GTU Department of Computer Engineering
CSE 222/505 - Spring 2022
Homework 1 Report

HACI HASAN SAVAN
1901042704

1. System Requirements

To Work Properly "*javac*" compiler should be used. The only thing to compile the code is write "*make*" to the console.
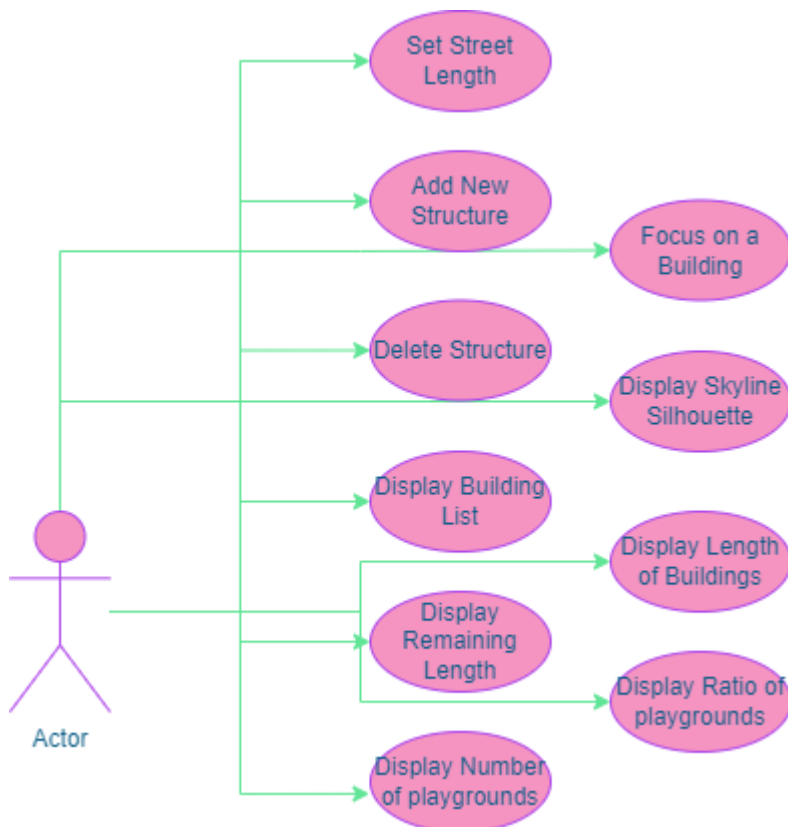
The System will show up with a menu. User has to choose one of the modes. If user choose Driver Mode, the program doesn't ask anything and works with values that has been entered by developer. User should choose deriver mode to see example work out.

On the other hand, User has to enter the street length by hand and can continue to choose what's going to do.
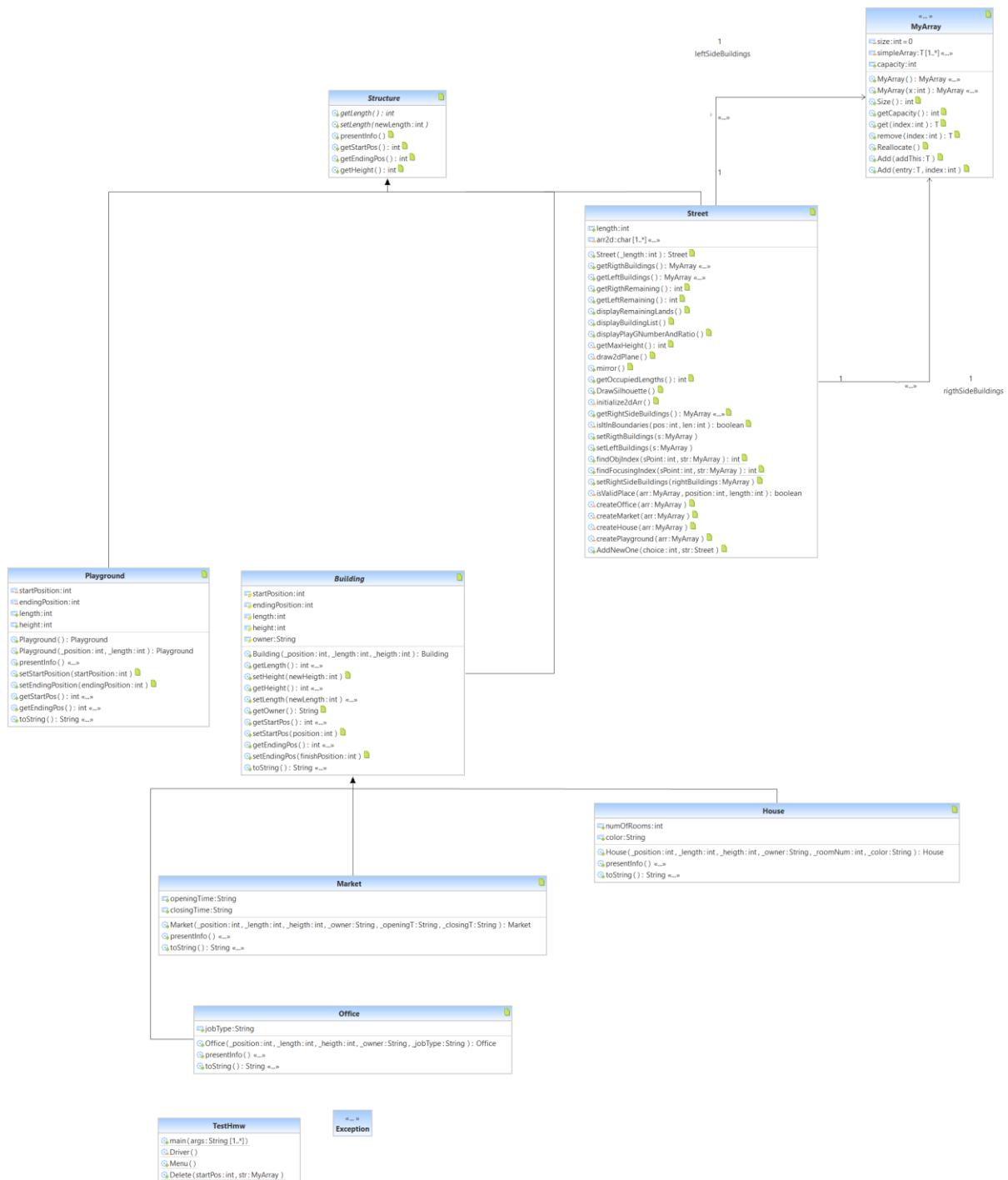
User must enter integer values when making choice and entering numerical values.

- jdk and jre are requested from operating system to execute this java program.

Use Case Diagram:

UML Diagram:

«...»
MyArray
- size : int = 0
- simpleArray : T [1..*] «...»
- capacity : int
- MyArray ( ) : MyArray «...»
- MyArray (x : int) : MyArray «...»
- Size ( ) : int
- getCapacity ( ) : int
- get (index : int) : T
- remove (index : int) : T
- Reallocate ( )
- Add (addThis : T)
- Add (entry : T , index : int)

1
leftSideBuildings

Structure
- getLength ( ) : int
- setLength (newLength : int)
- presentInfo ( )
- getStartPos ( ) : int
- getEndingPos ( ) : int
- getHeight ( ) : int

Street
- length : int
- arr2d : char [1..*] «...»
- Street (_length : int) : Street
- getRigthBuildings ( ) : MyArray «...»
- getLeftBuildings ( ) : MyArray «...»
- getRigthRemaining ( ) : int
- getLeftRemaining ( ) : int
- displayRemainingLands ( )
- displayBuildingList ( )
- displayPlayGNumberAndRatio ( )
- getMaxHeight ( ) : int
- draw2dPlane ( )
- mirror ( )
- getOccupiedLengths ( ) : int
- DrawSilhouette ( )
- initialize2dArr ( )
- getRightSideBuildings ( ) : MyArray «...»
- isInBoundaries (pos : int , len : int) : boolean
- setRigthBuildings (s : MyArray)
- setLeftBuildings (s : MyArray)
- findObjIndex (sPoint : int , str : MyArray) : int
- findFocusingIndex (sPoint : int , str : MyArray) : int
- setRightSideBuildings (rightBuildings : MyArray)
- isValidPlace (arr : MyArray , position : int , length : int) : boolean
- createOffice (arr : MyArray)
- createMarket (arr : MyArray)
- createHouse (arr : MyArray)
- createPlayground (arr : MyArray)
- AddNewOne (choice : int , str : Street)

1
rigthSideBuildings

Playground
- startPosition : int
- endingPosition : int
- length : int
- height : int
- Playground ( ) : Playground
- Playground (_position : int , _length : int) : Playground
- presentInfo ( ) «...»
- setStartPosition (startPosition : int)
- setEndingPosition (endingPosition : int)
- getStartPos ( ) : int «...»
- getEndingPos ( ) : int «...»
- toString ( ) : String «...»

Building
- startPosition : int
- endingPosition : int
- length : int
- height : int
- owner : String
- Building (_position : int , _length : int , _heigth : int) : Building
- getLength ( ) : int «...»
- setHeight (newHeigth : int)
- getHeight ( ) : int «...»
- setLength (newLength : int) «...»
- getOwner ( ) : String
- getStartPos ( ) : int «...»
- setStartPos (position : int)
- getEndingPos ( ) : int «...»
- setEndingPos (finishPosition : int)
- toString ( ) : String «...»

House
- numOfRooms : int
- color : String
- House (_position : int , _length : int , _heigth : int , _owner : String , _roomNum : int , _color : String) : House
- presentInfo ( ) «...»
- toString ( ) : String «...»

Market
- openingTime : String
- closingTime : String
- Market (_position : int , _length : int , _heigth : int , _owner : String , _openingT : String , _closingT : String) : Market
- presentInfo ( ) «...»
- toString ( ) : String «...»

Office
- jobType : String
- Office (_position : int , _length : int , _heigth : int , _owner : String , _jobType : String) : Office
- presentInfo ( ) «...»
- toString ( ) : String «...»

TestHmw
- main (args : String [1..*])
- Driver ( )
- Menu ( )
- Delete (startPos : int , str : MyArray)

«...»
Exception

Problem Solution Approach:

At the First I created the **Structure abstract class** that will be derived by buildings, streets, and playgrounds classes (Structure: I used this keyword because of that meaning in Turkish: '**yapı**'). Under the structure class **Street Class** is puts structures in 2 custom array (**MyArray**) those are '**leftSideBuildings**'(left structures/ that is on the behind) and '**rightSideBuildings**' (right structures/ that is on the front). These arrays stores Structure reference but in the test case I put playground and building class that is the base class of the office, market and house Into that arrays. I also design my own abstract data type that uses just simple array and can do anything I needed (adding, deleting, removing an index, returning object). It is like ArrayList but uses just simple array.

All required methods to provide wanted functionality are in the Street Class. I also wrote a test class and test methods in test package.

The other thing that I will mention is silhouette method. The Street class has a 2d char array (arr2d). I travel in this array's indexes and I also travel rightSide or leftSide array and compared their indexes with arr2d array's index and I put '.' to the arr2d in the proper place.

Test Cases and Running Comments-Results

NOTE: while testing the system, the length of the Street is entered as 120
- Setting street length with negative and correct input
The size of the Street must be greater than eqaul to zero otherwise gives error and wants again:

```
------------USER MODE------------

Please enter the length of street: -10
Invalid Size Input!!

Please enter the length of street: -200
Invalid Size Input!!

Please enter the length of street: 120
1. Editing Mode
2. Viewing Mode
3. Focusing Mode
4. Exit
```

- Empty street actions: • Delete building from empty street
Deleting building from empty Street

```
1. Add new
2. Delete
3. Exit
2
From which side would you like to delete? Rigth-> 1, Left->2: 1
Enter the Structure's start  position
10

The Given Street is already empty!!!
```

• Displaying total remaining length of empty street

```
1. Editing Mode
2. Viewing Mode
3. Focusing Mode
4. Exit
2
1. Display Remaining length of Land
2. Display the list of buildings on the street.
3. Display the number and ratio of lenth of playgrounds in the street.
4. Total length of street occupied by the markets, houses and offices.
5. Display the skyline silhouette of the street
6. Exit
1
on the Rigth Side: 120
on the Left Side: 120
Total Remaining: 240
```

• Displaying list of buildings on empty street

```
1. Display Remaining length of Land
2. Display the list of buildings on the street.
3. Display the number and ratio of lenth of playgrounds in the street.
4. Total length of street occupied by the markets, houses and offices.
5. Display the skyline silhouette of the street
6. Exit
2
Rigth:
-----------
Left:
```

• Displaying number and ratio of playgrounds

```
1. Display Remaining length of Land
2. Display the list of buildings on the street.
3. Display the number and ratio of lenth of playgrounds in the street.
4. Total length of street occupied by the markets, houses and offices.
5. Display the skyline silhouette of the street
6. Exit
3
Playground number: 0
Ratio of lenth of playgrounds: 0.0 (0.0/240)
```

• Displaying total length of street occupied by the markets, houses or offices

```
1. Display Remaining length of Land
2. Display the list of buildings on the street.
3. Display the number and ratio of lenth of playgrounds in the street.
4. Total length of street occupied by the markets, houses and offices.
5. Display the skyline silhouette of the street
6. Exit
4
Office: 0
Market: 0
House: 0
Total length of all markets,offices,houses: 0
```

• Focusing on a building and playground on empty street

```
1. Focus on a specific  House
2. Focus on a specific  Offices
3. Focus on a specific  Markets
4. Focus on a specific  Playgrounds
5. Exit
1
which side do you wanna look at? Rigth-> 1, Left->2: 1
Enter Start Position: 0
Given Position is not correct!!
```

• Displaying the skyline silhouette of empty street

```
1. Display Remaining length of Land
2. Display the list of buildings on the street.
3. Display the number and ratio of lenth of playgrounds in the street.
4. Total length of street occupied by the markets, houses and offices.
5. Display the skyline silhouette of the street
6. Exit
5
...............................................................................................
```

- Displaying the skyline silhouette of the street

```
   2
ure 1. Display Remaining length of Land
   2. Display the list of buildings on the street.
   3. Display the number and ratio of lenth of playgrounds in the street.
   4. Total length of street occupied by the markets, houses and offices.
   5. Display the skyline silhouette of the street
   6. Exit
   5
                     ...........
                     ...........
                     ...........
                     ...........
                     ...........
                     ...........
                     ...........
                     ...........
                     ...........
                     ...........
                     ...........
   ........ .................                    ..........
   ........ .................                    ..........
   ........ .................                    ..........
   ........ .................                    ..........
   ........ .................                    ..........
   ........ .................               ................
   ........ .................               ................
   ........ .................               ................
   ........ .................               ................
   ........ .................               ................
   .......................                   ................
   .......................            .....  ................
   .......................            .....  ................
   ........................................................
```

- Adding buildings and playground to the street

```
------------EDITING MODE-------------

Current state:

Rigth:
House:  1. [ Start position: 0, length: 7, heigth: 14, owner: Elon Husky, color: Bed, Room number: 10 ]
House:  2. [ Start position: 10, length: 12, heigth: 14, owner: Bill Jobs, color: Black, Room number: 7 ]
Playground: 3. [ Start position: 35,length: 4 ]
Market: 4. [ Start position: 48, length: 8, heigth: 9, owner: Tarkan bakkalciogli, Opening Time: 07.00, Closing Time: 21.00 ]
Office: 5. [ Start position: 58, length: 8, heigth: 9, owner: Iskender Buyuk, jobType: Mafia ]
-----------
Left:
Playground: 1. [ Start position: 0,length: 4 ]
House: 2. [ Start position: 5, length: 7, heigth: 4, owner: Steve Gates, color: Brown, Room number: 2 ]
Office: 3. [ Start position: 19, length: 11, heigth: 25, owner: Polat Alemdar, jobType: Diplomat ]
Office: 4. [ Start position: 53, length: 10, heigth: 14, owner: Omer Baba, jobType: Antique Shop ]

---------------------

1. Add new
2. Delete
3. Exit
1
Which one Do You Wanna add?
1. Office
2. House
3. Market
4. Playground
1
which side do you wanna add? Rigth-> 1, Left->2: 2
position:
35
length: 10
heigth: 10
owner: Mehmet Burak Koca
jobType: Professor
streetSize: 120
pos: 35
len: 10
```

```
New Office Added:
Added: [ Start position: 35, length: 10, heigth: 10, owner: Mehmet Burak Koca, jobType: Professor ]

------------EDITING MODE------------

Current state:

Rigth:
House:  1. [ Start position: 0, length: 7, heigth: 14, owner: Elon Husky, color: Bed, Room number: 10 ]
House:  2. [ Start position: 10, length: 12, heigth: 14, owner: Bill Jobs, color: Black, Room number: 7 ]
Playground: 3. [ Start position: 35,length: 4 ]
Market: 4. [ Start position: 48, length: 8, heigth: 9, owner: Tarkan bakkalciogli, Opening Time: 07.00, Closing Time: 21.0
Office: 5. [ Start position: 58, length: 8, heigth: 9, owner: Iskender Buyuk, jobType: Mafia ]
------------
Left:
Playground: 1. [ Start position: 0,length: 4 ]
House: 2. [ Start position: 5, length: 7, heigth: 4, owner: Steve Gates, color: Brown, Room number: 2 ]
Office: 3. [ Start position: 19, length: 11, heigth: 25, owner: Polat Alemdar, jobType: Diplomat ]
Office: 4. [ Start position: 35, length: 10, heigth: 10, owner: Mehmet Burak Koca, jobType: Professor ]
Office: 5. [ Start position: 53, length: 10, heigth: 14, owner: Omer Baba, jobType: Antique Shop ]

--------------------
```

- Adding building or playground to the filled area of street

```
------------EDITING MODE------------

Current state:

Rigth:
House:  1. [ Start position: 0, length: 7, heigth: 14, owner: Elon Husky, color: Bed, Room number: 10 ]
House:  2. [ Start position: 10, length: 12, heigth: 14, owner: Bill Jobs, color: Black, Room number: 7 ]
Playground: 3. [ Start position: 35,length: 4 ]
Market: 4. [ Start position: 48, length: 8, heigth: 9, owner: Tarkan bakkalciogli, Opening Time: 07.00, Closing Time: 21.00 ]
Office: 5. [ Start position: 58, length: 8, heigth: 9, owner: Iskender Buyuk, jobType: Mafia ]
------------
Left:
Playground: 1. [ Start position: 0,length: 4 ]
House: 2. [ Start position: 5, length: 7, heigth: 4, owner: Steve Gates, color: Brown, Room number: 2 ]
Office: 3. [ Start position: 19, length: 11, heigth: 25, owner: Polat Alemdar, jobType: Diplomat ]
Office: 4. [ Start position: 35, length: 10, heigth: 10, owner: Mehmet Burak Koca, jobType: Professor ]
Office: 5. [ Start position: 53, length: 10, heigth: 14, owner: Omer Baba, jobType: Antique Shop ]

--------------------

1. Add new
2. Delete
3. Exit
1
Which one Do You Wanna add?
1. Office
2. House
3. Market
4. Playground
4
which side do you wanna add? Rigth-> 1, Left->2: 2
poisiton: 35
length: 10
streetSize: 120
pos: 35
len: 10
There is already a building!!
```

```
------------EDITING MODE------------

Current state:

Rigth:
House:  1. [ Start position: 0, length: 7, heigth: 14, owner: Elon Husky, color: Bed, Room number: 10 ]
House:  2. [ Start position: 10, length: 12, heigth: 14, owner: Bill Jobs, color: Black, Room number: 7 ]
Playground: 3. [ Start position: 35,length: 4 ]
Market: 4. [ Start position: 48, length: 8, heigth: 9, owner: Tarkan bakkalciogli, Opening Time: 07.00, Closing Time: 21.00 ]
Office: 5. [ Start position: 58, length: 8, heigth: 9, owner: Iskender Buyuk, jobType: Mafia ]
------------
Left:
Playground: 1. [ Start position: 0,length: 4 ]
House: 2. [ Start position: 5, length: 7, heigth: 4, owner: Steve Gates, color: Brown, Room number: 2 ]
Office: 3. [ Start position: 19, length: 11, heigth: 25, owner: Polat Alemdar, jobType: Diplomat ]
Office: 4. [ Start position: 35, length: 10, heigth: 10, owner: Mehmet Burak Koca, jobType: Professor ]
Office: 5. [ Start position: 53, length: 10, heigth: 14, owner: Omer Baba, jobType: Antique Shop ]

--------------------

1. Add new
2. Delete
3. Exit
```

- Adding building or playground to the outside of street

```
Current state:

Rigth:
House:  1. [ Start position: 0, length: 7, heigth: 14, owner: Elon Husky, color: Bed, Room number: 10 ]
House:  2. [ Start position: 10, length: 12, heigth: 14, owner: Bill Jobs, color: Black, Room number: 7 ]
Playground: 3. [ Start position: 35,length: 4 ]
Market: 4. [ Start position: 48, length: 8, heigth: 9, owner: Tarkan bakkalciogli, Opening Time: 07.00, Closing Time: 21.00 ]
Office: 5. [ Start position: 58, length: 8, heigth: 9, owner: Iskender Buyuk, jobType: Mafia ]
------------
Left:
Playground: 1. [ Start position: 0,length: 4 ]
House: 2. [ Start position: 5, length: 7, heigth: 4, owner: Steve Gates, color: Brown, Room number: 2 ]
Office: 3. [ Start position: 19, length: 11, heigth: 25, owner: Polat Alemdar, jobType: Diplomat ]
Office: 4. [ Start position: 35, length: 10, heigth: 10, owner: Mehmet Burak Koca, jobType: Professor ]
Office: 5. [ Start position: 53, length: 10, heigth: 14, owner: Omer Baba, jobType: Antique Shop ]

---------------------

1. Add new
2. Delete
3. Exit
1
Which one Do You Wanna add?
1. Office
2. House
3. Market
4. Playground
3
which side do you wanna add? Rigth-> 1, Left->2: 1
poisiton:
250
length: 12
heigth: 12
Owner: No One Knows
Opening time: 07.00
Closing Time: 21.00
streetSize: 120
pos: 250
len: 12
ERROR: Given Structure's size exceeded the Street size
          EDITING MODE
```

Deleting properly:

```
------------EDITING MODE------------

Current state:

Rigth:
House:   1. [ Start position: 0, length: 7, heigth: 14, owner: Elon Husky, color: Bed, Room number: 10 ]
House:   2. [ Start position: 10, length: 12, heigth: 14, owner: Bill Jobs, color: Black, Room number: 7 ]
Playground: 3. [ Start position: 35,length: 4 ]
Market: 4. [ Start position: 48, length: 8, heigth: 9, owner: Tarkan bakkalciogli, Opening Time: 07.00, Closing Time: 21.00 ]
Office: 5. [ Start position: 58, length: 8, heigth: 9, owner: Iskender Buyuk, jobType: Mafia ]
------------
Left:
Playground: 1. [ Start position: 0,length: 4 ]
House: 2. [ Start position: 5, length: 7, heigth: 4, owner: Steve Gates, color: Brown, Room number: 2 ]
Office: 3. [ Start position: 19, length: 11, heigth: 25, owner: Polat Alemdar, jobType: Diplomat ]
Office: 4. [ Start position: 35, length: 10, heigth: 10, owner: Mehmet Burak Koca, jobType: Professor ]
Office: 5. [ Start position: 53, length: 10, heigth: 14, owner: Omer Baba, jobType: Antique Shop ]

--------------------

1. Add new
2. Delete
3. Exit
2
From which side would you like to delete? Rigth-> 1, Left->2: 2
Enter the Structure's start  position
19

Deleted:
[ Start position: 19, length: 11, heigth: 25, owner: Polat Alemdar, jobType: Diplomat ]

Removed: [ Start position: 19, length: 11, heigth: 25, owner: Polat Alemdar, jobType: Diplomat ]
```

```
------------EDITING MODE------------

Current state:

Rigth:
House:   1. [ Start position: 0, length: 7, heigth: 14, owner: Elon Husky, color: Bed, Room number: 10 ]
House:   2. [ Start position: 10, length: 12, heigth: 14, owner: Bill Jobs, color: Black, Room number: 7 ]
Playground: 3. [ Start position: 35,length: 4 ]
Market: 4. [ Start position: 48, length: 8, heigth: 9, owner: Tarkan bakkalciogli, Opening Time: 07.00, Closing Time: 21.00 ]
Office: 5. [ Start position: 58, length: 8, heigth: 9, owner: Iskender Buyuk, jobType: Mafia ]
------------
Left:
Playground: 1. [ Start position: 0,length: 4 ]
House: 2. [ Start position: 5, length: 7, heigth: 4, owner: Steve Gates, color: Brown, Room number: 2 ]
Office: 3. [ Start position: 35, length: 10, heigth: 10, owner: Mehmet Burak Koca, jobType: Professor ]
Office: 4. [ Start position: 53, length: 10, heigth: 14, owner: Omer Baba, jobType: Antique Shop ]

--------------------

1. Add new
2. Delete
3. Exit
2
From which side would you like to delete? Rigth-> 1, Left->2: 2
Enter the Structure's start  position
0

Deleted:
[ Start position: 0,length: 4 ]

Removed: [ Start position: 0,length: 4 ]
```

```
------------EDITING MODE------------

Current state:

Rigth:
House:   1. [ Start position: 0, length: 7, heigth: 14, owner: Elon Husky, color: Bed, Room number: 10 ]
House:   2. [ Start position: 10, length: 12, heigth: 14, owner: Bill Jobs, color: Black, Room number: 7 ]
Playground: 3. [ Start position: 35,length: 4 ]
Market: 4. [ Start position: 48, length: 8, heigth: 9, owner: Tarkan bakkalciogli, Opening Time: 07.00, Closing Time: 21.00 ]
Office: 5. [ Start position: 58, length: 8, heigth: 9, owner: Iskender Buyuk, jobType: Mafia ]
------------
Left:
House: 1. [ Start position: 5, length: 7, heigth: 4, owner: Steve Gates, color: Brown, Room number: 2 ]
Office: 2. [ Start position: 35, length: 10, heigth: 10, owner: Mehmet Burak Koca, jobType: Professor ]
Office: 3. [ Start position: 53, length: 10, heigth: 14, owner: Omer Baba, jobType: Antique Shop ]

--------------------

1. Add new
2. Delete
3. Exit
```

- Deleting building from outside of the street

```
------------EDITING MODE------------

Current state:

Rigth:
House:   1. [ Start position: 0, length: 7, heigth: 14, owner: Elon Husky, color: Bed, Room number: 10 ]
House:   2. [ Start position: 10, length: 12, heigth: 14, owner: Bill Jobs, color: Black, Room number: 7 ]
Playground: 3. [ Start position: 35,length: 4 ]
Office: 4. [ Start position: 58, length: 8, heigth: 9, owner: Iskender Buyuk, jobType: Mafia ]
------------
Left:
Office: 1. [ Start position: 53, length: 10, heigth: 14, owner: Omer Baba, jobType: Antique Shop ]

--------------------

1. Add new
2. Delete
3. Exit
2
From which side would you like to delete? Rigth-> 1, Left->2: 1
Enter the Structure's start  position
1200
ERROR: Given Structure's size exceeded the Street size
------------EDITING MODE------------

Current state:

Rigth:
House:   1. [ Start position: 0, length: 7, heigth: 14, owner: Elon Husky, color: Bed, Room number: 10 ]
House:   2. [ Start position: 10, length: 12, heigth: 14, owner: Bill Jobs, color: Black, Room number: 7 ]
Playground: 3. [ Start position: 35,length: 4 ]
Office: 4. [ Start position: 58, length: 8, heigth: 9, owner: Iskender Buyuk, jobType: Mafia ]
------------
Left:
Office: 1. [ Start position: 53, length: 10, heigth: 14, owner: Omer Baba, jobType: Antique Shop ]

--------------------
```

- Displaying the total remaining length of lands on the street

```
Rigth:
House:   1. [ Start position: 0, length: 7, heigth: 14, owner: Elon Husky, color: Bed, Room number: 10 ]
House:   2. [ Start position: 10, length: 12, heigth: 14, owner: Bill Jobs, color: Black, Room number: 7 ]
Playground: 3. [ Start position: 35,length: 4 ]
Market: 4. [ Start position: 48, length: 8, heigth: 9, owner: Tarkan bakkalciogli, Opening Time: 07.00, Closing Time: 21.00 ]
Office: 5. [ Start position: 58, length: 8, heigth: 9, owner: Iskender Buyuk, jobType: Mafia ]
------------
Left:
Playground: 1. [ Start position: 0,length: 4 ]
House: 2. [ Start position: 5, length: 7, heigth: 4, owner: Steve Gates, color: Brown, Room number: 2 ]
Office: 3. [ Start position: 19, length: 11, heigth: 25, owner: Polat Alemdar, jobType: Diplomat ]
Office: 4. [ Start position: 53, length: 10, heigth: 14, owner: Omer Baba, jobType: Antique Shop ]

1. Display Remaining length of Land
2. Display the list of buildings on the street.
3. Display the number and ratio of lenth of playgrounds in the street.
4. Total length of street occupied by the markets, houses and offices.
5. Display the skyline silhouette of the street
6. Exit
1
on the Rigth Side: 81
on the Left Side: 88
Total Remaining: 169
```

- Displaying the list of buildings on the street

```
1. Editing Mode
2. Viewing Mode
3. Focusing Mode
4. Exit
2
1. Display Remaining length of Land
2. Display the list of buildings on the street.
3. Display the number and ratio of lenth of playgrounds in the street.
4. Total length of street occupied by the markets, houses and offices.
5. Display the skyline silhouette of the street
6. Exit
2
Rigth:
House:  1. [ Start position: 0, length: 7, heigth: 14, owner: Elon Husky, color: Bed, Room number: 10 ]
House:  2. [ Start position: 10, length: 12, heigth: 14, owner: Bill Jobs, color: Black, Room number: 7 ]
Playground: 3. [ Start position: 35,length: 4 ]
Market: 4. [ Start position: 48, length: 8, heigth: 9, owner: Tarkan bakkalciogli, Opening Time: 07.00, Closing Time: 21.00 ]
Office: 5. [ Start position: 58, length: 8, heigth: 9, owner: Iskender Buyuk, jobType: Mafia ]
-----------
Left:
Playground: 1. [ Start position: 0,length: 4 ]
House: 2. [ Start position: 5, length: 7, heigth: 4, owner: Steve Gates, color: Brown, Room number: 2 ]
Office: 3. [ Start position: 19, length: 11, heigth: 25, owner: Polat Alemdar, jobType: Diplomat ]
Office: 4. [ Start position: 53, length: 10, heigth: 14, owner: Omer Baba, jobType: Antique Shop ]
```

- Display the number and ratio of length of playgrounds

```
Rigth:
House:  1. [ Start position: 0, length: 7, heigth: 14, owner: Elon Husky, color: Bed, Room number: 10 ]
House:  2. [ Start position: 10, length: 12, heigth: 14, owner: Bill Jobs, color: Black, Room number: 7 ]
Playground: 3. [ Start position: 35,length: 4 ]
Market: 4. [ Start position: 48, length: 8, heigth: 9, owner: Tarkan bakkalciogli, Opening Time: 07.00, Closing Time: 21.00 ]
Office: 5. [ Start position: 58, length: 8, heigth: 9, owner: Iskender Buyuk, jobType: Mafia ]
-----------
Left:
Playground: 1. [ Start position: 0,length: 4 ]
House: 2. [ Start position: 5, length: 7, heigth: 4, owner: Steve Gates, color: Brown, Room number: 2 ]
Office: 3. [ Start position: 19, length: 11, heigth: 25, owner: Polat Alemdar, jobType: Diplomat ]
Office: 4. [ Start position: 53, length: 10, heigth: 14, owner: Omer Baba, jobType: Antique Shop ]

1. Display Remaining length of Land
2. Display the list of buildings on the street.
3. Display the number and ratio of lenth of playgrounds in the street.
4. Total length of street occupied by the markets, houses and offices.
5. Display the skyline silhouette of the street
6. Exit
3
Playground number: 2
Ratio of lenth of playgrounds: 0.033333335 (8.0/240)
```

- Display the total length of street occupied by the markets, houses or offices

```
Rigth:
House:  1. [ Start position: 0, length: 7, heigth: 14, owner: Elon Husky, color: Bed, Room number: 10 ]
House:  2. [ Start position: 10, length: 12, heigth: 14, owner: Bill Jobs, color: Black, Room number: 7 ]
Playground: 3. [ Start position: 35,length: 4 ]
Market: 4. [ Start position: 48, length: 8, heigth: 9, owner: Tarkan bakkalciogli, Opening Time: 07.00, Closing Time: 21.00 ]
Office: 5. [ Start position: 58, length: 8, heigth: 9, owner: Iskender Buyuk, jobType: Mafia ]
-----------
Left:
Playground: 1. [ Start position: 0,length: 4 ]
House: 2. [ Start position: 5, length: 7, heigth: 4, owner: Steve Gates, color: Brown, Room number: 2 ]
Office: 3. [ Start position: 19, length: 11, heigth: 25, owner: Polat Alemdar, jobType: Diplomat ]
Office: 4. [ Start position: 53, length: 10, heigth: 14, owner: Omer Baba, jobType: Antique Shop ]

1. Display Remaining length of Land
2. Display the list of buildings on the street.
3. Display the number and ratio of lenth of playgrounds in the street.
4. Total length of street occupied by the markets, houses and offices.
5. Display the skyline silhouette of the street
6. Exit
4
Office: 29
Market: 8
House: 26
Total length of all markets,offices,houses: 63
```

- Focusing on a building or playground

```
Rigth:
House:  1. [ Start position: 0, length: 7, heigth: 14, owner: Elon Husky, color: Bed, Room number: 10 ]
House:  2. [ Start position: 10, length: 12, heigth: 14, owner: Bill Jobs, color: Black, Room number: 7 ]
Playground: 3. [ Start position: 35,length: 4 ]
Market: 4. [ Start position: 48, length: 8, heigth: 9, owner: Tarkan bakkalciogli, Opening Time: 07.00, Closing Time: 21.00 ]
Office: 5. [ Start position: 58, length: 8, heigth: 9, owner: Iskender Buyuk, jobType: Mafia ]
-----------
Left:
Playground: 1. [ Start position: 0,length: 4 ]
House: 2. [ Start position: 5, length: 7, heigth: 4, owner: Steve Gates, color: Brown, Room number: 2 ]
Office: 3. [ Start position: 19, length: 11, heigth: 25, owner: Polat Alemdar, jobType: Diplomat ]
Office: 4. [ Start position: 53, length: 10, heigth: 14, owner: Omer Baba, jobType: Antique Shop ]

1. Focus on a specific  House
2. Focus on a specific  Offices
3. Focus on a specific  Markets
4. Focus on a specific  Playgrounds
5. Exit
1
which side do you wanna look at? Rigth-> 1, Left->2: 1
Enter Start Position: 0
Owner: Elon Husky
```