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March 26, 2020
J00813814
Exam 2

1.)

```
Enter the number of elements you want to enqueue: 10
Enter the maximum value for an element: 100
Elements enqueued: 90 73 77 82 16 1 62 32 30 70
Queue before the insertion
90 73 77 82 16 1 62 32 30 70
Enter the data to insert: 20
Enter the index to insert: 4
Queue after the insertion
90 73 77 82 20 16 1 62 32 30 70
Enter the index to delete: 7
Queue after the deletion
90 73 77 82 20 16 1 32 30 70
sh: pause: command not found
Program ended with exit code: 0
```

```
Enter the number of elements you want to enqueue: 10
1Enter the maximum value for an element: 00
Elements enqueued: 87 71 97 34 69 27 10 18 11 89
Queue before the insertion
87 71 97 34 69 27 10 18 11 89
Enter the data to insert: 2
Enter the index to insert: 9
Queue after the insertion
87 71 97 34 69 27 10 18 11 2 89
Enter the index to delete: 0
Queue after the deletion
71 97 34 69 27 10 18 11 2 89
sh: pause: command not found
Program ended with exit code: 0
```

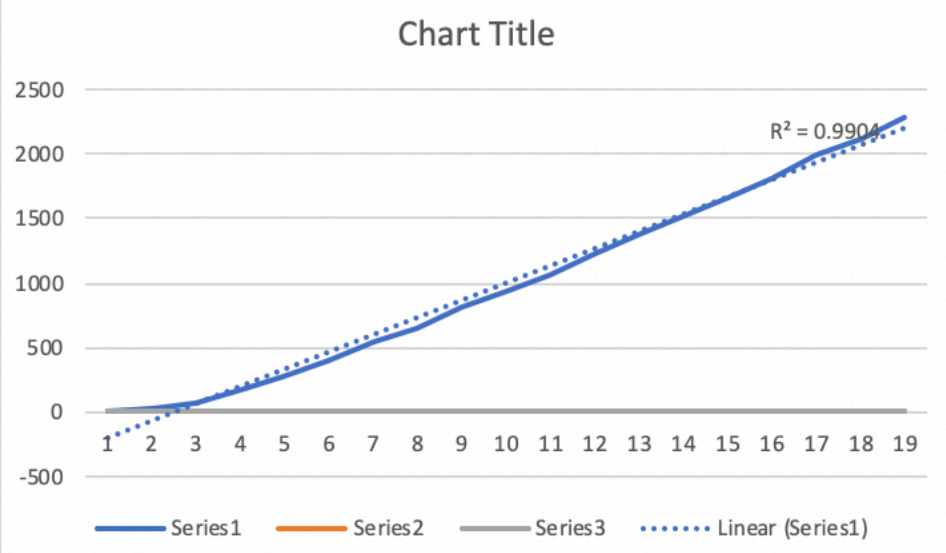
```
Enter the number of elements you want to enqueue: 10
Enter the maximum value for an element: 100
Elements enqueued: 63 80 64 74 17 18 61 60 13 93
Queue before the insertion
63 80 64 74 17 18 61 60 13 93
Enter the data to insert: 10
Enter the index to insert: 0
Queue after the insertion
10 63 80 64 74 17 18 61 60 13 93
Enter the index to delete: 10
Queue after the deletion
10 63 80 64 74 17 18 61 60 13
sh: pause: command not found
Program ended with exit code: 0
```

```
Enter the number of elements you want to enqueue: 10
Enter the maximum value for an element: 100
Elements enqueued: 6 99 2 82 65 76 23 31 42 19
Queue before the insertion
6 99 2 82 65 76 23 31 42 19
Enter the data to insert: 6
Enter the index to insert: 9
Queue after the insertion
6 99 2 82 65 76 23 31 42 6 19
Enter the index to delete: 1
Queue after the deletion
6 2 82 65 76 23 31 42 6 19
sh: pause: command not found
Program ended with exit code: 0
```

```
Enter the number of elements you want to enqueue: 10
Enter the maximum value for an element: 100
Elements enqueued: 83 13 26 9 42 95 30 5 58 90
Queue before the insertion
83 13 26 9 42 95 30 5 58 90
Enter the data to insert: 10
Enter the index to insert: 0
Queue after the insertion
10 83 13 26 9 42 95 30 5 58 90
Enter the index to delete: 9
Queue after the deletion
10 83 13 26 9 42 95 30 5 90
sh: pause: command not found
Program ended with exit code: 0
```

2.)

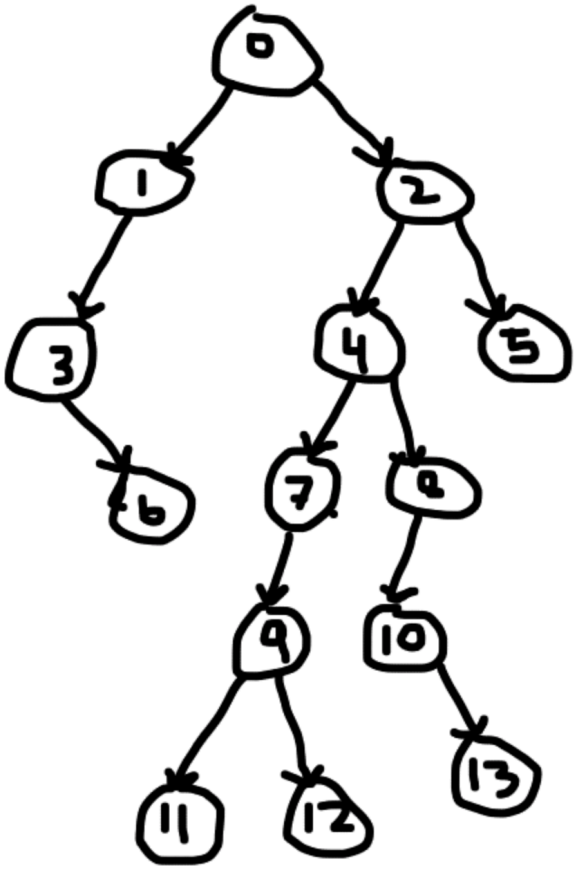
```
11 0 0
29 0 0
47 0 0
71 0 0
173 0 0
281 0 0
409 0 0
541 0 0
659 0 0
809 0 0
941 0 0
1069 0 0
1223 0 0
1373 0 0
1511 0 0
1657 0 0
1811 0 0
1987 0 0
2129 0 0
2287 0 0
sh: pause: command not found
Program ended with exit code: 0
```

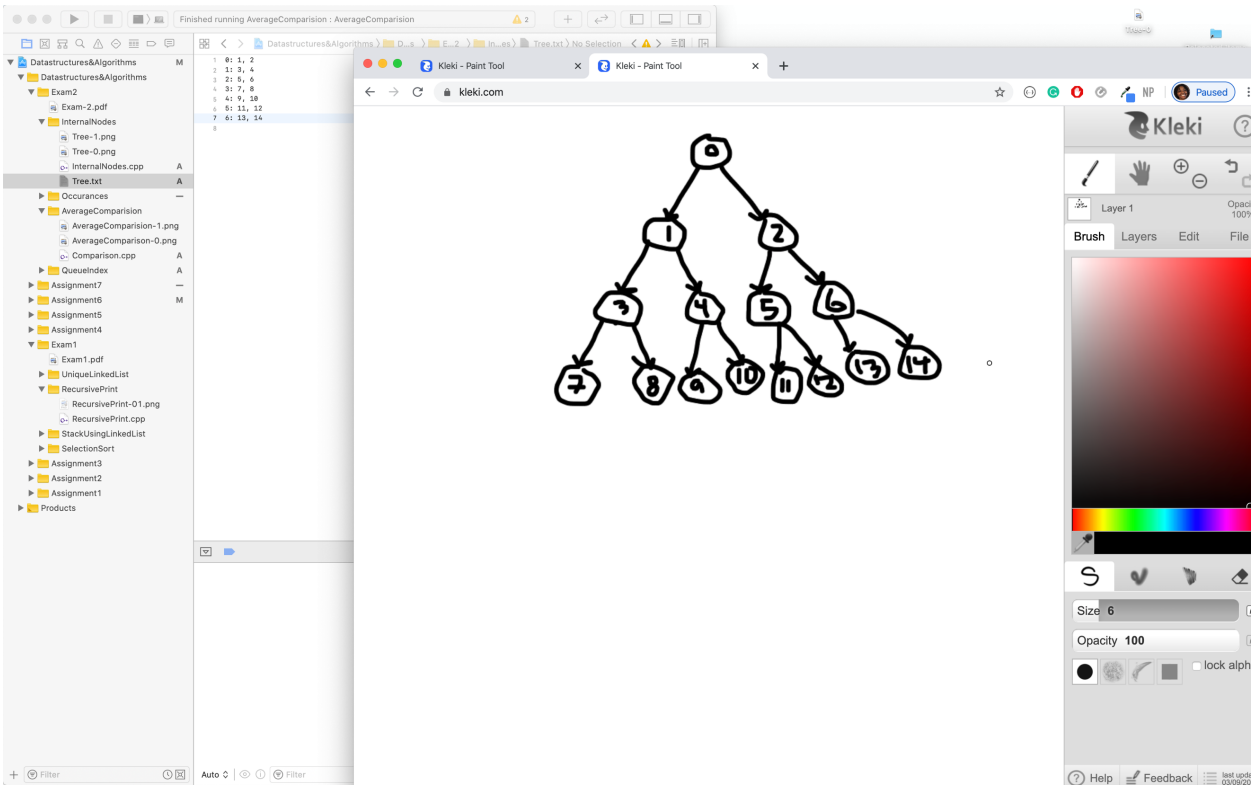


3.)

```
Enter the number of elements you want to store in the hash table: 30
Enter the maximum value for an element: 20
Enter the size of the hash table: 11
Elements generated: 13 17 3 18 17 7 12 6 9 3 6 12 13 8 9 6 5 5 8 7 10 9 9 9 2 7 16 17 19 3
Elements and their number of occurances
2, 1
3, 3
5, 2
6, 3
7, 3
8, 2
9, 5
10, 1
12, 2
13, 2
16, 1
17, 3
18, 1
19, 1
Program ended with exit code: 0
```

4.)




Finished running AverageComparision : AverageComparision
Datastructures&Algorithms
Exam2
Exam-2.pdf
InternalNodes
Tree-1.png
Tree-0.png
InternalNodes.cpp
Tree.txt
Occurances
AverageComparision
AverageComparision-1.png
AverageComparison-0.png
Comparison.cpp
QueueIndex
Assignment7
Assignment6
Assignment5
Assignment4
Exam1
Exam1.pdf
UniqueLinkedList
RecursivePrint
RecursivePrint-01.png
RecursivePrint.cpp
StackUsingLinkedList
SelectionSort
Assignment3
Assignment2
Assignment1
Products
0: 1, 2
1: 3, 4
2: 5, 6
3: 7, 8
4: 9, 10
5: 11, 12
6: 13, 14
Kleki - Paint Tool
kleki.com
Paused
Kleki
Layer 1
Brush
Layers
Edit
File
Size 6
Opacity 100
Help
Feedback

```
0: 1, 2
1: 3, 4
2: 5, 6
3: 7, 8
4: 9, 10
5: 11, 12
6: 13, 14

```

```
Enter a file name:
    /Users/incrediblekyla/Documents/School/Spring2020/Datastructures&Algorithms/Homeworks/Datastruct
    ures&Algorithms/Datastructures&Algorithms/Exam2/InternalNodes/Tree.txt
Enter number of nodes: 15
The binary tree is a complete binary tree
sh: pause: command not found
Program ended with exit code: 0
```

```
0: 1, 2
1: 3, -1
2: 4, 5
3: -1, 6
4: 7, 8
7: 9, -1
8: 10, -1
9: 11, 12
10: -1, 13

```

```
Enter a file name:
    /Users/incrediblekyla/Documents/School/Spring2020/Datastructures&Algorithms/Homeworks/Datastructures&Algorithms/Datastructures&Algorithms/Exa
    m2/InternalNodes/Tree.txt
Enter number of nodes: 13
The binary tree is not a complete binary tree
sh: pause: command not found
Program ended with exit code: 0
```