Lab 8 Test Runs

**[Run1](#Run1)**

[**Run2**](#Run2)

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**Run1**

norsini1@LAPTOP-SHQGQOEO:/mnt/c/Users/Nicholas Orsini/Source/repos/Lab8/Lab8$ ./Lab8

| Main Menu |

|Input a corresponding option |

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

|1. Open Insert Elements Menu |

|2. Open Delete Elements Menu |

|3. Open Print Menu |

|4. Miscellaneous Checking |

|5. Options |

|6. Quit |

|Make Input: 1

1

| Insert Menu |

|Input a corresponding option |

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

|1. Insert Single Element |

|2. Insert Several Elements |

|3. Return to Menu |

|Make Input: 1

Input a value for the binary search tree to store: 5

Do you want to print the tree (Y/N): n

| Insert Menu |

|Input a corresponding option |

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

|1. Insert Single Element |

|2. Insert Several Elements |

|3. Return to Menu |

|Make Input: 1

Input a value for the binary search tree to store: 15

Do you want to print the tree (Y/N): y

Pre-Order Print

5 (0)

15 (0)

| Insert Menu |

|Input a corresponding option |

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

|1. Insert Single Element |

|2. Insert Several Elements |

|3. Return to Menu |

|Make Input: 2

Input the number of elements that will be added to the binary search tree: 5

Enter a 1 for manual entry or 0 to use random values: 1

Input a value to add to the tree: 4

Input a value to add to the tree: 3

Input a value to add to the tree: 2

Input a value to add to the tree: 18

Input a value to add to the tree: 19

Do you want to print the tree (Y/N): y

Pre-Order Print

5 (0)

4 (0)

3 (0)

2 (0)

15 (0)

18 (0)

19 (0)

| Insert Menu |

|Input a corresponding option |

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

|1. Insert Single Element |

|2. Insert Several Elements |

|3. Return to Menu |

|Make Input: 3

| Main Menu |

|Input a corresponding option |

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

|1. Open Insert Elements Menu |

|2. Open Delete Elements Menu |

|3. Open Print Menu |

|4. Miscellaneous Checking |

|5. Options |

|6. Quit |

|Make Input: 2

2

| Delete Menu |

|Input a corresponding option |

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

|1. Delete Single Element |

|2. Delete Whole Tree |

|3. Return to Menu |

|Make Input: 1

Remove a Node

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

Do you want to print the tree (Y/N): y

Pre-Order Print

5 (0)

4 (0)

3 (0)

2 (0)

15 (0)

18 (0)

19 (0)

Input the value of the node you want to remove: 5

One Child: Right

Pre-Order Print

15 (0)

4 (0)

3 (0)

2 (0)

18 (0)

19 (0)

| Delete Menu |

|Input a corresponding option |

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

|1. Delete Single Element |

|2. Delete Whole Tree |

|3. Return to Menu |

|Make Input: 3

| Main Menu |

|Input a corresponding option |

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

|1. Open Insert Elements Menu |

|2. Open Delete Elements Menu |

|3. Open Print Menu |

|4. Miscellaneous Checking |

|5. Options |

|6. Quit |

|Make Input: 3

3

| Print Menu |

|Input a corresponding option |

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

|1. In-Order Print |

|2. Pre-Order Print |

|3. Post-Order Print |

|4. Print Help |

|5. Return to Main Menu |

|Make Input: 1

2 (0)

3 (0)

4 (0)

15 (0)

18 (0)

19 (0)

| Print Menu |

|Input a corresponding option |

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

|1. In-Order Print |

|2. Pre-Order Print |

|3. Post-Order Print |

|4. Print Help |

|5. Return to Main Menu |

|Make Input: 2

15 (0)

4 (0)

3 (0)

2 (0)

18 (0)

19 (0)

| Print Menu |

|Input a corresponding option |

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

|1. In-Order Print |

|2. Pre-Order Print |

|3. Post-Order Print |

|4. Print Help |

|5. Return to Main Menu |

|Make Input: 5

| Main Menu |

|Input a corresponding option |

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

|1. Open Insert Elements Menu |

|2. Open Delete Elements Menu |

|3. Open Print Menu |

|4. Miscellaneous Checking |

|5. Options |

|6. Quit |

|Make Input: 2

2

| Delete Menu |

|Input a corresponding option |

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

|1. Delete Single Element |

|2. Delete Whole Tree |

|3. Return to Menu |

|Make Input: 1

Remove a Node

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

Do you want to print the tree (Y/N): n

Input the value of the node you want to remove: 4

One Child: Left

Pre-Order Print

15 (0)

3 (0)

2 (0)

18 (0)

19 (0)

| Delete Menu |

|Input a corresponding option |

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

|1. Delete Single Element |

|2. Delete Whole Tree |

|3. Return to Menu |

|Make Input: 3

| Main Menu |

|Input a corresponding option |

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

|1. Open Insert Elements Menu |

|2. Open Delete Elements Menu |

|3. Open Print Menu |

|4. Miscellaneous Checking |

|5. Options |

|6. Quit |

|Make Input: 3

3

| Print Menu |

|Input a corresponding option |

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

|1. In-Order Print |

|2. Pre-Order Print |

|3. Post-Order Print |

|4. Print Help |

|5. Return to Main Menu |

|Make Input: 2

15 (0)

3 (0)

2 (0)

18 (0)

19 (0)

| Print Menu |

|Input a corresponding option |

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

|1. In-Order Print |

|2. Pre-Order Print |

|3. Post-Order Print |

|4. Print Help |

|5. Return to Main Menu |

|Make Input: 5

| Main Menu |

|Input a corresponding option |

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

|1. Open Insert Elements Menu |

|2. Open Delete Elements Menu |

|3. Open Print Menu |

|4. Miscellaneous Checking |

|5. Options |

|6. Quit |

|Make Input: 6

6

**Run 2**

norsini1@LAPTOP-SHQGQOEO:/mnt/c/Users/Nicholas Orsini/Source/repos/Lab8/Lab8$ ./Lab8

| Main Menu |

|Input a corresponding option |

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

|1. Open Insert Elements Menu |

|2. Open Delete Elements Menu |

|3. Open Print Menu |

|4. Miscellaneous Checking |

|5. Options |

|6. Quit |

|Make Input: 1

1

| Insert Menu |

|Input a corresponding option |

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

|1. Insert Single Element |

|2. Insert Several Elements |

|3. Return to Menu |

|Make Input: 2

Input the number of elements that will be added to the binary search tree: 10

Enter a 1 for manual entry or 0 to use random values: 1

Input a value to add to the tree: 18

Input a value to add to the tree: 9

Input a value to add to the tree: 27

Input a value to add to the tree: 36

Input a value to add to the tree: 24

Input a value to add to the tree: 10

Input a value to add to the tree: 0

Input a value to add to the tree: 5

Input a value to add to the tree: 2

Input a value to add to the tree: 50

Do you want to print the tree (Y/N): y

Pre-Order Print

18 (0)

9 (0)

0 (0)

5 (0)

2 (0)

10 (0)

27 (0)

24 (0)

36 (0)

50 (0)

| Insert Menu |

|Input a corresponding option |

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

|1. Insert Single Element |

|2. Insert Several Elements |

|3. Return to Menu |

|Make Input: 3

| Main Menu |

|Input a corresponding option |

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

|1. Open Insert Elements Menu |

|2. Open Delete Elements Menu |

|3. Open Print Menu |

|4. Miscellaneous Checking |

|5. Options |

|6. Quit |

|Make Input: 4

4

| Miscellaneous Checking Menu |

| Input a corresponding option |

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

|1. Input Value to Print Data |

|2. Return to Menu |

|Make Input: 1

Input a value in your tree to print data on it: 0

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

|Node Data: 0

|Parent value: 9

|Right child value: 5

|No Left Child

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

|Successor Value: 2

| Miscellaneous Checking Menu |

| Input a corresponding option |

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

|1. Input Value to Print Data |

|2. Return to Menu |

|Make Input: 1

Input a value in your tree to print data on it: 5

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

|Node Data: 5

|Parent value: 0

|No Right Child

|Left child value: 2

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

|Successor Value: 9

| Miscellaneous Checking Menu |

| Input a corresponding option |

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

|1. Input Value to Print Data |

|2. Return to Menu |

|Make Input: 1

Input a value in your tree to print data on it: 9

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

|Node Data: 9

|Parent value: 18

|Right child value: 10

|Left child value: 0

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

|Successor Value: 10

| Miscellaneous Checking Menu |

| Input a corresponding option |

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

|1. Input Value to Print Data |

|2. Return to Menu |

|Make Input: 1

Input a value in your tree to print data on it: 10

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

|Node Data: 10

|Parent value: 9

|No Right Child

|No Left Child

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

|Successor Value: 18

| Miscellaneous Checking Menu |

| Input a corresponding option |

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

|1. Input Value to Print Data |

|2. Return to Menu |

|Make Input: 1

Input a value in your tree to print data on it: 18

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

|Node Data: 18

|No Parent

|Right child value: 27

|Left child value: 9

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

|Successor Value: 24

| Miscellaneous Checking Menu |

| Input a corresponding option |

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

|1. Input Value to Print Data |

|2. Return to Menu |

|Make Input: 2

| Main Menu |

|Input a corresponding option |

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

|1. Open Insert Elements Menu |

|2. Open Delete Elements Menu |

|3. Open Print Menu |

|4. Miscellaneous Checking |

|5. Options |

|6. Quit |

|Make Input: 2

2

| Delete Menu |

|Input a corresponding option |

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

|1. Delete Single Element |

|2. Delete Whole Tree |

|3. Return to Menu |

|Make Input: 2

| Main Menu |

|Input a corresponding option |

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

|1. Open Insert Elements Menu |

|2. Open Delete Elements Menu |

|3. Open Print Menu |

|4. Miscellaneous Checking |

|5. Options |

|6. Quit |

|Make Input: 2

2

The Binary Tree is empty. Try inserting an element.

| Main Menu |

|Input a corresponding option |

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

|1. Open Insert Elements Menu |

|2. Open Delete Elements Menu |

|3. Open Print Menu |

|4. Miscellaneous Checking |

|5. Options |

|6. Quit |

|Make Input: 6

6

**Run 3**

norsini1@LAPTOP-SHQGQOEO:/mnt/c/Users/Nicholas Orsini/Source/repos/Lab8/Lab8$ ./Lab8

| Main Menu |

|Input a corresponding option |

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

|1. Open Insert Elements Menu |

|2. Open Delete Elements Menu |

|3. Open Print Menu |

|4. Miscellaneous Checking |

|5. Options |

|6. Quit |

|Make Input: 1

1

| Insert Menu |

|Input a corresponding option |

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

|1. Insert Single Element |

|2. Insert Several Elements |

|3. Return to Menu |

|Make Input: 2

Input the number of elements that will be added to the binary search tree: 4

Enter a 1 for manual entry or 0 to use random values: 1

Input a value to add to the tree: 5

Input a value to add to the tree: 0

Input a value to add to the tree: 6

Input a value to add to the tree: 4

Do you want to print the tree (Y/N): y

Pre-Order Print

5 (0)

0 (0)

4 (0)

6 (0)

| Insert Menu |

|Input a corresponding option |

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

|1. Insert Single Element |

|2. Insert Several Elements |

|3. Return to Menu |

|Make Input: 2

Input the number of elements that will be added to the binary search tree: 3

Enter a 1 for manual entry or 0 to use random values: 1

Input a value to add to the tree: 2

Input a value to add to the tree: 10

Input a value to add to the tree: 9

Do you want to print the tree (Y/N): y

Pre-Order Print

5 (0)

0 (0)

4 (0)

2 (0)

6 (0)

10 (0)

9 (0)

| Insert Menu |

|Input a corresponding option |

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

|1. Insert Single Element |

|2. Insert Several Elements |

|3. Return to Menu |

|Make Input: 3

| Main Menu |

|Input a corresponding option |

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

|1. Open Insert Elements Menu |

|2. Open Delete Elements Menu |

|3. Open Print Menu |

|4. Miscellaneous Checking |

|5. Options |

|6. Quit |

|Make Input: 2

2

| Delete Menu |

|Input a corresponding option |

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

|1. Delete Single Element |

|2. Delete Whole Tree |

|3. Return to Menu |

|Make Input: 1

Remove a Node

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

Do you want to print the tree (Y/N): n

Input the value of the node you want to remove: 4

One Child: Left

Pre-Order Print

5 (0)

0 (0)

2 (0)

6 (0)

10 (0)

9 (0)

| Delete Menu |

|Input a corresponding option |

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

|1. Delete Single Element |

|2. Delete Whole Tree |

|3. Return to Menu |

|Make Input: 1

Remove a Node

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

Do you want to print the tree (Y/N): n

Input the value of the node you want to remove: 5

One Child: Right

Pre-Order Print

6 (0)

0 (0)

2 (0)

10 (0)

9 (0)

| Delete Menu |

|Input a corresponding option |

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

|1. Delete Single Element |

|2. Delete Whole Tree |

|3. Return to Menu |

|Make Input: 1

Remove a Node

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

Do you want to print the tree (Y/N): n

Input the value of the node you want to remove: 6

No children

Pre-Order Print

9 (0)

0 (0)

2 (0)

10 (0)

| Delete Menu |

|Input a corresponding option |

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

|1. Delete Single Element |

|2. Delete Whole Tree |

|3. Return to Menu |

|Make Input: 1

Remove a Node

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

Do you want to print the tree (Y/N): n

Input the value of the node you want to remove: 0

One Child: Right

Pre-Order Print

9 (0)

2 (0)

10 (0)

| Delete Menu |

|Input a corresponding option |

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

|1. Delete Single Element |

|2. Delete Whole Tree |

|3. Return to Menu |

|Make Input: 3

| Main Menu |

|Input a corresponding option |

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

|1. Open Insert Elements Menu |

|2. Open Delete Elements Menu |

|3. Open Print Menu |

|4. Miscellaneous Checking |

|5. Options |

|6. Quit |

|Make Input: 4

4

| Miscellaneous Checking Menu |

| Input a corresponding option |

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

|1. Input Value to Print Data |

|2. Return to Menu |

|Make Input: 1

Input a value in your tree to print data on it: 2

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

|Node Data: 2

|Parent value: 9

|No Right Child

|No Left Child

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

|Successor Value: 9

| Miscellaneous Checking Menu |

| Input a corresponding option |

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

|1. Input Value to Print Data |

|2. Return to Menu |

|Make Input: 1

Input a value in your tree to print data on it: 9

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

|Node Data: 9

|No Parent

|Right child value: 10

|Left child value: 2

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

|Successor Value: 10

| Miscellaneous Checking Menu |

| Input a corresponding option |

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

|1. Input Value to Print Data |

|2. Return to Menu |

|Make Input: 2

| Main Menu |

|Input a corresponding option |

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

|1. Open Insert Elements Menu |

|2. Open Delete Elements Menu |

|3. Open Print Menu |

|4. Miscellaneous Checking |

|5. Options |

|6. Quit |

|Make Input: 6

6