building.
Press 2 to delete a building.
Press 3 to Exit.
3
going to mode selection!
Press 1 to go to Edit mode.
Press 2 to go to View mode.
Press 3 to Exit.
2
********* View Mode *************
Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
```

```
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to Exit.
1
Total remaining length of lands on the street: 17
Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to Exit.
2
Building lists:
Market: 1
House: 1
Office: 2

Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to Exit.
3
Playground number and ratio of playgrounds len to street len:
Playground: 0

Playground / Street length ratio: 0.0
```

```
Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to Exit.
4
Total length of buildings:
Market: 4
House: 5
Office: 4

Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to Exit.
5




        *  *  *  *
        *  *  *  *              *  *
        *  *  *  *              *  *
        *  *  *  *  *  *  *     *  *
        *  *  *  *  *  *  *     *  *
        *  *  *  *  *  *  *     *  *
  0  1  2  3  4  5  6  7  8  9  10 11 12 13 14
Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
```

```
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to Exit.
6
going to mode selection!
Press 1 to go to Edit mode.
Press 2 to go to View mode.
Press 3 to Exit.
1
********* Edit Mode *************
Press 1 to add a building.
Press 2 to delete a building.
Press 3 to Exit.
2
Enter position of building you want to remove:
2
Structure Removed!
There is no building at that location.
Press 1 to add a building.
Press 2 to delete a building.
Press 3 to Exit.
3
going to mode selection!
Press 1 to go to Edit mode.
Press 2 to go to View mode.
Press 3 to Exit.
2
********* View Mode *************
Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to Exit.
1
Total remaining length of lands on the street: 21
Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
```

30

```
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to Exit.
2
Building lists:
Market: 0
House: 1
Office: 2


Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to Exit.
3
Playground number and ratio of playgrounds len to street len:
Playground: 0


Playground / Street length ratio: 0.0
Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to Exit.
4
Total length of buildings:
Market: 0
House: 5
Office: 4


Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to Exit.
```

```
Press 6 to Exit.
5




                              *  *
                              *  *
          *  *  *  *  *        *  *
          *  *  *  *  *        *  *
          *  *  *  *  *        *  *
0  1  2  3  4  5  6  7  8  9  10 11 12 13 14
Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to Exit.
6

going to mode selection!
Press 1 to go to Edit mode.
Press 2 to go to View mode.
Press 3 to Exit.
3

Goodbye!
Press 1 to go to menu
Press 2 to exit
sdf
Input mismatch exception!
```

```
                              *  *
                              *  *
           *  *  *  *  *       *  *
           *  *  *  *  *       *  *
           *  *  *  *  *       *  *
0  1  2  3  4  5  6  7  8  9  10 11 12 13 14
Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to Exit.
6
going to mode selection!
Press 1 to go to Edit mode.
Press 2 to go to View mode.
Press 3 to Exit.
3
Goodbye!
Press 1 to go to menu
Press 2 to exit
sdf
Input mismatch exception!
Press 1 to go to menu
Press 2 to exit
2
Goodbye!

Process finished with exit code 0
```

Test 3:

```
/usr/lib/jvm/java-17-amazon-corretto/bin/java -javaagent:/snap/intellij-idea-ultimate/341/lib/
A street is created.
User object created.
street length is set to 15 by user.
A playground is created. Length : 3 and position: 12
Market object is created. Opening time: 9:00AM and closing time: 7:00PM
Market object is created. Opening time: 8:30AM and closing time: 5:30PM
Office object is created. Job type: software, owner: cem bulut
Office object is created. Job type: insurance, owner: kaya gurger
Office object is created. Job type: fortune teller, owner: sadiye seker
House object is created. num. of rooms: 3, color: blue, owner: veli guder
House object is created. num. of rooms: 2, color: black, owner: arzu sahin
House object is created. num. of rooms: 5, color: white, owner: nesin beyaz
House object is created. num. of rooms: 1, color: grey, owner: guru buru


Playground1 position(6), length(6) and height(10) are set.
Market1 position(2), length(5) and height(4) are set.
Market2 position(5), length(5) and height(8) are set.
Office1 position(1), length(4) and height(13) are set.
Office2 position(2), length(3) and height(4) are set.


Market1 is added to street left side.
Market2 is added to street right side.
Office1 is not added. There is no enough space in the street
House1 is added to street right side.









            *  *  *  *  *
            *  *  *  *  *
            *  *  *  *  *
            *  *  *  *  *
      *  *  *  *  *  *  *  *
      *  *  *  *  *  *  *  *
```

```
35          *   *   *   *   *
            *   *   *   *   *
            *   *   *   *   *
            *   *   *   *   *
    *   *   *   *   *   *   *   *
    *   *   *   *   *   *   *   *
    *   *   *   *   *   *   *   *
    *   *   *   *   *   *   *   *
0   1   2   3   4   5   6   7   8   9   10 11 12 13 14
Skyline silhouette is drawn.

Market2 is deleted from right side.




        *   *   *   *   *
        *   *   *   *   *
        *   *   *   *   *
        *   *   *   *   *
0   1   2   3   4   5   6   7   8   9   10 11 12 13 14
Skyline silhouette is drawn.
Building lists:
Market: 1
House: 1
Office: 0

Playground number and ratio of playgrounds len to street len:
```

```
     *   *   *   *   *
     *   *   *   *   *
0  1  2  3  4  5  6  7  8  9  10 11 12 13 14
Skyline silhouette is drawn.
Building lists:
Market: 1
House: 1
Office: 0


Playground number and ratio of playgrounds len to street len:
Playground: 0


Playground / Street length ratio: 0.0
Total length of buildings:
Market: 5
House: 0
Office: 0


25
Driver Function is worked!
Press 1 to go to menu
Press 2 to exit
1
Press 1 to go to Edit mode.
Press 2 to go to View mode.
Press 3 to Exit.
1
********* Edit Mode *************
Street was not created.
Please enter street length:
15
Press 1 to add a building.
Press 2 to delete a building.
Press 3 to Exit.
1
1) Create Market
2) Create House
3) Create Office
4) Create Playground
```

```
1
1) Create Market
2) Create House
3) Create Office
4) Create Playground
5) Go back
1

Enter market opening time: (ex. 9:30AM)
9:30AM
Enter market closing time: (ex. 9:30PM)
9:30PM
Enter market position, length, height and side accordingly: (ex. 3 5 6 left)

4

5

6

LEFT
That position is not on empty land area. Try again!

4

5

6

left
is added to street left side.
1) Create Market
2) Create House
3) Create Office
4) Create Playground
5) Go back
5

Going back..
Press 1 to add a building.
Press 2 to delete a building.
Press 3 to Exit.
3

going to mode selection!
Press 1 to go to Edit mode.
Press 2 to go to View mode.
Press 3 to Exit.
2
```

Test 4:

```
Driver ×
/usr/lib/jvm/java-17-amazon-corretto/bin/java -javaagent:/snap/intellij-idea-ultimate/341/lib/idea_rt.jar=42929:/snap/intellij-idea-ultimate/341
A street is created.
User object created.
street length is set to 15 by user.
A playground is created. Length : 3 and position: 12
Market object is created. Opening time: 9:00AM and closing time: 7:00PM
Market object is created. Opening time: 8:30AM and closing time: 5:30PM
Office object is created. Job type: software, owner: cem bulut
Office object is created. Job type: insurance, owner: kaya gurger
Office object is created. Job type: fortune teller, owner: sadiye seker
House object is created. num. of rooms: 3, color: blue, owner: veli guder
House object is created. num. of rooms: 2, color: black, owner: arzu sahin
House object is created. num. of rooms: 5, color: white, owner: nesin beyaz
House object is created. num. of rooms: 1, color: grey, owner: guru buru

Playground1 position(6), length(6) and height(10) are set.
Market1 position(2), length(5) and height(4) are set.
Market2 position(5), length(5) and height(8) are set.
Office1 position(1), length(4) and height(13) are set.
Office2 position(2), length(3) and height(4) are set.

Structure is added to street left side.
Structure is added to street right side.
Structure is not added. There is no enough space in the street
Structure is added to street right side.




          *  *  *  *  *
          *  *  *  *  *
          *  *  *  *  *
          *  *  *  *  *
    *  *  *  *  *  *  *  *
    *  *  *  *  *  *  *  *
```

```
              *   *   *   *   *
      *   *   *   *   *   *   *   *
      *   *   *   *   *   *   *   *
      *   *   *   *   *   *   *   *
      *   *   *   *   *   *   *   *
  0   1   2   3   4   5   6   7   8   9   10 11 12 13 14
Skyline silhouette is drawn.

Market2 is deleted from right side.
```

```
      *   *   *   *   *
      *   *   *   *   *
      *   *   *   *   *
      *   *   *   *   *
  0   1   2   3   4   5   6   7   8   9   10 11 12 13 14
Skyline silhouette is drawn.
Building lists:
Market: 1
House: 1
Office: 0

Playground number and ratio of playgrounds len to street len:
Playground: 0

Playground / Street length ratio: 0.0
Total length of buildings:
Market: 5
House: 0
```

```
Driver ×
 Total length of buildings:
 Market: 5
 House: 0
 Office: 0


 Total remaining length of lands on the street: 25
 Driver Function is worked!
 Press 1 to go to menu
 Press 2 to exit
 1
 Press 1 to go to Edit mode.
 Press 2 to go to View mode.
 Press 3 to Exit.
 1
 ********* Edit Mode *************
 Street was not created.
 Please enter street length:
 15
 Press 1 to add a building.
 Press 2 to delete a building.
 Press 3 to Exit.
 1
 1) Create Market
 2) Create House
 3) Create Office
 4) Create Playground
 5) Go back
 2
 Enter number of rooms: (5)
 4
 Enter house owner: (ex. Ali jack)
 ali
 Enter house color: (ex. Black)
 red
 Enter house position, length, height and side accordingly: (ex. 3 5 6 left)
 2
 4
 6
 left
```

```
4

6

left
Structure is added to street left side.
1) Create Market
2) Create House
3) Create Office
4) Create Playground
5) Go back

3
Enter job type: (software)
fostware
Enter house owner: (ex. Ali jackie)
veli
Enter office position, length, height and side accordingly: (ex. 3 5 6 left)

7

4

8

right
Structure is added to street right side.
1) Create Market
2) Create House
3) Create Office
4) Create Playground
5) Go back

4
Enter playground position, length and side accordingly: (ex. 3 6 left)

7

4

left
Structure is added to street left side.
1) Create Market
2) Create House
3) Create Office
4) Create Playground
5) Go back

5
Going back..
Press 1 to add a building.
```

```
  5
Going back..
Press 1 to add a building.
Press 2 to delete a building.
Press 3 to Exit.
  3
going to mode selection!
Press 1 to go to Edit mode.
Press 2 to go to View mode.
Press 3 to Exit.
  2
********* View Mode *************
Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to Exit.
  1
Total remaining length of lands on the street: 18
Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to Exit.
  2
Building lists:
Market: 0
House: 1
Office: 2

Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to Exit.
  3
```

```
3
Playground number and ratio of playgrounds len to street len:
Playground: 0

Playground / Street length ratio: 0.0
Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to Exit.
4
Total length of buildings:
Market: 0
House: 4
Office: 8

Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to Exit.
5




                              *   *   *   *
                              *   *   *   *
           *   *   *   *       *   *   *   *
           *   *   *   *       *   *   *   *
           *   *   *   *       *   *   *   *
           *   *   *   *       *   *   *   *
           *   *   *   *       *   *   *   *
```

43

```
House: 4
Office: 8


Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to Exit.
5




                      *   *   *   *
                      *   *   *   *
        *   *   *   *     *   *   *   *
        *   *   *   *     *   *   *   *
        *   *   *   *     *   *   *   *
        *   *   *   *     *   *   *   *
        *   *   *   *     *   *   *   *
        *   *   *   *     *   *   *   *
0  1  2  3  4  5  6  7  8  9  10 11 12 13 14
Press 1 to display the total remaining length of lands on the street.
Press 2 to display the list of buildings on the street.
Press 3 to display the number and ratio of lenth of playgrounds in the street.
Press 4 to display the total length of street occupied by the markets, houses or offices.
Press 5 to display the skyline silhouette of the street.
Press 6 to Exit.
6

going to mode selection!
Press 1 to go to Edit mode.
Press 2 to go to View mode.
Press 3 to Exit.
```