

GIT Department of Computer Engineering
CSE 222/505 - Spring 2022
Homework #3 Report

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1. SYSTEM REQUIREMENTS

Functional Requierements

Street: Street can add or remove building.

Street can add or remove playground.

Street can show information about structures.

Non-Functional Requirements

1)Performance

2)Security

3)Scalability

2. USE CASE AND CLASS DIAGRAMS

Class diagrams are added in '/ClassDiagramsHW3' folder as '.png' for each folder of Homework 3.

3. PROBLEM SOLUTION APPROACH

The problem was same with HW1. I just changed array to wanted structures. For 'ArrayList' and 'LinkedList', there was no big problem cause it's already in the Java Collections Framework. At the 'LDLinkedList' part I implement LDLinkedList with the help of method's showed in class (which are already in the slides).

4. TEST CASES

For test cases I added manually n and 10n times structures for hw1 and 3 version of hw3 separately and then deleted them. Calculated time for every test. Test Results added in next chapter.

5. RUNNING AND RESULTS

Simple Array

```
Office Added.
```

```
10 structure added to street in milli seconds(Simple Arrays): 0.6596
```

```
Press 1 for edit menu, press 2 for viewing menu!
```

```
10 structure deleted from street in milli seconds(Simple Arrays): 0.1273
```

```
Press 1 for edit menu, press 2 for viewing menu!
```

```
Press 99 for exit the program.
```

```
100 structure added to street in milli seconds(Simple Arrays): 4.3104
Office is deleted.
Office is deleted.
Office is deleted.
```

```
100 structure deleted from street in milli seconds(Simple Arrays): 0.941
Press 1 for edit menu, press 2 for viewing menu!
Press 99 for exit the program.
```

ArrayList

```
10 structure added to street in milli seconds(ArrayList): 2.3653
Office is deleted.
Office is deleted.
Office is deleted.
Office is deleted.
```

<

```
10 structure deleted from street in milli seconds(ArrayList): 0.3039
Press 1 for edit menu, press 2 for viewing menu!(ARRLIST)
Press 99 for exit the program.
```

<

```
100 structure added to street in milli seconds(ArrayList): 15.438
```

<

```
100 structure deleted from street in milli seconds(ArrayList): 0.5512
Press 1 for edit menu, press 2 for viewing menu!(ARRLIST)
Press 99 for exit the program.
```

<

LinkedList

```
10 structure added to street in milli seconds(LinkedList): 2.8728
Office is deleted.
```

<

```
10 structure deleted from street in milli seconds(LinkedList): 0.1339
Press 1 for edit menu, press 2 for viewing menu!(LinkedList)
Press 99 for exit the program.
```

<

```
100 structure added to street in milli seconds(LinkedList): 18.5616
Office is deleted
<
```

```
100 structure deleted from street in milli seconds(LinkedList): 0.6125
Press 1 for edit menu, press 2 for viewing menu!(LinkedList)
Press 99 for exit the program.
<
```

LDLinkedList

```
Office Added.
Office Added.
Office Added.
10 structure added to street in milli seconds(LDLinkedList): 30.9467
<
```

```
10 structure deleted from street in milli seconds(LDLinkedList): 0.1489
Press 1 for edit menu, press 2 for viewing menu!(LDLinkedList)
Press 99 for exit the program.
<
```

```
Office Added.
Office Added.
100 structure added to street in milli seconds(LDLinkedList): 302.7785
Office is deleted
<
```

```
100 structure deleted from street in milli seconds(LDLinkedList): 0.695
Press 1 for edit menu, press 2 for viewing menu!(LDLinkedList)
Press 99 for exit the program.
```