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COSC 220

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Lab 13 writeup

Compile and Build in linux environment

```
root@DESKTOP-Q5H0GRD:/mnt/d/Documents/School/Year 3 semester 2/Cosc 220 computer science 2/labs/Lab_13/Binary_search_tree# g++ -c main.cpp
root@DESKTOP-Q5H0GRD:/mnt/d/Documents/School/Year 3 semester 2/Cosc 220 computer science 2/labs/Lab_13/Binary_search_tree# g++ main.o -o lab_13
root@DESKTOP-Q5H0GRD:/mnt/d/Documents/School/Year 3 semester 2/Cosc 220 computer science 2/labs/Lab_13/Binary_search_tree# ./lab_13
```

Working Menu interface

```
Enter Your Choice
1: Insert 10 random numbers
2: Traverse the tree
3: Search and Print Node
4: Show Smallest Value
5: Show Largest Value
6: Show number of leaves
7: Exit The Program
```

Insert 10 numbers

```
Enter Your Choice
1: Insert 10 random numbers
2: Traverse the tree
3: Search and Print Node
4: Show Smallest Value
5: Show Largest Value
6: Show number of leaves
7: Exit The Program
1
```

Tree Traversals

PreOrder

```
2
1: Preorder
2: Inorder
3: PostOrder
1
84 78 16 36 22 50 63 87 94 93
```

InOrder

```
2
1: Preorder
2: Inorder
3: PostOrder
2
16 22 36 50 63 78 84 87 93 94
```

PostOrder

```
2
1: Preorder
2: Inorder
3: PostOrder
3
22 63 50 36 16 78 93 94 87 84
```

Search and Print e

```
3
Enter the value you would like to search for
63
Value
63
Parent
50
Left
Null
Right
Null
```

Lets try it with a value that isn't there

```
5
Enter the value you would like to search for
5
This value is not in the tree
```

Show the smallest value

```
7: EXIT The Program
4
Smallest Value
16
```

Show Largest Value

```
7: Exit The Program
5
Largest Value
94
```

Show Leaves

```
6: Show number of leaves
7: Exit The Program
6
Number of Leaves:
3
```

Exit the program

```
5: Show Largest Value
6: Show number of leaves
7: Exit The Program
7
root@DESKTOP-Q5H0GRD:/mnt/d/Documents/School/Year 3 semester 2/Cosc 220 computer science 2/labs/Lab_13/Binary_search_tree# |
```