

**GTU Department of Computer Engineering
CSE 222/505 - Spring 2022
Homework #01 Report**

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1.Detailed System Requirements

First of all to use the CityPlanner program user must give length number for **Street** length. Also user interface Provides options to the user to use the program.

For example:

```
Please enter street length:
70
1->Editing Mode
2->Viewing Mode
3->Exit
Please select program mode:
1
1->Adding new element
2->Deleting one element from last
3->Go previous menu
Please select :
1
1->Adding a House
2->Adding a Market
3->Adding a Office
4->Adding a Playground
5->Go Previous Menu
Please select :
1
Please enter side number 0 for back 1 for front:
0
Please enter position number:
0
Please enter Height number:
10
Please enter Length number:
10
Please enter Room number:
3
Please enter owner of the house:
Ali
Please enter color of the house:
Purple
Adding operation done successfully
```

```
buildTypes house1 = new house( pos: 0 , hei: 10 , len: 10 , rooms: 3 , owner: "Ali" , color: "Purple");
```

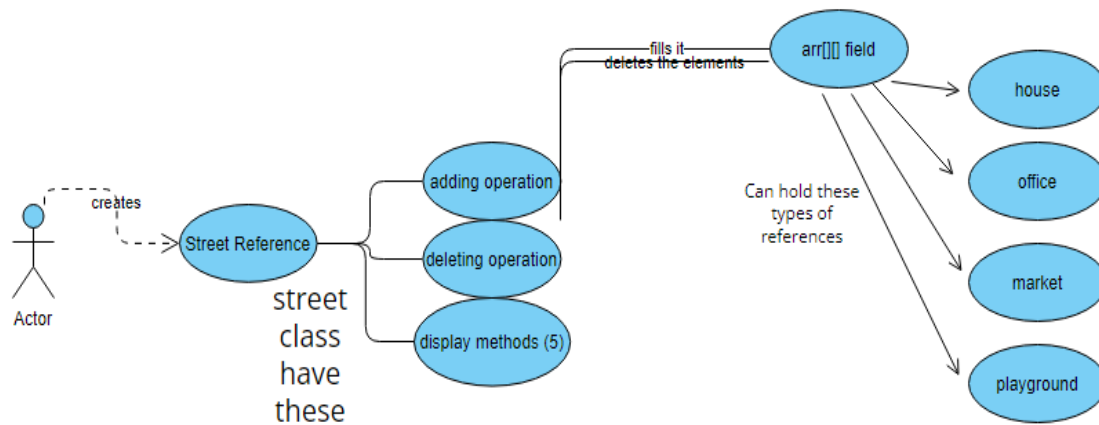
In here program create an house reference with these properties.

After these program add that reference to the array which is;

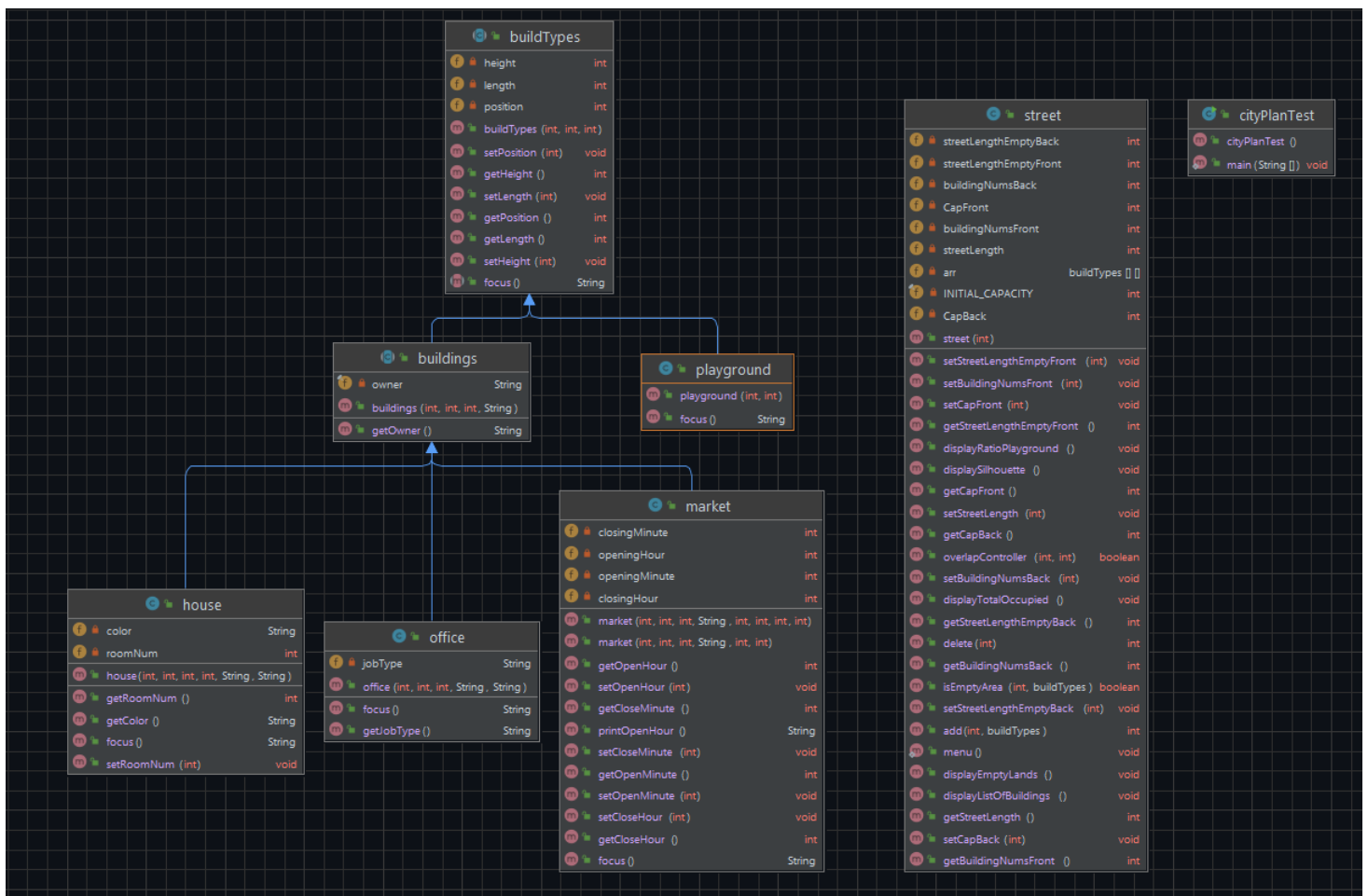
```
private buildTypes[][] arr;
mainStreet.add( borf: 1, house1);
```

borf parameter indicates side of the Street (0->back side , 1->front side)

2. The Project use case diagrams



3. Class Diagrams



4. Problem Solution approach

To hold the data properly i need an array but what type it should be and and what size should it be?

First houses , markets and offices are building type in real life and playgrounds stay out of these because of this reason i need another superclass which is also superclass of buildings class and playground class and its name is buildTypes. house, market and office classes extends buildings class and buildings class extends buildType class. Also playground class extends buildTypes class too.

To hold all of these types my array's type need to be buildTypes type

```
/**Keeps buildTypes references*/  
private buildTypes[][] arr;
```

Then my array need to have 2 rows ([0] for back side of the Street [1] for front side of the street)

```
arr = new buildTypes[2][];  
arr[0] = new buildTypes[getCapBack()];  
arr[1] = new buildTypes[getCapFront()];
```

I kept this array inside a data holder class which is **Street** for easier working

I wrote my methods in **Street** class.

```
public int add(int borf, buildTypes newBuild) {  
    int ans = 0;
```

```
public int delete(int borf) {
```

5. Test Cases

Create a Street which have 50 length;

```
street mainStreet = new street( newLength: 50);
```

Open an house reference with these properties;

```
System.out.println("Let's open a house reference which have following properties ; ");
System.out.println("Let its name be house1 , its Position be 0 , its Height be 10 , its Length be 10 ,\n" +
    " its Room number be 3 , its Owner be Ali and its color be Purple\n");
buildTypes house1 = new house( pos: 0 , hei: 10 , len: 10 , rooms: 3 , owner: "Ali" , color: "Purple");
```

Open another house reference but its length value is longer than Street length

```
buildTypes test123 = new house( pos: 30 , hei: 10 , len: 125 , rooms: 3 , owner: "test" , color: "test");
```

```
System.out.println("First ,Let's try to call delete() method to see the error message when street has no building :");
mainStreet.delete( borf: 1);
```

```
System.out.println("Secondly ,Let's try to add house that is longer than the length of the street \n" +
    "with add() method to see the error message: ");
mainStreet.add( borf: 1, test123);
```

```
First ,Let's try to call delete() method to see the error message when street has no building :
Deleting operation failed there is no building on this side!!
```

```
Secondly ,Let's try to add house that is longer than the length of the street
with add() method to see the error message:
The empty area of the front side of the street is not enough for this action!!
Adding operation failed !!
```

```
20
Please enter owner of the market:
gdf
Please enter opening hour:
543
INVALID
1->Editing Mode
2->Viewing Mode
3->Exit
Please select program mode:
1
1->Adding new element
2->Deleting one element from last
3->Go previous menu
Please select :
1
1->Adding a House
2->Adding a Market
3->Adding a Office
4->Adding a Playground
5->Go Previous Menu
Please select :

2
Please enter side number 0 for back 1 for front:
0
Please enter position number:
23
Please enter Height number:
23
Please enter Length number:
23
Please enter owner of the market:
drfs
Please enter opening hour:
23
Please enter opening minute:
234
INVALID
1->Editing Mode
```

Also Drive code testing many other approaches..

5. Running command and results

```
Please enter street length:
50
1->Editing Mode
2->Viewing Mode
3->Exit
Please select program mode:
1
1->Adding new element
2->Deleting one element from last
3->Go previous menu
Please select :
1
1->Adding a House
2->Adding a Market
3->Adding a Office
4->Adding a Playground
5->Go Previous Menu
Please select :
1
Please enter side number 0 for back 1 for front:
0
Please enter position number:
0
Please enter Height number:
20
Please enter Length number:
15
Please enter Room number:
16
Please enter owner of the house:
Ali
Please enter color of the house:
Red
Adding operation done successfully
```

```
1->Editing Mode
2->Viewing Mode
3->Exit
Please select program mode:
1
1->Adding new element
2->Deleting one element from last
3->Go previous menu
Please select :
1
1->Adding a House
2->Adding a Market
3->Adding a Office
4->Adding a Playground
5->Go Previous Menu
Please select :

3
Please enter side number 0 for back 1 for front:
0
Please enter position number:
18
Please enter Height number:
23
Please enter Length number:
12
Please enter owner of the office:
Dany
Please enter job type of the office:
Software Development
Adding operation done successfully
```



```
W 1->Adding a House
n 2->Adding a Market
  3->Adding a Office
  4->Adding a Playground
  5->Go Previous Menu
  Please select :

2
Please enter side number 0 for back 1 for front:
0
Please enter position number:
5
Please enter Height number:
24
Please enter Length number:
23
Please enter owner of the market:
deneme
Please enter opening hour:
9
Please enter opening minute:
0
Please enter closing hour:
23
Please enter closing minute:
59
The specified land is already occupied !!
Adding operation failed !!
```

```
1 1->Adding a House
  2->Adding a Market
  3->Adding a Office
  4->Adding a Playground
  5->Go Previous Menu
  Please select :

2
Please enter side number 0 for back 1 for front:
1
Please enter position number:
15
Please enter Height number:
24
Please enter Length number:
17
Please enter owner of the market:
Kaya
Please enter opening hour:
8
Please enter opening minute:
50
Please enter closing hour:
23
Please enter closing minute:
50
Adding operation done successfully
```

```
Please select program mode:
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->Display the total length of street occupied by the markets, houses or offices
  5->Display the Skyline Silhouette of the street
  6->Go Previous Menu
Please select :

1

Total remaining length of lands:
w Back side of the street: 23
m Front side of the street: 33
  1->Editing Mode
  2->Viewing Mode
  3->Exit
Please select program mode:
4
Wrong Input

  1->Editing Mode
  2->Viewing Mode
  3->Exit
Please select program mode:
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->Display the total length of street occupied by the markets, houses or offices
  5->Display the Skyline Silhouette of the street
  6->Go Previous Menu
Please select :

4

Total length of street occupied by ;
Houses: 15
Markets: 17
Offices: 12
```

```
1->Editing Mode
2->Viewing Mode
3->Exit
Please select program mode:
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->Display the total length of street occupied by the markets, houses or offices
5->Display the Skyline Silhouette of the street
6->Go Previous Menu
Please select :
2

Features of Ali's house ;
Owner printing with focus method!
Color: Red
Number of rooms: 16
Position: 0
Height of the house: 20
Length of the house: 15

Features of Dany's office ;
Job Type of the office: Software Development (printing with focus method)
Position: 18
Height of the office: 23
Length of the office: 12

Features of Kaya's market ;
Opening time: 08:50
Closing time: 23:50 (printing with focus method)
Position: 15
Height of the market: 24
Length of the market: 17
```

```
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->Display the total length of street occupied by the markets, houses or offices
5->Display the Skyline Silhouette of the street
6->Go Previous Menu
Please select :
```

5



```

1->Adding new element
2->Deleting one element from last
3->Go previous menu
Please select :
1
  1->Adding a House
  2->Adding a Market
  3->Adding a Office
  4->Adding a Playground
  5->Go Previous Menu
Please select :
4
Please enter side number 0 for back 1 for front:
0
Please enter position number:
30
Please enter Length number:
15
Adding operation done successfully

1->Editing Mode
2->Viewing Mode
3->Exit
Please select program mode:
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->Display the total length of street occupied by the markets, houses or offices
  5->Display the Skyline Silhouette of the street
  6->Go Previous Menu
Please select :
3

Total length of the playgrounds in the street: 15
Ratio of length of playgrounds in the street: 0.150000
1->Editing Mode

```



Another Street i made.

